Exploring Cultures of Research Engagement at Eight English Secondary Schools

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Submitted for the award of the degree of
Doctor of Philosophy

2016

Declaration:

I, David Godfrey confirm that the work presented in this thesis is my own. Where information has been derived from other sources, I confirm that this has been indicated in the thesis.

Word count (excluding appendices and references): 94,292

Acknowledgements

Abstract

This doctoral thesis looks at the phenomenon of schools as sites of research-informed practice. This is framed within the context of significant recent changes to the English school system, notably the self-improving system and the introduction of Teaching Schools. The work of John Dewey and pragmatist thinking is a highly influential strand throughout. The literature traces initiatives in England since the 1990s to promote schools as researching institutions. The relationships between research, knowledge, learning and change are addressed. A mixed methods design used surveys of teachers at eight secondary schools in England; five schools were chosen for follow-up interviews, covering four stages of development. This research has three research questions:

1) *What are the features of a research-engaged school?*

2) *How can research–engaged schools develop educational practice?*

3) *How can school researching cultures develop over time?*

The first phase of the research maps out patterns of research development in eight secondary schools and the characteristics of the practitioners' views and motivations in relation to research engagement. In the second phase of the research, the development of research engagement at five schools was described through an Activity Theory lens. Schools were analysed as activity systems in which learning and development is driven by cultural and historical contradictions. Findings showed that the case study schools had researching cultures at four stages of development but that each context let to unique ways in which research engagement was enacted. Teachers in the case schools had highly nuanced views about what counted as high quality research. Research engaged schools employed a discourse of research to increase the quality of professional dialogue and learning. Where the right structures, spaces and cultures existed to contest and challenge power relations, research activity was able to lead to changes to practice, particularly through teacher leadership. Research provided tools that were able to leverage school development. Development through spirals of change is proposed in which research engagement characteristics combine with changes to the professional learning culture in a dialectic relationship of growth. The extent to which expansive organisational growth occurred partly depended on how much external accountability dominated. The implications for teachers, leaders and policy makers are discussed and possibilities for future research suggested.

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List of abbreviations

ALS – Action Learning Set
APP – Assessing Pupil Progress
AST – Advanced Skills Teacher
BERA – British Education Research Association
BPRS – Best Practice Research Scholarships
BSF – Building Schools for the Future
CARN – Collaborative (formerly *Classroom*) Action Research Network
CHAT – Cultural-Historical Activity Theory
CPD – Continued Professional Development
DfE – Department for Education
EAL – English as an Additional Language
EBITT – employment-based initial teacher training
EdD – Doctorate in Education
EEF – Education Endowment Fund
EPD – Early Professional Development
FSM – Free School Meals
GCSE – General Certificate of Education
GERM – Global Educational Reform Movement
GTP – Graduate Teacher Programme
GTCE – General Teaching Council for England
HE – Higher Education
HEI – Higher Education Institution
ICT – Information and Communications Technology
IEP – Individual Education Plan
INSET – In-Service Education and Training
ITT – Initial Teacher Training
IOE – Institute of Education (UCL)
JPD – Joint Practice Development
KS – Key Stage
KM – Knowledge Mobilisation
LO – Learning Organisation
LGA – Local Government Association
MA – Master of Arts
MTL – Master's in Teaching and Learning
NCSL – National College for School Leadership
NFER –National Foundation for Educational Research

NLC – Networked Learning Communities
NPQH- National Professional Qualification for Headship
NQT – Newly Qualified Teacher
NTRP –National Teachers Research Panel
NTS – National Teaching School
Ofsted – Office for Standards in Education
OL – Organisational Learning
OLM – Organisational Learning Mechanism
OU – The Open University
P4C – Philosophy for Children
PDS – Professional Development School
PGCE – Postgraduate Certificate in Education
PLC – Professional Learning Community
PLTS – Personal, Learning and Thinking Skills
RAP – Research Associates Programme
R&D – Research and Development
RCT – Randomised Controlled Trial
RE – Religious Education
RES – Research-Engaged School
RSA – Royal Society of Arts
SCITT – School-Centred Initial Teacher Training
SEN – Special Educational Needs
SENCO – Special Educational Needs Coordinator
SENJIT – Special Educational Needs Joint Initiative for Training
SLT – Senior Leadership Team
SSAT – Schools Students and Teachers network
TA – Teaching Assistant
TDA – Training and Development Agency for Schools
TES – Times Educational Supplement
TLA – Teacher/Teaching and Learning Academy
TLR – Teaching and Learning Responsibility
TLRP – The Teaching and Learning Research Programme
TSA – Teaching School Alliance
TTA – Teacher Training Agency
UCL – University College London
VAK – Visual, Auditory and Kinaesthetic

Chapter 1 – Introduction

Background

This thesis investigates the long-standing issue of how research can inform and enrich the practices and activities of school practitioners. This is examined specifically through the phenomenon of research-engaged schools. The aim is to gain an understanding of how such sites of research informed practice can be achieved and developed in secondary schools in the contemporary English context.

Throughout the late 1990's and throughout most of the period of the New Labour government (and prior to the worldwide economic crisis), there was a plethora of initiatives to encourage a closing of the gap between educational research in the academy and educational practice in schools. At the annual Teacher Training Agency lecture in 1996, its Head, Professor David Hargreaves (Hargreaves, 1996b) re-invigorated the debate about the value and role of research in education in England. Hargreaves had criticised the irrelevance of much research conducted in universities at the time, and he was supported by the findings of the Hillage and Tooley reports (Hillage *et al.*, 1998; Tooley and Darby, 1998). Hargreaves proposed that teachers' professionalism – and as a result, the learning of their pupils – would be much improved by a deeper engagement with research and evidence. Throughout his lecture, he made comparisons with the medical profession and the way in which the latter was much more 'evidence-based' than teaching. In England, a great deal of education policy during the period of New Labour Government (1997-2010) can be seen to have been motivated with these assumptions in mind.

In the early 2000s, the focus moved from how to promote research among individual teachers, towards a more system-wide approach. An element of this was the shift towards thinking about schools themselves as researching institutions (McLaughlin, McIntyre and Black, 2004). Examples of this included Networked Learning Communities (Earl *et al.*, 2006) and the Teacher Training

Agency's school-based research consortia (Kushner *et al.*, 2001). There was also a more formal elaboration of the concept of a research-engaged school (RES) during this time (Handscomb and MacBeath, 2003a/b) that lead to a series of case studies and work under the auspices of the National Foundation of Educational Research (NFER) (e.g. Sharp *et al.,* 2005).

However, the notion of a school having a researching culture has a history that stretches back much further. In the late 1880s in the USA John Dewey established the Chicago Laboratory School (Camp Mayhew and Camp Edwards, 1936). Rather like school programmes in the 1970s in England by Lawrence Stenhouse (Hopkins and Rudduck, 1985), the curriculum itself was created through experimentation and research; the school and classroom were viewed as laboratories. The laboratory school was extraordinarily progressive for its day. Indeed, its space to create a curriculum that was fluid and responded to the needs of the pupils allowed a degree of freedom for both students and staff that would be hard to imagine in most modern school settings. Experimentation on learning was conducted within the school, informed by emerging theories of pedagogy at the University of Chicago.

The "Dewey School" displayed many of the characteristics of what might nowadays be described as a professional learning community (PLC) (e.g.Cibulka and Nakayama, 2000; Hord, 2008; Stoll, 2010) and teachers engaged in what might be described as Joint Practice Development (JPD) (Fielding and Britain, 2005). Weekly meetings were held in which minute details of individual child's learning were openly discussed, often with parents in attendance. Learning was collaborative and ideas were openly debated in an environment that was challenging; teachers were encouraged to resist settling for conventional approaches to pedagogy. Teachers, as well as students, were expected to embrace cooperation rather than competition or isolation in their practice.

In the first year of research for this thesis (2011), approximately 100 National Teaching Schools were set-up in the initial cohort, shortly into the new coalition government (Conservative/Liberal Democrat). Although few specific references have been made in policy or academic literature, Teaching Schools have several very clear parallels with Professional Development Schools (PDSs) in the USA.

PD schools are the modern successor to the Laboratory School, established in 1990 in the Holmes Report (Hausfather, 2001). In particular, they share a remit to promote evidence-informed practices and practitioner research (see Appendix 20 for more details of this historic legacy).

Significance of this study. The context for this thesis is a time in which government reforms have once again raised the importance of developing research-engaged schools. Indeed, they play a key role in the government's school-led reform, which is explored further below in the idea of the 'self-improving system'. However, there is a sense that the latest emphasis on schools as centres for research had not built on the accumulation of learning about this issue both in the case of the US and Laboratory schools and PDSs, but also in the case of more recent historical initiatives in England.

These contextual developments have thus created a set of assumptions and expectations which in part are insufficiently unpacked and insufficiently supported by evidence. My thesis attempts to fill those gaps. In particular, the need to thoroughly articulate the nature of research-engaged schools, how they are supposed to lead to change and improvement in the system, and under what conditions they could be expected to develop and flourish.

The global context for England's reforms

The drive to improve the education system in England can be seen within a global narrative that has highlighted a shift to the so-called 'knowledge-economy' and 'network society' (Castells, 2011). Informational technology (notably the internet) has created a rapid change to the global flow and availability of knowledge. Teachers in this system need to prepare students to adapt to different environments, to be life-long learners, to learn through the use of new technologies and to see knowledge as a process of construction. Access to knowledge is less the issue; rather critical understanding and communication skills are the key to developing the intellectual capital that employers are seeking in this globalised economy. Thus teachers can be seen as being re-positioned as

'knowledge workers' (Drucker, 1998) in which inquiry and research and a deep knowledge of the learning process is required.

England's recent educational reform pattern can also be viewed as part of a global movement described by Pasi Sahlberg as the Global Education Reform Movement (GERM). He characterises this is as the widespread tendency towards: standardised teaching and learning; a focus on literacy and numeracy; teaching a prescribed curriculum; borrowing market-oriented reform ideas from private corporations and the use of test-based accountability and control (Sahlberg, 2011).

The continual and renewed preoccupation with school autonomy and accountability in England (and indeed, worldwide) (Glatter, 2012) arises out of a neoliberal political agenda that highlights parental choice and competition between schools. School leadership teams have also been obsessed with a performance management culture that comes from the world of business and 'New Public Management' (Hood, C.,1989). A new 'breed' of teachers have also emerged with a 'post-performative' identity; teachers whose experience as pupils has been of a highly performative schooling system (Wilkins, 2011a). Teachers' professional identities in England have been heavily influenced by the dominant external framework of reference given by Ofsted. This framework has created a 'panoptic performativity' culture in which Ofsted's criteria for effectiveness and quality have become internalised by school staff (Perryman, 2006). Alongside this, with the growth of powerful multi-academy chains, the managerial and organisational 'reculturing' aspects of Head teachers and Senior Leaders, increasingly set them apart from teachers in schools (Ball, 2013). The accountability system, which has been through numerous iterations of frameworks, has also shifted alongside this policy direction. Thus, strong autonomy, overseen by strong accountability, has become the model chosen within England for all maintained schools at primary and secondary phase. In this environment, the school leader becomes co-opted into this system of accountability and required to 'self-surveil' and self-regulate (Ball, 2013, p. 164).

Such priorities have led to a narrowed focus for the aims of education and to a dominance of measurements of quality that are steeped in a language derived

from financial auditing (Biesta, 2004). These priorities have also affected how research is framed, promoted and 'counted', i.e. what counts as effective research and what are considered the best forms of evidence. There is a danger that a model of evidence-based practice will dominate, one that leads to a prescriptive, top-down notion of how to improve standards in the profession. Therefore, it is important that, in research-engaged schools, practitioners should be able to engage critically with knowledge derived from research and combine this with other professional knowledge. Knowledge-creation through research practices in schools should also be driven by concerns of practice, and by the people that work the closest with students, particularly teachers.

The self-improving system

Another shift has been for policy-makers in England and elsewhere to re-focus their ideas about what the true drivers of change are in the education system. One popular conception of reform is that of an evolution through three stages (Hargreaves and Shirley, 2009). First; from the end of World War II and up until the 1970s, innovation was common but accountability was absent and consistency lacking. In response to this, standardised prescription from the top down saw the introduction of radical measures such as the National Curriculum for English schools. Hargreaves and Shirley describe this second phase as being characterised by "*competition and increased expectations but at too great a cost to student learning, teacher motivation, and leadership capacity in schools*" (2009, p. 12). The third way introduced a system which continued to encourage competition, accountability and standards but with added state support and partnerships between schools and many state and private providers. Educational reforms would now need to be approached 'systemically', taking into account the need to build leadership capacity, in order to achieve sustainable educational improvement (e.g. Fullan, 2009, p. 304; Hargreaves and Shirley, 2009; Hopkins, 2007).

In this 'third way', school leaders were (and still are) supported by bodies in England such as the National College for School Leadership (NCSL), to gain further skills, training and qualifications in a re-professionalised school environment. Top-down initiatives are now more widely seen as being about

supporting changes from the bottom-up, with the help of models of leadership which encourage and embrace collaboration and networking (e.g. Hargreaves, 2000; Spillane, 2012). Thus, the transformation of schools will now rely on the notion of a 'self-improving system' (Caldwell and Spinks, 2013a; Caldwell and Spinks, 2013b; Hargreaves, 2011; Hargreaves, 2010; Hargreaves, 2012).

A clear policy focus in this system has been to hold schools accountable for the under-achievement of particular students, such as those from economically disadvantaged backgrounds. This can be seen in how schools have to justify to Ofsted how they use pupil premium funding[1]. Thus, the EEF has created its toolkit to allow schools to make evidence-based decisions on how to make cost-efficient decisions about how to spend this money, "*We believe that educational research can help schools get the maximum 'educational bang for their buck', both in terms of making an initial choice between strategies, and in implementing a strategy as effectively as possible*" [2].

The building blocks of a self-improving system are:

1. Clusters of schools (structure)
2. Local Solutions and co-construction (culture)
3. Systems leadership (key people)

(Hargreaves, 2010)

The three key elements of a maturing self-improving system are:

The professional development dimension:
These are enabled through joint practice development; effective mentoring and coaching; talent identification and distributed staff information

The partnership competence dimension:

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[1] https://www.gov.uk/government/news/more-schools-use-pupil-premium-well-but-others-still-struggle

[2] http://educationendowmentfoundation.org.uk/toolkit/about-the-toolkit/

Enabled by fit governance; high social capital; collective moral purpose, or distributed system leadership; evaluation and challenge

The collaborative capital dimension:
Enabled by analytical investigation; disciplined innovation; creative entrepreneurship, and alliance architecture

(Hargreaves, 2012)

David Hargreaves has led thinking about the notion of a self-improving system in England, and he sees the existence and growth of Federations, Academy Trusts and TSAs as being a key middle-tier between schools and central Government (Hargreaves, 2010, p. 5). Whether this is in addition to, or instead of Local Authorities remains a contentious part of his proposed system. Throughout Hargreaves' 2012 think piece, the importance of conditions for various elements, such as time for collaboration and joint practice development (JPD) and an environment of trust and openness are described. The need for a moral purpose and for peer-review for challenge and evaluation are also stated. However, the extent to which such properties 'emerge' from a self-improving system is unclear, beyond stating examples of good practice from various businesses, schools and alliances.

This thesis seeks to address this point by proposing a theoretical basis for organisational learning, through which research-informed practices can be linked to school improvement.

Ideological thinking in the coalition government (2010 – 2015) to withdraw the role of the state from the workings of society means that the adoption of a 'self-improving system' can also be seen as a convenient policy tool. As sources of government funding have become scarcer, the infrastructure to support schools to lead reform has become weaker. A number of bodies that had previously received government funding in relation to teacher professional development or the promotion of practitioner research in England were closed, subsumed within other departments or had budgets greatly reduced. Some of the more significant changes included:

- The abolition of GTCE on 1st April 2012, to be replaced by The Teaching Agency. The former had a wide-ranging brief as the professional membership body for all teachers in England in the Primary and Secondary sectors, the latter having the much more limited role to ensure the adequate supply of high quality teachers (DfE, 2014a).

- The Teacher and Learning Academy, part of the above agency, was re-badged as the Teaching and Learning Academy, and taken over by a consortium of Universities and University Colleges (TLA, 2011). This body has had a role in supporting and accrediting enquiry-based learning in schools. One report about the former body, concluded that the TLA had "*enhanced outcomes around teachers' reflectivity, their capacity to self-evaluate, and wider dissemination than would otherwise have occurred (if it had not existed)*" (Lord *et al.*, 2009, p. 110). As the original body had the kudos of being part of a national professional teaching body, it remains to be seen whether the new TLA will have the same degree of impact in years to come. One of the case study schools in this research (Trinity Green School), relied heavily on the TLA structures to underpin much of its CPD activity.

- The abandonment of central government funding in March 2011, for the proposed New Labour Government scheme for all new teachers to have a Master's in Teaching and Learning (MTL) (Source: DfE, 2014a).

In proposing the 'self-improving system', the use of the word 'system' may also need further analysis; in the publication, "creating a self-improving school system" Hargreaves (2010) mentions 'building blocks' six times; 'architecture' twice and systems (or systemic) 108 times. Using words such as 'building blocks' suggest an engineering analogy while words such as 'development' (over 50 times) and 'maturity' suggest a living organism. The lack of a clear theory to understand systems, networks, growth and learning, means that key elements of the self-improving system remain obscure. Thus, when an organisation is said to be improving, maturing or learning, it may not be clear who or what is driving these changes or how we can measure or determine success. Without a clear concept

of learning or development, initiatives such as school research use, may be interpreted by different participants in the 'system' in entirely different ways or to serve disparate, or even contradictory aims. Thus, this thesis addresses the need to clearly conceptualise research-engaged schools and to address the **systemic** features of this.

Key Policy initiatives

Policy changes came quickly, immediately prior to and during the life of this thesis. Early in the life of the coalition Government, the DfE published a White Paper, 'The Importance of Teaching'; this set out an agenda for greater school autonomy, including, *"school-led school improvement replacing top-down initiatives"* (DfE, 2011a). From this White Paper, a number of other initiatives came, most importantly here, the announcement of the creation of Teaching Schools and the rapid expansion of school 'Academies'. The latter followed the models of Charter schools in the USA, and are formally detached from Local Authority control. In 2011 there were around 1000 Academies and by March 2016 these expanded to over 5000[3]. Academies have greater freedom to appoint staff according to local needs, including adjusting pay scales and taking on unqualified teachers. They also have greater financial autonomy (i.e. not determined by the local authority) and greater freedom to adjust their curricula. All of the schools in the case studies for this research were either in the process of changing to Academy status, or wished to do so in the near future.

A report from a network of schools that includes Academies[4], recommended that the Government help "*build capacity among heads for collaboration and challenge*" (Bassett *et al.*, 2012, p. 52). However, the logic that competition leads to the need for schools to improve, which in turn leads to the incentive to cooperate with other schools seems optimistic to say the least. The later 'plea' to school leaders to 'trust' each other and avoid short-termism in the same report

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[3] http://researchbriefings.files.parliament.uk/documents/CBP-7549/CBP-7549.pdf

[4] The Specialist Schools and Academies Trust (SSAT)

(2012, p. 53), reads like an admission of the difficulties of engendering such cooperation in the current structure. Thus research-focused school collaboration can be seen to operate under these tensions between cooperation and competition.

The government also set up National Teaching Schools and (to a much lesser extent) University Training Schools. The latter model was to follow the Finnish University Training School model, wherein a school, linked with a local university, would be a test-ground for research and a place for teacher trainees to learn their trade (for related articles, see Moran and Clarke, 2012; Myllyviita, 2012). Establishing such schools has been a slow process and by September 2014, only two had been agreed, one linked with University of Cambridge and another with University of Birmingham. Controversially, one application by the IOE to establish such a school in Holborn, London, was declined by the UK Government[5].

By contrast, Teaching Schools have expanded rapidly. The first 100 Teaching School Alliances (TSAs) started in September 2011 and by July 2016 there were 765 Teaching Schools (596 alliances) (July 2016)[6]. These schools become Lead Schools in an Alliance, and can include Nurseries, Primary, Middle, Secondary and All-through Schools; Sixth Form Colleges, Pupil Referral Units, Special Schools and Independent Schools. Five of the eight participating case study schools were newly-established in the first cohort of National Teaching Schools in 2011.

To an extent, this model had been applied before, when the Labour Government introduced 'Training Schools' in September 2000. This saw hundreds of successful schools being funded to take on a greater role in Initial Teacher Training (ITT), especially through new training routes such as the Graduate Teaching Programme (GTP). As this initiative progressed, many such schools

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[5] http://www.theguardian.com/education/2014/mar/11/chris-husbands-institute-of-education-training-school-rejectionschool-rejection

[6] https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/544761/Teaching_Schools_Map.pdf

(including Trinity Green School in this sample) developed a greater R&D role. Around a quarter of Training Schools received modest funding to conduct and disseminate research into effective models of teacher training. Other schools supported individual teacher research through Master's programmes or through the Best Practice Research Scholarships (see Furlong and Salisbury, 2005 for an evaluation of this programme).

The National Teaching Schools programme replaced this initiative, with a role more clearly defined and wide reaching than its predecessor's. The National College for Teaching and School Leadership (re-named in April 2013, after merging with the Teaching Agency) set out the so-called 'Big Six' objectives for Teaching Schools, which are to:

1. Lead the development of a school-led initial teacher training (ITT) system, either through School Direct or by securing accreditation as an ITT provider
2. Lead peer-to-peer professional and leadership development (continuing professional development)
3. Identify and develop leadership potential (succession planning and talent management)
4. Provide support for other schools
5. Designate and broker Specialist Leaders in Education
6. ***Engage in research and development activity***

(NCTSL, 2014)

TSAs were to become the prime-vehicle for professional development across the span of a teacher's career. TSAs would lead ITT, middle and senior leadership development and then develop systemic leaders who would lead improvement in other schools, called Specialist Leaders in Education (SLEs). Schools, in such a system, would need to be not only knowledge users but also creators. Mobilising knowledge from research and converting it into change at the classroom practice level can be seen as increasingly important within such an evolving ecosystem.

The message from central Government in England became one of 'freeing-up' schools to improve themselves. As Michael Gove, the newly instated Minister for Education (2010) described, *"(And) the attempt to secure automatic compliance with central government initiatives reduces the capacity of the school system to improve itself. Instead, our aim should be to support the school system to become more effectively self-improving. The primary responsibility for improvement rests with schools, and the wider system should be designed so that our best schools and leaders can take on greater responsibility, leading improvement work across the system."* (DfE, 2010, p. 13). Caldwell and Spinks (2013b) evoke similar language in their publication "The Self-Transforming School", referring to the metaphor of 'unchaining' schools.

The remit of Teaching Schools is ambitious and challenging. Joining a network overseen by the NCSL they need to be "*outstanding schools led by outstanding head teachers (National Leaders of Education), which have a track record in improving pupil outcomes through supporting other schools.*" (DfE, 2010, p. 23). These schools thus play an essential part of the analysis in this thesis, as they embody some of the transformative aims of research-engaged schools.

There were also significant changes to Ofsted (Office for Standards in Education). Ofsted is the regulatory body charged with inspecting all maintained (publicly funded) secondary schools (and most other categories of schools) in England. In January 2012, Sir Michael Wilshaw was appointed as Her Majesty's Chief Inspector of Education, Children's Services and Skills. Arriving with a reputation as an excellent Headteacher and credited particularly with having dramatically turned around the fortunes of a secondary school in East London (Mossbourne Academy), he introduced a new inspection framework for use in September 2012. This was the most significant change to the inspection framework for schools since 2005, when the requirement for schools to 'self-evaluate' was highlighted.

Ofsted occupy a key position in the English educational landscape. Full inspections (section 5 inspection visits) have the potential to dramatically affect schools. Inspection teams reach judgements of: 1. Outstanding, 2. Good, 3. Requires improvement (changed in the new framework from 'satisfactory') or 4. Inadequate (see Ofsted, 2014 for details of inspection framework). Those

considered 'inadequate' are subject to 'special measures', the consequences of which are that the school has additional inspections over the following two years. Schools that do not improve in time can be closed or leadership teams removed and replaced. Where a school 'requires improvement' (as in the case of 'Croxham' school in this research), further inspections follow-up the progress of the school and a full inspection occurs after two years. Those deemed 'good' from the last inspection are normally re-inspected (section 5 inspection) after five years, unless a risk-assessment leads to an earlier visit. Finally, schools awarded an 'outstanding' grade can, in the new framework, become exempt from future section 5 inspections, as long as risk assessments do not flag up any concerns. At the time of the survey and interviews (late 2011/early 2012), seven of the eight case study schools had been awarded 'outstanding' grades overall, however one such school (Barnfield Community School) has subsequently been downgraded to 'Good' in a visit under the new inspection framework. Media reports suggest that the new framework has made achieving an 'outstanding' grade more difficult than the previous one and many schools have suffered a similar fate to Barnfield (e.g. Harrison, 2013).

All of the above clearly indicates the 'high stakes' nature of the Ofsted school inspection system. The consequences for this research were multi-layered and are discussed in detail later, particularly in reference to the analysis of interview data.

To conclude, research engagement for secondary schools was subject to a context of deep cuts in a time of economic austerity and renewed demands for improvement, coupled with a new inspection framework with stringent new guidelines. Important changes were occurring that affected most or all of the case study schools in terms of designation to academies and/or as Teaching Schools. Numerous challenges emerged to Teaching Schools Alliances to embed research activity and to drive improvements across the system. Opportunities for a reinvigoration of the research-engaged schools movement also came to light in which sustainable, bottom-up driven approaches to research-informed practice could potentially thrive.

My positioning and motivation for this research

The focus for the following thesis was initially inspired by my work as a practitioner in a large sixth form college in the south of England. Having been given a free hand to coordinate practitioner research at the college, I came into contact with work conducted by the National Foundation for Educational Research (NFER) about research-engaged schools, attending a conference in London in 2003. This helped ascribe further meaning to my role, and I began to understand the multi-faceted nature of research engagement and how it could be further developed in my institutional context. Wanting to find out more about what was known in this area and how this was interpreted in other settings, I decided to take up the challenge of conducting empirical research as a piece of doctoral work. The additional challenge has been to switch my focus from a research coordination role at a sixth form college to looking at what was happening in secondary schools, where I felt that I could have more impact given the relatively large sector.

Since January 2011, when I enrolled on the PhD programme, my involvement with school-based research, as an Associate for the Institute of Education (London), has increased. This has had some consequences for my thesis. First of all, it meant switching from a full-time mode of study to part-time, pushing back from my original three-year plan to a five-year completion date. Secondly, there has been some reciprocal learning about school research engagement, where my involvement in a number of research projects has influenced my thinking and the direction which my thesis has taken. One part of this journey has involved writing an article for publication about leading research-informed schools (Godfrey, 2014). This was the first time that I began to think about research-engaged schools as operating within an ecological framework, or ecosystem. More recently I have discovered more about ecosystems, in relation to a report about 'leading thinking in Further Education' (2016, unpublished). Exploring this field has led me to previous work on skills ecosystems and a significant, and growing body of work on eco-leadership. I have also engaged in a number of projects, both as a facilitator and evaluator, including one on knowledge mobilisation (KM) in Research Learning Communities (RLCs) for the Education

Endowment Foundation[7] (EEF) and other work for the London Schools of Excellence Fund, to do with the use of Lesson Study[8].

Work on school-based research and enquiry has influenced my thinking when writing my thesis. Conversely, my emerging thinking from my doctoral research has influenced my work with schools. This iterative process mirrors the central issue that I explore through my case studies; school level practices in relation to knowledge generated through research. I have adopted the term 'research-engaged school' in most places; however, other terms such as research-led, research-informed or researching schools have been used interchangeably. This will be explored more thoroughly below in the review of literature.

I begin from the standpoint that developing research-engagement in schools is, in itself, a good thing, I state this on the grounds that research provides an additional source of knowledge on which teachers and school leaders can draw to take wise, informed action. In Chapter 2, I spell out more fully the conceptual relationship between research and practice that I propose should be most usefully applied to research-engaged schools. The concept of 'research-engaged schools' begs a number of questions about how research can lead to change, about how teachers and school leaders can improve practice through research, about the nature of teaching as a profession, and, ultimately, how we judge the success of our education system. It is in the inter-connectedness of schools with the wider system that my interests lie and in how research can lead to learning and empowerment of practitioners, and how practice can be enriched by engaging *in* and *with* research.

This thesis is exploratory and explanatory rather than 'evaluative' of research-engaged schools. Thus, I do not attempt to evaluate the 'effectiveness' of research-informed practice in schools, which would require some formal criteria to determine this. However, I do try to calibrate the extent to which case study schools have developed a culture that encourages research engagement. This is not, however, a judgement on how well a school is 'performing' or 'improving' by

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[7] https://educationendowmentfoundation.org.uk/projects/research-learning-communities/

[8] http://www.london.gov.uk/priorities/schools-and-education/for-teachers/london-schools-excellence-fund

some other external measure. Elsewhere, findings have suggested that research engagement in schools can lead to increases in pupil academic attainment, as well as encourage active learning, increase student enjoyment of lessons and lead to improvements in feedback (Sharp, 2007, p. 12). A systematic review of literature has shown that a range of pupil outcomes can be positively affected by engagement by teachers conducting and accessing (Bell *et al.*, 2010). However, given the range of ways in which research engagement is likely to have been implemented and interpreted, and the differing times scales of these approaches, overall judgements about the efficacy of research engagement in schools are in danger of over-simplifying the issue.

There is however, a useful place for evaluating the efficacy of certain approaches to research engagement in schools and one of these has occupied some of my time as a researcher. One ongoing Education Endowment Foundation (EEF)-funded project at the Institute of Education (IOE) for example, is evaluating the effects of specific research-into-practice approaches, using cross-school research learning communities made up of senior leaders and 'evidence-champions in over 50 primary schools in England. This is one of five current EEF-funded projects into school research use[9]. This type of large-scale research has the potential to illuminate some of the issues around the most effective methods of research knowledge mobilisation and use in schools.

Without specifying what we mean by research engagement, we run into the danger of stating the obvious, i.e. research engagement *can* lead to improvements in the school and for pupils. Whether it does will depend on a number of factors, such as the quality of the research, the relevance to the school's development priorities, the commitment of the teachers and so on. It is also worth considering that the time scale for improvement may be slower than some research designs are able to measure. Indeed, the improvements can occur to another school, where a school leader has taken their learning from research to a different context.

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[9] http://educationendowmentfoundation.org.uk/projects/projects-a-z/?tile=1&ids=0|674|676|675|673|672

The research-engaged school is essentially an institutionally-focused construct that seeks to bridge the research-practice divide that exists in school education. Therefore, in one sense the question of whether research-engaged schools are 'effective' in terms of school improvement or pupil attainment is too simplistic. By analogy, it would be hard to imagine anyone questioning whether doctors should take into account research evidence when treating patients. It is, however, important to critically explore some of the underlying assumptions behind certain conceptions of 'evidence-based' practice (or evidence-informed or research-informed practice). This is because these imply a particular view of teaching as a profession and particular ideas about the role of evidence alongside tacit forms of teacher knowledge. In other words, the question about whether research engagement can lead to more 'effective' practice, begs the question about by what criteria we judge effectiveness. Ultimately, then the purpose of engaging *in* and *with* research is essentially one about the values we are seeking to promote and the kind of education system we wish to create. In this sense, I agree with others who have called for a return to values-based rather than 'evidence-based' education (Biesta, 2007, 2010b).

The methodology

The research reported in this thesis involved eight secondary schools taking part in a survey that examined the extent and type of research cultures present at each school. An assessment of the survey data led to the identification of four stages in the development of research engagement across eight secondary schools. Five of the case study schools were then explored in more details; these represented a cross-section, with at least one school from each of four stages of development. These were selected for follow-up interview visits, where a mixture of school leaders, teachers and other practitioners were interviewed. Their accounts of the development of the school's research culture and their own experiences of the school as a learning community were recorded and analysed. All data collection took place between October 2011 and July 2012 (see appendix 2 for full timeline). Analysis of the data using an activity theory lens looked at the nature of the development of the school's organisational learning mechanisms and the role of research in this.

The aims, the contribution of this thesis and broad research questions

The overall aim of this research is to develop our understanding of research-engaged schools in a contemporary English context.

This thesis aims to contribute to the issues raised above in a number of ways. First, by looking across a wide sweep of literature, the concept of a research-engaged school is thoroughly examined and unpicked in order to strengthen the conceptual understanding of its role in educational improvement. Secondly, by employing knowledge from the literature, the research devised an original survey to describe the patterns and intensity of research engagement that could be found in eight secondary schools. Such an approach has not been taken in previous research that lacked sufficient clarity about these distinguishing features. Thirdly, by combining survey data with detailed qualitative accounts from school leaders and teaching staff, the factors that explain the development and nature of researching cultures at schools are also explored in more detail. Furthermore, this thesis offers an epistemology for how research can improve practice in schools and how organisations can be said to learn. Activity theory is used as a common theoretical lens across the school case studies; this provides a way of examining the schools' organisational mechanisms for learning and their potential for growth as research-engaged institutions.

This thesis essentially addresses three key questions:

1) *What are the features of a research-engaged school?*
2) *How can research–engaged schools develop educational practice?*
3) *How can school researching cultures develop over time?*

The literature review addresses these points, focusing particularly on the context of England. These research questions are then refined into specific empirical questions that were explored in the case studies. These are made explicit in the methodology section.

Chapter structure

Having introduced the context, the importance of the issue and the broad research questions in **Chapter 1**, **Chapter 2** explores the literature underpinning research-engaged schools in the English context. This is split into two aspects:

Chapter 2a explores the background behind research-informed school practice in England's recent history, in particular the teacher-as-researcher movement and the promotion of action research to transform practice in the 1970s and 1980s. This moves on to the promotion of the school as a researching institution in the 1990s and 2000s, including 'research-engaged school' initiatives (Handscombe and MacBeath, 2003).

Chapter 2b then turns to conceptual issues underpinning the research-engaged school and the role of theory. This includes how research can improve practice, how an organisation can be said to learn and what it means to be research-informed rather than evidence-based. The positioning of school practitioners in relation to academia and of schools as parts of a connected eco-system are also discussed. The process of organisational development through an Activity theoretical lens is explored and a conceptual framework is drawn up here.

Chapter 3 describes the methodology. The overall rationale for the research design is described as well as the epistemological and ontological stances taken. The two phases of the research; the survey and then the interviews are described, along with decisions taken regarding the construction of research instruments and how schools and teachers were sampled.

Chapters 4 and 5 'map' the eight case study schools as research-informed institutions and the participants as research-informed practitioners.

Chapter 4 summarises the findings from individual practitioners, treated as one body of data. The purpose here is to understand how school practitioners engaged in and with research, what their motives were and what they counted as research.

Chapter 5 describes the patterns of research-engagement at each school. This covers values, leadership and culture; support systems for research; the level of research activity; the impact of research and the sustainability of the schools as researching institutions.

Chapters 6a-e describe five of the school cases in detail. These combine the data from the surveys in phase 1 of the research with a second phase that involved interviewing key personnel at the school. Other sources of data include the school's Ofsted reports, websites and other research-related documents shown to me by the school. The history of the school's development of research and the practitioners' experiences of the school as a professional learning community are described.

Chapter 7 then synthesises the findings from the case study schools. Having described how research-engagement is enacted in practice (RQ1) in chapters 4-6, here I address research questions 2 and 3. Activity theory analysis is applied to see how research can lead to changes and improvements in practice (RQ2) and to how cultures of research-engagement can be further developed in schools (RQ3).

Chapter 8 discusses the research in relation to the wider context for how a research-engaged school can fit into a wider eco-system of self-improving schools.

Chapter 9 Summarises the findings and sets out implications for school leaders, policy makers and practitioners. Directions for future research are also discussed

Chapter 2 – Literature review

This chapter reviews the literature primarily in terms of what has been written about the school as a researching institution. Surrounding such a notion are a number of interconnected fields of literature: practitioner and action research, organisational learning theories, knowledge-mobilisation, evidence and research-informed teaching and leadership practices and school system related issues. Thus, initially, a strategy of reading widely was used; in order to identify key writers, thinkers and developments and relevant search terms for the core literature which was approached more systematically and comprehensively.

Systematic searches of the literature focused on publication years 1996-2015, in English language only. Selecting these dates allowed for a coverage of relevant developments during the New Labour Government (1997-2010), the subsequent Conservative-Liberal Coalition (2010-2015) and some of the present day Conservative Government period (elected in 2015). Literature was identified through:

- a search of relevant education and social science databases (BEI; ERIC; British Humanities Index; Australian Education Index; Sociological Abstracts; International Bibliography of Social Sciences; Web of Science and Social Science Citation Index; Psych Info)
- a search of relevant national organisation and government websites in the UK and internationally
- existing knowledge of publications and recommendations from my supervisor and other knowledgeable colleagues
- a search of expert authors in the field
- reference harvesting.

A complete list of the search terms used can be found in Appendix 1.

The wider contextual reading led to the identification of an important US-related strand to the idea of schools as sites of research-informed practice, namely Laboratory Schools (Camp Mayhew and Camp Edwards, 1936). These schools influenced the development of Professional Devevelopment schools in the US and also Teaching Schools in England. The bulk of this description has been moved to appendix 20 so as not to interrupt the flow of the literature charting the

development of research-engaged schools in England in Chapter 2a. Of particular note is the 'research-engaged school' movement, which took place before the 2010 coalition government's formal creation of Teaching Schools. The English context also has its own intellectual movements, notably the work of Lawrence Stenhouse and the Collaborative Action Research Movement at the University of East Anglia.

However, the philosophical underpinnings from pragmatism, in particular the work of John Dewey in the USA and modern interpreters of pragmatism, especially Gert Biesta, have greatly influenced my thinking. Thus, the sections in Chapter 2b which describe the epistemological underscoring of researched informed practice frequently refers to a pragmatist position. Activity Theory (e.g. Engeström, 1987) also became very influential in my thinking, most specifically as a way of describing organisational learning and development but also as this theory takes into account the historically grounded practices of schooling, teaching and leadership. The concept of expansive learning (Engeström, 2001) also has the benefit of combining ideas of both **development** of research engagement and the **situated learning** of practitioners in such schools. Issues of power, knowledge and definitions of research engagement are also addressed throughout these chapters, but in particular in Chapter 2b.

Chapter 2a – The emergence of the concept of schools as researching institutions in England

While Teaching Schools can be seen to follow a predecessor line originating with Laboratory Schools in Chicago and later to PDSs in the USA (see app.20), England has its own recent history of promoting schools as researching organisations. Such schools have not necessarily been the result of changes in formal designation of their responsibilities. Hence, the case studies in this thesis include three schools that fall outside this category but still engage *in* and *with* research. Researching schools have come about as a result of a number of factors, these include: funding opportunities, policy reforms, university initiatives and intellectual journeys to do with the nature of research and school practice. Throughout this recent period, the work of a relatively small number of 'champions' of school research engagement has been an important part of their development. Included in this section, is the emergence of the 'research-engaged school'. The latter particularly informs the construction of the survey tool described in Chapter 3. In addition there is a brief historical outline of the 'teacher as researcher' movement in England and the Collaborative Action Research Network (CARN). Both of these emerged in the 1970s but nevertheless influence much of the contemporary thinking regarding the relationship between research and practice in education.

Teacher research in England

The renewed vigour for research-based practice in the 1990s built on a tradition going back to the 1960s and 1970s in England, particularly in the work carried out by Lawrence Stenhouse. Working out of the University of East Anglia at the Centre for Applied Research in Education (CARE), he advocated action research as an integral part of teachers' professional roles (see Hopkins and Rudduck, 1985). Stenhouse bemoaned simplistic behavioural objectives approaches used in teaching in the 70s and 80s, suggesting that learning objectives could not be predetermined, except in the most general sense. He was also unhappy with the dominance of statistical paradigms of research derived from psychology and agricultural science. He felt that these tended to lead to generalisations and

prescriptions for teaching that favoured only weak teachers while hindering good teachers by being overly restrictive. Instead, he called for a form of extended professionalism (Hoyle, 1974) that would include the teacher having a role as a researcher. Analogous to Dewey's earlier schools, he referred to the classroom as a 'laboratory' and suggested teachers use 'experimental action research'. Stenhouse's work has been foundational in the understanding of research and practice in the English context, and the establishment of the SUPER, schools-research network at Cambridge can be traced back to his work (Ebbutt, Robson and Worrall, 2000).

Four foundational aspects emerge from Stenhouse's work: i) the legitimisation of classroom-based inquiry alongside traditional academic research; ii) the notion of knowledge being the route to emancipation for teachers and students; iii) the need for a 'power-shift' away from academia and towards practitioners ('academics justify their work to teachers' not the other way round), and iv) the importance in understanding the role of context and not settling for the idea that truth emerges from research where this has been 'factored out' (Dimmock, 2014, p. 2).

Collaborative action research

Covering a similar time period, the Collaborative Action Research Network (originally the C in CARN stood for Classroom) was created in England, founded in 1976 (Somekh, 2010). Created in the England, out of the University of East Anglia, by John Elliott, who had worked with Stenhouse on the Ford Teaching Project, CARN had a specific focus on action research for curriculum development. CARN was from its early days an international network, initially using contacts that Stenhouse had built up in Canada, the USA and Australia. Later, the group involved other professions, such as health care, and thus changed the 'Classroom' in its name to 'Collaborative' (ibid 2010, p. 105). Although avoiding narrow definitions of action research, those influential in the development of CARN, such as Elliott, Karr and Kemmis, Somekh and Stenhouse have developed an emancipatory intention to the work of the network. This includes aspects of Gadamer's notion of research for increasing agency through understanding social situations and Lewin's idea of research as a form of social

action to empower the unempowered groups in society (Somekh and Zeichner, 2009). Elliott stressed the importance of teaching as a 'practical science', following Stenhouse's call for teachers as researchers as the vehicle for developing professional knowledge. Elliott saw the development of understanding of the local context, through research, as a way of developing 'praxis' (moral wisdom). Influenced by Foucault's description of 'regimes of truth', he and others within CARN wanted to ensure that knowledge production involved teachers themselves, rather than relying on external 'expertise' to dictate how education and schooling should develop.

Echoing the work of Dewey, Elliott followed Stenhouse's view of curriculum as "*whatever was learnt as a result of interactions between teachers and learners*" (Somekh, 2010, p. 109). Action research, as proposed by CARN, was intended to be emancipatory for both teachers and pupils; its explicit aim of empowering teacher knowledge production asserting the equality of 'academic' and 'practical' forms of knowledge. For pupils, research was (and is) designed to address social issues, with the idea of addressing inequalities. Thus, the role of Habermasian critical theory was central, in that collaborative research was meant to occur within a democratized movement whereby open discussion occurred among equal participants (such as university researchers and teachers) (see Somekh and Zeichner, 2009, p. 8). CARN continues today, enjoying a widespread and fluid membership that retains the critical and emancipatory features of action research that underpin its movement. However, despite the contribution to academic thought about research of some of its longstanding members, and the impact on local practice of many of its projects, it has not grown to take up a focal point of influence on contemporary educational practice or policy.

The 1990s in England; research for school improvement

Throughout the late 1990's and throughout most of the period of the New Labour government (and prior to the worldwide economic crisis), there was a plethora of initiatives to encourage a closing of the gap between educational research in the academy and educational practice. At the annual Teacher Training Agency lecture in 1996, its Head, Professor David Hargreaves (Hargreaves, 1996b) re-invigorated the debate about the value and role of research in education in

England. Hargreaves had criticised the irrelevance of much research conducted in universities at the time, and he was supported by the findings of the Hillage and Tooley reports (Hillage *et al.*, 1998; Tooley and Darby, 1998). Hargreaves proposed that teachers' professionalism – and as a result, the learning of their pupils – would be much improved by a deeper engagement with research and evidence. Throughout his lecture, he made comparisons with the medical profession and the way in which the latter was much more 'evidence-based' than teaching. In England, a great deal of education policy during the period of New Labour Government (1997-2010) can be seen to have been motivated with these assumptions in mind.

The context in the 1990s saw the re-emergence of action research directed towards school reform and teacher improvement. The influence of the 'accountability' agenda of schools and teachers grew during this period, and this had an effect on the debate surrounding the role of research during this period. Research was less about social action and curriculum development and more narrowly defined as pertaining to 'raising standards' (particularly results in standardised examinations) and providing evidence about 'what works'. While teacher action research re-emerged as a strand in policy thinking, this was instrumental and less about political and social criticality. At best, action research was seen as a systematic way of encouraging reflective practice to guide action, at worst it was a way of controlling and co-opting teachers and schools into certain types of perceived 'best practice'. Somekh and Zeichner (2009, p. 15) describe this political co-option as the second (of five) ways in which action research has been remodelled, particularly in western contexts such as the USA and England.

Hargreaves was highly influential, and continues to be, including in the thinking about the role of Teaching Schools. He has written about: the role of research evidence in teaching (Hargreaves, 1996a; Hargreaves, 1996b; Hargreaves, 1999b); the school as a learning organisation (Hargreaves, 1999a; Hargreaves and Hopkins, 2005); the encouragement of a model of collaborative, inquiry-based professional development and decision-making (Hargreaves, 2003) and the self-improving system (Hargreaves, 2010; 2011; 2012). His body of work has

addressed the need to look systemically at, among other things, the system that surrounds evidence production and use and how to connect this with improvements at the level of pupils' learning.

Out of this drive to strengthen links between educational policy, practice and research in the 1990s and early 2000s in England, came a plethora of initiatives (see Cordingley, 2011). Some of these focused on supporting practitioner involvement in research, such as the Teacher Training Agency (TTA) teacher research grants in 1996 (see Cordingley, 2009), Best Practice Research Scholarships (BPRS) (Furlong and Salisbury, 2005), the Training and Development Agency's Postgraduate Development programme supporting Masters level CPD for teachers and the GTCE's TLA (Lord *et al.*, 2009). Others were aimed at school leaders in the promotion of school research engagement, such as the National Teacher Research Panel[10] and the National College's Research Associate Programme (Coleman, 2007).

Other initiatives examined the whole system and sought to bring research policy and practice together, such as the National Educational Research Forum (Morris and Peckham, 2006) and helping schools and practitioners to best make use of evidence, such as the Centre for the Use of Research and Evidence in Education (CUREE[11]). A huge funded programme by the Economic and Social Research Council, known as the Teaching and Learning Research Programme (Pollard, 2006; Pollard, 2010) sought to build an effective evidence-based store of knowledge for the use of practitioners and policy makers in education. The EPPI-centre[12] at the IOE in London was established to synthesise research knowledge, principally through systematic reviews. This was designed to address one of the criticisms of the Hillage report that there were not enough conclusive answers from the research to help inform school leaders, politicians or teachers in their decision-making. Initiatives to mobilise knowledge for practitioners included the Research of the Month Website at the GTCE (Coleman, 2007). Many of these initiatives collapsed in the wake of a world-wide economic recession and reforms by an in-coming coalition government in 2010 (see Cordingley, 2011).

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[10] http://www.ntrp.org.uk/

[11] http://www.curee.co.uk/

[12] http://eppi.ioe.ac.uk/cms/

Teachers as researchers. What counts as research?

While there is a great deal of agreement about the need for evidence to be used to inform practice, and for teachers to be critical consumers of research, the idea that teachers should conduct their own research is not universally supported (Tatto and Furlong, 2015). Some argue that too much time can be spent on training teachers to learn the skills of a researcher at the expense of school improvement aims (Nelson and O' Beirne, 2014, p. 31). Nevertheless, when teachers engage in research their students' learning tends to 'mirror' the way in which they gain professional knowledge (Swaffield and MacBeath, 2006, pp. 206-207). Since, as it has been argued, that students in a 21st century Knowledge Economy (Drucker, 1998) need to learn how to be critical, creative; to have excellent communication skills and information technology *savoir-faire* – current modes of passive teacher learning will therefore not suffice. By engaging in research the teacher can model a knowledge construction approach to learning (e.g. Fosnot and Perry, 2005). Research activity can develop skills for information technology, criticality and networking in teachers that they will need if they are seeking to pass on this way of learning to their students. Indeed, some writers have suggested that the construction of knowledge on the use of technology in education can be further enhanced though the co-collaboration of students in the research process (e.g. Davis and Morrow, 2010).

Furthermore, as teachers enquire about their own context, they define and explore the nature of the problem to begin with and thus decide 'what' to improve as well as help define what should be meant by 'improvement' itself. This is particularly important in the context of school work where there exist many 'wicked problems' (Rittel and Webber, 1973) in which there is no shared idea for what the problem consists of or what a solution might look like.

Formal definitions of 'research' have not generally appeared in the literature on research-engaged schools. In previous chapters we have explored the topic that ideas for what constitutes research differ between academics and practitioners and that new ways of determining quality in research may be required to bridge

this gap (Anderson and Herr, 1999; Furlong and Oancea, 2006; Furlong and Oancea, 2008). This will be an ongoing tension within research-engaged schools. One of the key terms in a plethora of literature is usually taken to be that of the centrality of 'enquiry' (often written as 'inquiry') (e.g. Bubb and Earley 2014; Cochran-Smith and Lytle 2001, Groundwater-Smith and Hunter 2000; Rallis and MacMullen, 2000).

This body of literature includes a range of examples of research that would normally be proximal to definitions of action research, for instance one book on '*the reflective educator*' defines teacher enquiry as being focused on providing, "*the insight into a teacher's classroom practice in an effort to make change*" (Dana and Yendol-Hoppey, 2014, p. 6).

The process of enquiring, i.e. to ask questions, is often suggested as a focal emphasis for teacher learning or leadership of schools or PLCs. These ideas come closer to the notions of Dewey's (1997) reflective action and Schön's (1983) '*reflective practitioner*'. A comparison here can be made between Stenhouse's definition of research as: '*systematic enquiry made public*' (Stenhouse, 1981, p. 104) and a more contemporary definition of 'teacher enquiry' as: "*systematic, intentional study of one's own professional practice*" (Dana and Yendol-Hoppey, 2014, p. 6). The important features of these are: i) an orientation to professional learning that is initiated and driven by the curiosity and concerns for action on the part of the teacher (and usually the effects of these on students) rather than externally 'transmitted' by an expert or a piece of research, ii) that there is an intention to learn and interpret actions and their consequences that is less spontaneous and more 'visible' than would otherwise be the case in day-to-day reflections on, and in, practice. Where some make distinctions in the literature, this is often a matter of standpoint in relation to the notion of 'evidence-based vs research-informed' practice (see above), and these may favour traditional 'academic' modes of understanding the quality of methodologies and outputs on these terms. However, in the tradition of both Dewey and Stenhouse, which I follow, the term *research* is more inclusive.

This is not to say that formal, 'academic' research cannot have an important place in the research-engaged school; indeed, this can in many ways help provide a strong basis for action by school practitioners. This is because the application of

academic research outputs benefits from being carried out by practitioners: i) with practical and theoretical expertise, including familiarity with a field and competence in data collection; ii) who use carefully designed and systematic procedures and rigorous analyses, which consider concerns for validity and reliability of data; and iii) are able to moderate their claims, according to understanding about the degree to which findings are able to be generalised to wider groups. These outputs are also moderated by a process of peer review that occurs particularly through publication in journals (Brown, 2013).

I take 'enquiry' and formal 'research' to be two ends of one continuum, and take the pragmatist position that no knowledge is more 'important' than another in some kind of hierarchical system (Biesta and Burbules, 2003). As a continuum, the terms are interchangeable and at the 'research' end of this scale, would include more: piloting data collection tools, 'cross-checking', validation, greater depth/length and engagement in a prior body of knowledge or literature, for instance. The more inclusive definitions of research promoted by Stenhouse and others that talk of 'enquiry' also help to break down traditional divisions between practice and academia and thus the imbalance of power that both Stenhouse and those that worked in the CARN movement sought to promote. In my view, such an approach is relevant to the context of contemporary research-engaged schools too.

The 'problem' of needing 'high quality' research, or in stressing the importance of using 'academic' research, versus the tension with knowledge and power, can be reconciled by adopting a pragmatist position to the nature of knowledge and reality (see Chapter 3 for a fuller description of transactional realism). The extent to which claims made from research (or any other form of knowledge) are 'true' is irrelevant in pragmatism; all we can do is to make 'warranted assertions' (Biesta, 2010a). Nevertheless, the more systematic and rigorous nature of some research may be interpreted as lending greater warrant to an assertion made in its name. This may also afford great 'leverage' for change by an individual or group who can 'wield' this knowledge. However, these advantages will be balanced by the amount of time and resources required to pursue more formal modes of research and the need for a timely resolution to a pressing school issue. Therefore, we

might expect a certain trade-off in decisions of this nature when school leaders promote their own research/enquiries.

There has also been a well-documented shift away from 'traditional', academic forms of knowledge production, arising from universities (Mode 1) and most evident in formal academic research outputs, towards less formal, more context-based (Mode 2) knowledge, driven by problems of practice and located in solutions within defined contexts (Gibbons, Limoges and Nowotny, 1997; Gibbons *et al.*, 1994). This also means that defining 'research' and thus capturing how it is possible to 'identify' a research-engaged school becomes relatively difficult. My response to this, in terms of data-collection from the teacher surveys and staff interviews, is to ask teachers for examples of research without an *a priori* definition and then to code them inductively, to see what the practitioners themselves include (explored further in Chapter 4). Perhaps a useful 'rule of thumb' to adopt would be an expectation that staff in research-engaged schools would be used to dealing with a range of research and research outputs (evidence) and accustomed to making sense of these in terms of their own practice.

Initiatives in the UK to develop researching cultures in schools

Further schemes focused on building up networks or partnerships of schools based around research, for example Networked Learning Communities (Earl *et al.*, 2006) and the Teacher Training Agency's school-based research consortia (Kushner *et al.*, 2001). These programmes were examples of the trend towards seeing the school itself as a research institution, an idea that Donald McIntyre described as "*much more complex than that of teacher-as-researcher, and one that has developed more slowly*" (McLaughlin, McIntyre and Black, 2004).

The School-University Partnership for Educational Research (SUPER), which began in 1998, arose out of David Hargreaves' and Donald McIntyre's thinking about the impact of educational research and the perceived need to bring research closer to the needs of teachers and schools. Ebutt (2002, p. 124) positions the SUPER project within the debate about evidence-based practice and "*the production of useful professional knowledge*", and clearly identified as a key strand in its thinking "*the need for schools to change and adapt*

organisationally" (McLaughlin, 2006, p. 6). As such, those involved in SUPER were interested in how research cultures developed in schools, why teachers engaged *in* and *with* research, how research is used and who participates in research.

This idea has parallels with the health and social care "organisational excellence model", in which "*the key to successful research use lies with social care delivery organisations: their leadership, management and structure. The emphasis is on developing a 'research-minded' culture within the organisation that is open to research and supports its use…*" (Bell *et al.*, 2010, p. 10).

These long-existing partnerships between schools and a Higher Education (HE) partner (and often the Local Education Authority), included three from The University of Cambridge and one from The University of Manchester.

University of Cambridge	University of Manchester
1. **SUPER** 1998 – present (see above) 2. **CamStar** – Cambridge, School Teachers and Research. 2001 – present 3. **HertsCam**, 1999 – Present	**1. NWCSEUS** – North West Consortium for the Study of Effectiveness in Urban Schools 1995 - present

These were designed to support evolutionary change within schools towards a research-informed culture. Such longstanding research partnerships have outlasted many other initiatives designed to promote engagement in research by teachers in the UK over the last 15 or so years, such as Best Practice Research Scholarships (2000-2004) and the TTA school-based research-consortia (1997 – 2000). They also allowed for the university partner to both influence and chart this journey (e.g. Ebbutt, 2002; McLaughlin, 2006). The NWCSEUS, for example, aims to support school improvement through school-based action research, with a goal to "*establish a research culture within schools in order to improve practice and to raise teaching standards*" (Brown and Macatangay, 2002, p. 37).

The research-engaged school

Within this context, in 2003, the concept of the 'research-engaged school' arose, championed by Graham Handscomb, then Head of Best Practice and Research at Essex County Council, along with John MacBeath of Cambridge University, in a pamphlet for the Forum for Learning and Research Enquiry (FLARE). Interestingly, the only research cited by Handscomb and MacBeath in their 2003 publication is the work by David Ebutt at Cambridge on schools with research cultures (Ebbutt, 2002). Ebutt's research, out of the Faculty of Education at Cambridge, is a rare example of empirical evidence that speaks directly to the idea of a school as a research-informed organisation.

The concept of a "research-engaged school", tapped into policies then current concerning professional development by the English Department for Education and Skills (DfES) (source, Handscomb and MacBeath, 2003a). The authors of the FLARE report were looking at a way of connecting research to practice (and to an extent, policy) via the mechanisms of the school itself.

"*Above all we feel that what distinguishes a research-engaged school is that research and enquiry is at the heart of the school, its outlook, systems, and activity*" (Handscomb and MacBeath, 2003b, p. 3).

The report was designed to "*open up debate with colleagues in Essex schools and invite response*" (ibid).

Key aspects of the research-engaged school are:

- A research rich pedagogy
- A research orientation
- The promotion of research communities
- Putting research at the heart of school policy and practice (ibid)

Despite having a multi-faceted definition of the 'research-engaged school', the report starts with the question, aimed at teachers (in Essex schools initially) "*Why research?*" (ibid, p. 3), the initial thrust thereby being aimed at encouraging teachers to engage **in** research, very much in the spirit of Lawrence Stenhouse's teacher-researcher movement (e.g. Stenhouse, 1981). His idea of, "*systematic inquiry made public*" (Stenhouse, 1985, p. 185) does little to clarify the debate

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about what counts as research, and the ongoing issue of quality and validity in relation to practitioner and school-based research (e.g.Anderson and Herr, 1999; Campbell and Groundwater-Smith, 2007; Cochran-Smith and Lytle, 1998; Furlong and Oancea, 2006; Furlong and Oancea, 2008; Oancea, 2005). However, it is clear that the authors are seeking to promote a critical engagement with research, and one that acknowledges the role of teachers as professionals, using their own judgement to interpret and incorporate research findings in the context of their practices. Wilkins (2011b, p. 10) unpicks Stenhouse's definition in terms of the research-engaged school thus:

"*Systematic and Sustained*

- *Process of enquiry is conscious*
- *Enquiry addresses clear questions*
- *It has a sense of purpose and timescale*
- *Documentary records are maintained*
- *The enquiry is linked to relevant research literature*
- *Attention is given to authenticity and trustworthiness*

Made Public

- *The enquiry is discussed with colleagues*
- *It is the subject of contributions to conferences and networks*
- *Documentary records are accessible*
- *Reports are made available*"

To make explicit the various strands of the definition, a research-engaged school should differ from other schools in that it:

1) Promotes practitioner research among its staff
2) Encourages its staff to read and be responsive to published research
3) Welcomes (as a learning opportunity as well as a responsibility to the wider educational community) being the subject of research by outside organisations
4) Uses research to inform its decision-making at every level
5) Has "*an outward looking orientation*" (Wilkins, 2011b) including research-based links with other schools and universities.

The kind of research encouraged in the FLARE booklet is positioned as an antidote to prescriptive, top-down approaches to evidence-based education, the latter relegating teachers to 'implementers' rather than 'enquirers' and stripping them of ownership of a robust professional evidence base. Teachers in such schools would "*be critical of received wisdom, to be sceptical of easy answers, to have a desire for evidence and to foster 'aggressive curiosity'* ". Echoing

Hargreaves idea of the 'knowledge creating school' (Hargreaves, 1999a), which would have the capacity to contribute to the knowledge base of the educational research community, the authors go on to say that "*it (the school) recognises that at every level there is a [sic] research of some kind already ongoing, and finds ways of supporting that endeavour and making it more rigorous, transparent and of value **not only to the school itself but to a wider constituency**"* (my emphasis) (Handscomb and MacBeath, 2003b, p. 4).

The authors' notion of a school engaged with research is one in which research and evaluation are seen as "*integral to the day-to-day practice of school and classroom*", furthermore "*it (research and enquiry) is built into the school's culture which fosters groups within and beyond the schools collaborating on research and enquiry activity*" (ibid, p. 4). This "*outward-looking professional orientation*" is emphasised in a more recent reformulation of the concept of a research-engaged school (Wilkins, 2011b). Wilkins (2011b, p.6) reinforces the importance of such an orientation, saying that "*it was (and still is) possible for a school to be heavily involved in teachers' action research in a way that not only was disconnected from the wider world of education research, but in other respects had an inward-looking focus*". The implication for research-engaged schools is that they would be receptive to collaborative partnerships and networks and indeed to being the object of research.

Bringing the concept of research-engaged schools up to date, Dimmock (2014) has proposed a set of characteristics for such institutions:

1. Schools will need to become the sites for research design, methodology and application.
2. Educational research will need to take the form of intervention projects tackling practical problems.
3. System and school governing body expectations will be that schools conduct research (e.g. action research) projects as part of their normal ways of working.
4. Joint research programmes between schools and universities will need to become commonplace.
5. Every school will need teachers with research skills; indeed, research capacity will need to become part of teachers' job descriptions.
6. Formal roles will need to be established in schools, such as a research coordinator and even a research division.

7. A research approach and methodology is needed that is conducive to collaboration and even role-switching between teachers and researchers; design research appears to be a promising approach.

Differentiating Research-Engaged Schools from other research initiatives

In addition to the above features of a research-engaged school mentioned above, other writers have identified the use of school self-evaluation, the use of data to inform decisions and the involvement of students as researchers (McIntyre, 2004, p. 24). In my view these are practices consequential to having become researching institutions *rather than central to understanding the concept*.

To take the point about data-driven decision-making, this aspect has become an increasing feature of schools in England (Earl and Katz, 2006). The interpretation of league tables, SAT results, General Certificate of Education (GCSE) results, achievement gaps and Ofsted grades has become an increasing challenge to school leaders, teachers, parents and policy-makers. However, while data-rich environments can help stimulate thoughtful questions, one of the "*basic characteristics of a researching school must surely be that it asks its own questions and that it evaluates critically the quality and appropriateness of any available data for answering these questions*" (McIntyre, 2004, p. 28).

Schools in England have long since been urged to engage in cycles of self-evaluation, and the importance of this process has increased in successive revisions to Ofsted frameworks for the conduct of inspection, starting in the late 1990s (e.g. MacBeath, McGlynn and Rudd, 2003). The notions of 'evaluation' and 'research' are also inter-connected. Evaluation forms both the principal purpose of certain kinds of research, and also an element within data interpretation in a much wider range of research projects. There is clearly a great deal of complementarity between the ideas of school self-evaluation and research-engagement, such as the balancing of external with internal accountability (Rallis and MacMullen, 2000) and the encouragement of peer review and critical friendship (Swaffield and MacBeath, 2005). Self-evaluation is a process that is also mandated for schools and many use the standard Ofsted framework and criteria to do so. This can create the tendency for a school to narrow its field of enquiry and to merely 'self-inspect' (Ferguson *et al.*, 2000).

Where a researching school differs, and goes further, in my view is that it sets its own agenda, framing questions in a way that are most appropriate to its context and offers alternative methodologies, such as action research, of which the aims and processes may be other than 'evaluative', such as exploratory, trialling, theory-building or increasing practitioner understanding. Nevertheless, there is a synergy between the efforts of schools to self-evaluate in order to improve and schools that pursue research engagement, a point that has been noted elsewhere (e.g. MacBeath, 2008).

Regarding student involvement in research, this is an area that deserves attention as a phenomenon within itself. Involving students as researchers has been examined by several authors in the English context, for example with the aim to empower students in decision-making (Frost and Holden, 2008); learning how to become active citizens (Fielding, 2004) or helping towards school improvement (Roberts and Nash, 2009). Schools that have had long-term interests in research engagement naturally tend to want to access knowledge from their students.

There can be a number of motivations for this:
- Evaluating aspects of school provision, such as particular courses, lessons or teachers
- Students generating their own knowledge, to provide a unique insight into aspects of schooling that only the students could express or be aware of
- Empowering students to be democratic citizens
- Validating research findings of projects initiated by staff

The extent to which schools that have adopted a research focus engage with students varies greatly however, so that it is difficult to say that a research-engaged school would have a particular, unique slant on this. Schools in Cambridge's SUPER partnership reflect the entire range in this regard, from being "*a powerful tool to aid teacher research*", a "*potent force for curriculum reform*", to "*a safer alternative than teachers engaging in research*", or indeed an area of mistrust by teachers (McLaughlin and Taber, 2006, p. 170). Consulting students, or indeed other stakeholders (members of local authorities, higher education, parents), can also be seen as integral to the activities of research-engaged schools. However, I am sceptical about the extent to which students are likely to drive a research agenda for themselves, without considerable support from research-savvy teaching staff or external support. Therefore, the extent to

which student research can be pursued meaningfully is likely to depend on other features of the school ethos, such as its views on democracy, authority and cooperative learning.

To sum up, self-evaluation, data-driven decision-making and students as researchers are synergistic and complementary to research-engaged schools, but none is a distinctive feature that separates them from other schools. The exact ways in which schools themselves (and teachers within them) understand and interpret 'research engagement' within their own contexts is one that is still relatively unexplored territory.

Empirical support for research-engaged schools

One of the largest empirical studies into research-engaged schools to date came in a project undertaken by researchers at the National Foundation for Educational Research (NFER) sponsored by the GTCE, the Local Government Association (LGA) and the NCSL. This was captured in a book entitled "*Postcards from Research-engaged Schools*" (Sharp *et al.*, 2005) but also provided the basis for other reports on the role of Local Authorities (Wilson, Hemsley-Brown and Sharp, 2003), advice for school leaders (Sharp, 2009; Sharp *et al.*, 2006a) and advice for researchers working in schools (Sanders *et al.*, 2006).

The project was based on a study of 15 schools (a mixture of primary and secondary phases) and five English Local Authorities over a period of two years, the data derived principally from 60 interviews with school leaders and other key staff. The NFER researchers and, in some cases other university staff, supported each school with its own research focus and desired pattern of engagement with research. Each subsequent report, produced as a result of this overarching study, needs to be read with an understanding of the audience and purpose of its publication; the 'promotional' and 'celebratory' dimension being evident throughout. The undercurrent of fairly unreserved positivity was, no doubt, propelled by the (in some respects laudable) desire for respondents to paint a favourable light on the activities of their own school or university department.

Taking the report on the role of the researcher (Sanders *et al.*, 2006) as an example, the aims of this booklet were stated as, "*inspiring researchers wishing*

to become engaged in practitioner enquiry for school improvement" and to "*provide practical guidance, drawing on examples of researcher-practitioner relationships*" (ibid, p. 3). Indeed, it is these two aims which detract from an impartial and critical approach to the data analysis itself. With respect to the first aim, the distinctly rosy spectacles offered to researchers wishing to get involved with school research partnerships, potentially conflict with any findings which speak to the inherent difficulties of working between the two different cultures of the academy and teacher's everyday practice (e.g.Ebbutt, Robson and Worrall, 2000; Hammersley, 2005). In the second aim, the way in which "practical guidance" is adduced from the examples in the research is not entirely clear, nor whose voices are being privileged or the extent to which views of participants were triangulated. Numerous quotes are given from teachers and researchers to back up points made throughout the text. These illustrate key lessons learned, such as reflections of working in partnership and learning to engage with evidence, and these neatly illustrate the points made in the article. There is a sound context for the findings made by reference to numerous published research studies, theories and models. Nevertheless, given the lack of information in the report about the context in which the quotes were made, the theoretical framework or what form of analysis was used to code the data, it is difficult to verify the warrant for the report's assertions.

Another study carried out to investigate research-engaged schools was commissioned by the then Department for Children Schools and Families (DCSF) and coordinated by Essex Local Authority. The report was written by Caroline Sharp of the NFER and was intended to obtain evidence of the impact of teacher research on pupil, staff and whole-school outcomes, and to help the DCSF to further understand "*the kinds of support schools may need to encourage them to become engaged in and with research*" (Sharp, 2007, p. 3). Four schools, two primary and two secondary schools (one comprehensive and one selective) were involved and interviews were conducted with eight teachers and senior leaders of these schools. Two of the schools were involved in the original NFER project in 2003 and, of the four, only one was judged to have research and enquiry at the heart of its outlook, albeit this deduction will have been made as a result of interviews presumably with one or two members of staff at most (one being a senior manager of the school, no doubt).

The claims of this project to measure the impact of research orientation on staff, students and the whole-school are very much open to question. As only eight members of staff were interviewed, some of whom had a stake in the 'success' of their activities, it is not clear the extent to which claims for outcomes such as "improved confidence and sense of professionalism" and "*improved collegiality with staff and empathy with learners*" (Sharp, 2007, p. 15) were shared among the wider body of staff. Regarding the impact on students, some claims are made about improvements in results, in motivation and in the spreading of independent learning styles; again, the basis for these claims remains unclear.

Despite the limitations of the data gathered, some interesting patterns of research engagement are discernible from these case studies. In one school, the projects had been clearly aimed at whole-school improvement and prompted by an earlier Ofsted visit. In another, the research was conducted in a cluster of five primary schools and there was some attempt at sharing research aims. In one of the secondary schools, the engagement was based on a theme shared with a neighbouring school on Key Stage 4 Mathematics achievement. Lastly, at the school for which "*action research has become a defining characteristic*" (2007, p. 9), research had started when some of the staff had been awarded Best Practice Research Scholarships. Later, gaining Leading Edge status, the school had decided to free up ten teachers a year from teaching for half a day per week to conduct research, the equivalent of one teacher's salary. Interestingly, in this last case, the focus of the research appeared to be set more by the individual teachers themselves.

The strength of much of the research into the research-engaged schools project, i.e. that it was geared towards practitioners and towards promoting school improvement is also its weakness; a lack of focus on academic standards of publication (i.e. enabling the research to be open to scrutiny of fellow researchers) means its empirical basis is still largely unsubstantiated. It could be claimed that this research suffers the deficiencies that occur in school improvement research in which "*The three groups (LEA professionals, university staff and school senior managers) might be seen as celebrating each other's importance and status, if evaluation of the gain educational 'consumers', children or their parents, obtain from their activities is not addressed*" (Reynolds and Stoll, 1996, p. 107). On the

other hand, the fact that research-engaged schools themselves have an outward-looking orientation and a commitment to accessing and using external research as well as supporting teacher enquiry, suggests a merging of the traditions of school effectiveness research might be possible. The former has an emphasis on pupil outcomes, quantitative data and the school organisation as the unit of study, and the latter its emphasis on practitioner knowledge, process, qualitative data and groups of teachers as the focus of study (Reynolds and Stoll, 1996, p. 101).

To help a school to engage with research, a number of factors were identified in the NFER report, such as: "a school culture that values openness, reflection and professional debate" and "*a commitment to using evidence for school improvement*" (Sanders *et al.*, 2006, p. 7). Such notions point to links with literature surrounding ideas of school improvement (e.g. Mitchell and Sackney, 2000), school effectiveness (e.g. Sammons, 1995) and also learning organisations and organisational learning (e.g. Argyris and Schön, 1978; Johnston and Caldwell, 2001; MacGilchrist, Myers and Reed, 2004; Senge, 1990; Senge, 1997; Senge, Kleiner and Roberts, 1994; Senge *et al.*, 2000). However, the analyses of the learning occurring in each school setting (or across settings) in the NFER case studies fail to specifically address such fields in their analytical framework. This results in a lack of theoretical linkage between the patterns, and nature, of research activity and the type of learning or changes occurring in the institutions and/or within and between individuals. Furthermore, the failure to address the programme theory behind each approach (e.g. Rogers, 2008) means that these studies of research-engaged schools are not open to the type of scrutiny that allows for an evaluation of their proposed mechanisms.

The Best Practice Research Scholarships (BPRS) were set up by the DfES in 2000 and lasted until 2003. The scholar programme was very much in the tradition of Stenhouse, in that it was about creating the conditions for research to take place in the context of practice (Stenhouse, 1981). The small scale projects were also a very good example of how teachers were able to systematise their reflective practice (Schön, 1983). Each year up to £3000 was awarded to around 1000 scholars. While they focused on teachers' professional development, one of their aims was to "*engage and encourage the sharing of effective practice and professional knowledge within the teacher's school and wider educational*

community" (Furlong and Salisbury, 2005, p. 46). These were set up, supposedly within a policy direction that urged for a 'new professionalism', where schools were to become learning organisations, taking control of improvements and reforms in the system; a point the authors of the evaluation of the BPRS scheme dispute (Furlong and Salisbury, 2005, p. 46). The evaluation of the scheme reveals the difficulty of assessing the impact of a broad range of largely 'action research' projects whose iterative patterns of enquiry made their precise aims difficult to state in advance (Furlong and Salisbury, 2005, p. 48). The report shows a wide range of methods used, to varying degrees of rigour and concludes that, while all had links to school development plans or national priorities, it was not always clear that they could or should be classified as 'research' at all. For example, only 22 out of 100 reports looked at by the evaluators, incorporated a systematic review of the literature (Furlong and Salisbury, 2005, p. 57). Where projects included a wider spread of the school staff, rather than being lone-teacher efforts, they were also judged to increase the opportunities "*to change practice and embed a culture of research within the school more generally*" (Furlong and Salisbury, 2005, p. 79).

One conclusion of the evaluation was that, since most of the projects were linked to improvement of practice rather than adding to the research knowledge-base, quality and impact judgements needed to take this into account (Furlong and Salisbury, 2005, p. 57). One solution to this issue was to appeal to the framework of 'Mode 2 knowledge production' (Gibbons, Limoges and Nowotny, 1997). Furlong and Salisbury describe this kind of knowledge as, "*more likely to be context specific; it is after all developed in the context of application. As such it is by definition more transitory and more frequently located within individuals themselves and their particular working context rather than in scientific journal; it is, at least in part, 'embedded' knowledge. As such, the criteria for judging its quality must be different from more conventional forms of knowledge production. Those criteria must include judgements about its impact on practice and on practitioners themselves*" (Furlong and Salisbury, 2005, p. 58). One consequence of the application of this framework is the recognition that dissemination of good practice was "*to a significant degree implicit in teachers' own practices*" (Furlong and Salisbury, 2005, p. 80).

In line with other efforts to increase school and teacher research engagement, the BPRS evaluation also stated very clearly the need for a substantial commitment of support for the projects. This included a commitment of time by the scholar, supported by the school as well as the scheme, substantial funding being made available and the need for mentoring and training in research for teachers. Where scholars were relatively junior members of staff, 'sponsorship' by the Headteacher or another senior leader, determined to a great extent the success of the project (Furlong and Salisbury, 2005, p. 77).

The TTA School Based Research Consortia Initiative was funded between 1997 and 2000. Its goals were:

- *"encouraging teachers to engage with research and evidence about pupils' achievements; for example, to use other people's research to inform their practice and/or to participate actively in classroom research;*
- *increasing the capacity for high quality, teacher-focused classroom research by supporting teacher involvement in the development of research proposals for external funding;*
- *developing long term, medium scale data sets, which provide related quantitative data about what teachers and pupils do and how that affects pupil achievements*" (Kushner *et al.*, 2001, p. 3)

These aims were consistent with the research-engaged schools movement in that they called for teacher research and a school-wide responsiveness to the findings of published research, not to mention the contribution of school-based research to the wider educational community. The programme involved four universities, 29 schools (16 primary and 13 secondary), seven local authorities and had core funding of £105,000, over three years, per consortium (there were four) matched by participants (Kushner *et al.*, 2001). The evaluation was a multi-site case study and aimed to "*inform further development of programmes intended to promote research and evidence-based practice as a means of improving teaching and raising standards of achievement*"(Kushner *et al.*, 2001, p. 4). The evaluation looked at pupil attainment data such as SAT scores and GCSE results (percentage gaining A-C grades) as well as perceptions by teachers and Headteachers on the impact of the programme on pupils. The authors acknowledge limitations in the methodology in making claims about the interventions, such as the lack of control groups and contextual factors varying between schools as well as the inability to isolate the impact of other initiatives in

which the schools were involved (Kushner *et al.*, 2001, pp. 41-42). The attainment data was too inconsistent to identify any clear trends while teachers' comments drew attention to the difficulty in noticing any impact that was a result of their research activity (Kushner *et al.*, 2001). The TTA programme was characterised by multiple innovations, which made control groups and random assignment impossible. However, a number of convincing first-hand accounts was presented by Headteachers regarding clear changes in pedagogy resulting in superior teaching and learning experiences which had impact on particular groups of children (Kushner *et al.*, 2001). Teachers were, however, largely very positive about the impact of participating in research in that it allowed them "*to re-engage their professional judgement in ways often not allowed for or encouraged under the conventional routine of teaching*" (Kushner *et al.*, 2001, p. 45).

This last remark about the TTA school-based research-consortia experiment raised doubts as to its longer-term impact beyond the scope of the funding; the authors stating:

> "*it is not clear whether gains seen in this Programme in terms of changing research relationships inside the university itself were sustainable other than in the context of a funded project*", and that *"it (the programme) has shown how engaging 'in' and 'with' research can be located in schools – but under temporary circumstances*" (Kushner *et al.*, 2001, p. 51).

The TTA consortia also challenged the idea of the university as the natural (and only) home of educational research and by extension, focused attention on traditional measures of research activity and output. The tricky issue of establishing the locus of research knowledge is echoed in the evaluation of the Best Practice Research Scholarships, in which Furlong and Salisbury (2005) note the difficulty of disentangling 'research' from 'development'. They refer to Mode 2 knowledge (Gibbons, Limoges and Nowotny, 1997) as a key to understanding what teachers were learning and producing as a result of these one-year scholarships (Furlong and Salisbury, 2005). The challenge of evaluating 'impact' of teacher research is also captured by Raphael Wilkins' (2011b, p.33) assertion that "*'research' cannot be disassociated from the researcher*" and that the impact of practitioner research might be better conceived of as "*the impact of practitioner researchers*". Indeed, the legacy of initiatives such as the TTA research consortia

exists in the professional learning of teachers who continue (hopefully) to reap benefits on future learners who come into their classes.

In 2002, the NCSL established its Research Associates Programme (RAP) for school leaders. While focused on individuals, the RAP was clearly aimed at promoting a type of practitioner enquiry that would lead to change, often within the participant's own school (Coleman, 2007). Frequently adopting an 'action research' methodology, these projects would "*combine a strong and rigorous research activity with a respect for participants' knowledge and understanding*" (Coleman, 2007, p. 485). This focus on change and improvement through research was to occur via three mechanisms: the gathering of craft and practitioner knowledge; dissemination of good and interesting practice and promotion of engagement with research across schools and between leaders (Coleman, 2007, p. 486). Interviews with 18 Associates in cohorts one and two found several benefits from the research, including those for the individual, such as professional and pedagogical learning, development of research skills and the empowering nature of pursuing their own research agenda. There were also benefits to schools, such as the identification of new posts or other resource needs or the introduction of a number of smaller school improvement projects. Despite the limitations of scale and time that sometimes made rigorous research methodology difficult, the RAP led to other, apparently sustainable changes within the Associates' schools. For example, the Headteacher became a 'lead learner', modelling the process of learning through research engagement. Secondly, the need to deputise day-to-day responsibilities during the programme had the welcome advantage of developing another individual's career as well as encouraging a shift to distributed leadership (Coleman, 2007, p. 490). Some of the issues relating to 'scalability' were also addressed by having Associates take part in a larger study. The involvement of practitioners in these larger NCSL projects meant that learning was a two-way, iterative process that helped improve the quality of the research and led to more effective work by the NCSL itself (Coleman, 2007, p. 492). The evaluation of the RAP also suggested the need for external support for such R&D, including: guidance on research methods and ethics, supervision and tutelage, encouraging collaboration and help in disseminating findings through publication and other events (Coleman, 2007, pp. 493-494). Despite the obvious challenges of busy school leaders engaging in

research, the cultural changes that these school leaders were able to take back to their schools (and future schools or partnerships) offered promise. The report suggests the need for a clear infrastructure to support this type of research engagement.

The NSCL also established the funded the Networked Learning Communities (NLC) programme in order to lead improvement in schools through school-to-school partnerships. This three-year, funded programme (2002-2005) was designed as a learning exercise, although some schools may have used the initiative to continue such activities beyond the terms of the funding (Katz and Earl, 2010). Evaluation of the NLC programme looked at a wide range of learning gained from the three years' experience, and put together a theory of action that could explain how networks could work together to improve the learning of their pupils. Key aspects of this were that collaboration and enquiry, through 'joint work' were important aspects of challenging practice that could lead to gains in pupils' achievements (Earl *et al.*, 2006, pp. 26-28).

Despite the time-bound funding limitations of the TTA school-based research-consortia, NLC and the BPRS, these schemes have contributed to changes that outlasted their funding remits. Thus, while the schools, LEAs and universities now needed to find money from elsewhere to pursue research activities, many of the participants in these initiatives are likely to have been informed by participation in such collaborations at both school and individual teacher level. One report of the impact of such schemes estimates that, conservatively around 39,500 teacher enquiry projects would have been externally funded in the 13 years prior to 2009 (Cordingley, 2009). The NLC programme also provided funding to help sustain the Cambridge SUPER network once the initial Wallenberg Foundation funding period had expired (McLaughlin, 2006).

The work of academics and practitioners in the SUPER network of schools at Cambridge has led to important learning, particularly given the long term and ongoing nature of this collaboration. Seen as a case study and research project in of itself, SUPER had its aim to, "*research the conditions necessary for effective research to take place within individual schools, across individual schools and between schools and the university*" (McLaughlin and Baumfield, 2006, p. 133). One interesting aspect was the shift in "Phase 3" of SUPER, away from idea of a

partnership to meet the needs of university as well as schools, to one that was 'asymmetrical' and became about helping schools to become 'researching schools', following their own agendas (Black-Hawkins and McIntyre, 2006b, p. 154). The experiences of those working with schools in the partnership has, in this respect, echoes of Stenhouse's thoughts about where the balance of power should lie between the academy and school practice, the former needing to show its usefulness to the latter, in his view. The exact meaning of being a researching school however, differed between cases: for some it was a form of professional development for individual teachers; others saw it as being knowledge creation for practice and policy (McLaughlin and Taber, 2006). The SUPER case studies saw a "*movement from individual teachers researching their practice to a more orchestrated enterprise connected to departmental or school agendas*" (McLaughlin and Taber, 2006, p. 166).

Research from those involved in coordinating the work of the SUPER network also suggested the idea of gradual development towards a 'research culture'. Ebbutt (2002) posits three levels of development in the depth and breadth of a school's engagement in research, these being 'emergent', 'established' and 'established-embedded'. He starts with the fairly arbitrary period of 10 years of engagement with research as providing the distinction between two of four case study schools with an 'established' as compared to the other two with an 'emergent' research culture. He then further refined his categories, via a survey of staff and interviews with each school's research coordinator, to include a third category. One of the defining aspects of this additional 'established-embedded' research culture over-and-above that of a school with an 'established' culture of research, is that it has systems to encourage and sustain a culture of research engagement. Other recent research has focused on the key role that school leaders (or champions) make in maintaining a research-engaged approach (e.g.Sharp *et al.*, 2006a; Wilkins, 2000). However, commenting on one school in his sample, Ebbutt (2002, p. 134) says that (the culture of research) "*is so embedded that it (in the author's opinion) would survive the departure of the Head*". Such a judgement is of course, no more than that, and the separation of the role of a top-down internal (formal) leadership stimulus from bottom-up teacher-driven change (teacher leadership) is very difficult, since the former may require the latter to exist in the first instance.

Ebbutt's (2002) case studies provide a useful heuristic for identifying levels of research cultures in a secondary school context. Importantly, compared to many other case studies in this area, he *attempted* (the percentage completed is unknown) a survey of all teaching staff to properly gauge views on the school's 'culture', rather than relying on testimonies from senior managers or research coordinators. However, his study lacks a comprehensive definition of what he means by 'research culture' and whether he includes engaging *with* (using, accessing published research) as well as engaging *in* (carrying out) school-based research. Nevertheless, this 'embedded' notion of research engagement was also implicit in the NFER's application for research-engaged schools; assessment question 5.4 asks, "*How sustainable is your organisation's research engagement in the next three years? Further elaborating on meeting this criterion, the applying school can, for example show how "research activity is embedded into school systems*" (NFER, 2010). Ebbutt's (2002) research raised questions about cultural change and the time needed to do this. His suggestion that 10 years was the length of time that the more 'advanced' researching cultures took to develop could sound depressingly slow to those anxious to professionalise education through research engagement. Questions of culture and learning also beg the need for a theoretical basis for both.

Most of the research findings in this field come from case studies and often from people strongly invested in the outcome being positive, such as school leaders, coordinators of research or university faculty members who work with school research networks. Initiatives often have a wide range of strategies, interpretations and aims. It has been easier to see short-term gains for teachers in terms of their perceived professional learning than medium-term changes to practice or eventual changes to pupil learning. A clear statement of the 'theory of action' to be tested and evaluated at various stages has been absent from the empirical research. This means that the stages that lead to particular outcomes for school leaders, teachers and ultimately stated pupil outcomes are not clearly articulated. The impact of research engagement on pupil attainment may not be possible to isolate given the numerous overlapping initiatives in schools. Also, research by teachers often focuses on qualitative processes of learning, such as increasing pupils' confidence, ability to articulate ideas or working in groups.

Leadership in research-informed schools

Leadership of research-informed practices in schools appears to be a function of both formal leadership positions and informal ways of influencing the practices of others. For instance, EEF-funded research is evaluating the effect of using opinion formers in schools, identified in social network analysis (e.g. Daly, 2010), supported by senior leaders [13]. Participant schools in Research Learning Communities are facilitated by a university researcher to read a summary of some externally generated research; to match this with their own school context, to combine this knowledge in order to generate a strategy; to trial this strategy and then to work out evidence-based strategies on leadership and KM to spread this innovation through the school more widely. This dual approach to leading evidence-informed school improvement combines the advantages of formal leadership support with a socially-mediated informal leadership of KM across the school and in networks of schools (Brown, 2015). Such an approach to research use recognises the role of teachers' existing tacit and other formal or technical knowledge about their school and their pupils.

One of the most important roles for formal leaders is that of the 'lead learner' in the school. Research by Robinson (2009) has shown that promoting and modelling professional learning by school leaders has the biggest effect size on pupil outcomes. As has been commented elsewhere, the corresponding, "*emphasis on enquiry-oriented learning*" (Cordingley, 2015, p. 246) is key in connecting leadership to the largest gains for learners. In research-engaged schools this can include school leaders: challenging others to use evidence to support their thinking, explicitly valuing research findings, giving staff time to discuss and reflect on practice and making a commitment to act on research (Sharp *et al.*, 2006a).

Previous examples show that research-informed practice in schools needs to be continually reinforced and takes time to develop. We have seen from the Laboratory School movement in the USA that, while these have taken their

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[13] https://educationendowmentfoundation.org.uk/projects/research-learning-communities/

teacher training role seriously, most have seen the responsibility to be at the forefront of experimental innovation and research as secondary. Early indications in PDSs' research and inquiry activity have still not developed as hoped yet may follow a similar path. Developing research-rich school cultures takes time and some schools mature in their approaches to research over a number of years (Ebbutt, 2002). Sufficient resources are needed to make this happen and to sustain it too. These factors depend on local conditions, including the 'growth state' of the school (Hopkins, Harris and Jackson, 1997). Thus, there is no single 'blueprint' for a researching school (McLaughlin and Taber, 2006, p. 179). The history of research-informed schools in the USA and England also shows that growth and development of such cultures cannot be seen as inevitable due to wider systemic issues. Thus, unless the nature of such schools (i.e. where they fit into wider educational goals) is made explicit, there is a danger that their trajectory may also be reversed, changed or eliminated entirely. Thus, other priorities can take over, or such schools instead show tactical or instrumental uses of evidence that disempowers teachers, school leaders, and their pupils.

The lessons for research in this area

A number of important lessons emerge from this period in England and from the research that has gone into it. The teacher-researcher and CARN movements suggest that we need a wide-embracing notion of research that empowers teachers to enquire into their own practice and to transform it. If the term research is confined to what academics do, this may create unhelpful divisions between school practitioners and academics that inhibits such transformations.

However, what teachers are doing in the name of research may be difficult to discern from other types of activity. Therefore, it should be interesting to explore how the term 'research' is defined by teachers themselves in the context of research-engaged schools. Mode 2 knowledge production suggests that knowledge is created in the context of practice and in the heads of practitioners. Therefore the ways these practitioners define research, the purpose of research and motivations behind it, should help us to understand more about its initiation, spread and impact.

The publications from the research-engaged school projects helped to more clearly set out what such school consisted of, i.e: engagement in (conducting) and engagement with (using) research; how such schools were professional learning communities; and how they were outward-looking and connected. They also stated the leadership dimension of this in general terms and the need for structures to support such activity and to sustain it. The NFER award for research-engaged schools set out to elaborate this further into various sections. However, this was still largely self-reported by school leaders and did not address the perceptions of teachers or middle leaders as to how much such a culture or structures existed. At the moment, it is left to headteachers to state that their schools are/are not particularly 'research-engaged'. This means that such statements lack the triangulation needed to authenticate such statements and that also it is at the moment virtually impossible to identify, a priori, RESs. Indeed, without sufficient baseline evidence or an appropriate auditing tool, the Headteacher may not be confident to say how 'research-engaged' their own school is.

Research such as that conducted by Ebbutt, begins to elaborate which factors served as barriers and enablers of researching cultures and thus whether there was potential for sustainability or growth. However, in order to identify patterns and intensity of research engagement, a clearly articulated definition of a research-engaged school, from which research instruments can be constructed, trialled and tested, is still needed. This will allow a better 'calibration' of how much one school has developed a researching culture compared to another one.

The research-engaged school is clearly conceptualised as an organisational learning mechanism. In other words, the RES is more than a school in which many staff conduct or read research; it is also an organisation that 'learns' from this activity. However, it remains the case that a clear theoretical basis for the school as a learning organisation is thus far missing. Making more explicit use of theory will allow for the theory of action in a research-engaged school to be better understood and provide clearer indications of how teachers and school leaders should engage with research for school improvement. It also creates conditions for an ongoing field of research about which theoretical stances provide the most explanatory power. These issues are explored more below.

Chapter 2b - Conceptual issues surrounding research, evidence, knowledge, organisations and learning

In this chapter I seek to apply the lessons of the past to outline the elements of a researched-engaged school. These elements include: what it means to be research-informed and how we can know if a school is research-engaged; how research can lead to change; what it means for an organisation to learn and what we mean by 'learning' in this context. Connected to these points is the issue about knowledge and power; for whom are we researching and for what purpose?

It has been argued that the work of Stenhouse showed much foresight relevant to today's school system and that his premature death in the 1980s meant that these foundational ideas were never brought to completion (Dimmock, 2014). I agree and would take this back further to propose that the theoretical and practical work of Dewey in establishing laboratory schools also resonates strongly today and is very much in harmony with Stenhouse's views about teachers and research.

The central idea of the research-engaged school

The term research-engaged school is essentially a concept that connects several issues together with respect to practitioners' professional practice (and the integration of research knowledge), in particular the school as a 'learning' or knowledge-creating organisation and the mobilisation or 'diffusion' of knowledge.

Thus, it can be viewed as a unifying concept, bringing together a solution to three connected problems pressing the school system in England and elsewhere:

1. How to bridge the research–policy–practice gap by mobilising knowledge more effectively through knowledge producers and consumers working collaboratively
2. Valuing and integrating both tacit knowledge and academic coded (explicit) knowledge
3. Raising the professionalism and reflectivity of teachers and leaders (adapted from Dimmock, 2014, p. 1)

In order to achieve these objectives, Dimmock (2014, p. 3) argues that the concept of research-engaged schools provides a way to leverage the mobilisation of knowledge across the school system. Concretely, this would entail: facilitating research-engaged teachers and leaders; creating schools and networks as research-engaged PLCs and using a methodology that enables research to underpin practice, but is tailored to context. I propose an alternative to Dimmock's model consisting of three overlapping dimensions at the meso-level of the ecosystem of research-informed practice (see **Table 1** below). Both have much in common with each other and can be mapped onto the defining features of research-engaged schools.

Table 1 Summary of key characteristics of research-engaged schools and research-informed practice

Features of research-engaged schools (Handscomb and MacBeath, 2003b; Sharp *et al.*, 2005; Wilkins, 2011b)	**Human and organisational infrastructure for research-engaged schools** (Dimmock, 2014)	**Meso-system dimensions of research-informed practice**
1) Promotes practitioner research among its staff	Research-engaged teachers and leaders	Research-informed professional practice
2) Encourages its staff to access, read, use and engage critically with published research		
3) Uses research to inform its decision-making at every level	Use of design-research-development	The school as a learning organisation
4) Welcomes being the subject of research by outside organisations	Schools and networks as PLCs	Connectivity to the wider system
5) Has "an outward looking orientation" (Wilkins, 2011b)		

In general, I prefer research-informed practice over research-engaged teachers and leaders as this also includes other professionals that work in schools and that have a direct effect on learners, such as teaching assistants (TAs) and SEN support staff. This also leaves open the possibility for other professionals working at school level to engage in the professional community, such as embedded researchers (McGinity and Salokangas, 2012; McGinity and Salokangas, 2014). I have excluded 'non-professionals' such as parents and pupils although these

groups can potentially play an important part in the process of enquiry and school transformation (Rubin and Jones, 2007). In an earlier iteration of this model I had a separate dimension for leadership (Godfrey, 2014); however, I have modified this in line with Dimmock's model. This is not to deny that formal leadership plays an important role in establishing, maintaining and building research engagement in schools; undoubtedly it does (e.g. Sharp *et al.*, 2006b). However, a broader view of leadership takes into account a more distributed model, including teacher leadership (Frost, 2000).

For the second dimension, Dimmock (2014) suggests the use of a research-design-development methodology (Bryk and Gomez, 2008) as a way of diffusing innovations across schools. While I agree that a methodology for getting ideas into practice might be useful, tailored to context, this methodology appeals explicitly to an engineering model of the organisation; one that may be too static and technicist an approach to school improvement. Furthermore, while in the previous chapter I argued that 'knowledge mobilisation' (KM) processes in research-engaged schools need to be both subject to more research and underpinned by a sound epistemological and methodological stance, it seems premature to opt for such a research and development model to the exclusion of others.

Finally, the dimension of connectivity is broader in my proposed model, taking into account both horizontal and vertical levels of connection within an ecosystem. In this respect, while the term might lend itself to a focus on practices within the four walls of a single school, it is better to think about how schools work systemically (Godfrey, 2014). This brings up a conflict between the usefulness of the word 'institution' to describe schools versus the use of the word 'organisation'. The former stresses the historical, social and political functions of schools and their values to society, while the latter term has connotations of managerialism and performativity that are in conflict with the more empowering notion of a research-engaged school (Cain and Harris, 2013; Glatter, 2015). However, this also presents a dilemma for analysis in that the term organisation, stemming etymologically from 'organism' may stress dynamism, change and learning. Thus, as a concept, elements of both are required. In terms of analysis, my solution is to look at the work of teachers and school leaders in the case study schools as

examples of 'activity systems', which are both dynamic as well as containing strong references to the idea of historically and socially situated practices (Blackler, 2009). The practices of schools are most accurately described as 'schooling' to denote their separation from what happens in higher education or other institutions, although in practice the word 'education' may be used where the context makes it clear what we are referring to. Seen as an activity system, educational/schooling practices can also be seen as *teleological*, i.e. learning does not just take place for a purpose, but education is defined by having a purpose (Biesta, 2009). In CHAT (Activity Theory) this is denoted by the concept of the 'object' of the activity system (Engeström, 1996).

Bridging the research to practice nexus

The research-practice divide is often characterised as a problem of KM that, "*refers to multiple ways in which stronger connections can be made between research, policy and practice*" (Levin, 2011, p. 15). KM has been said to be a much under-resourced and -emphasised aspect of the system; the research-base remaining weak in education overall, given the size of the sector, and universities often poor at sharing the implications of findings from their research with practitioners (Levin, 2011). Some authors look at the issue of KM as being about how to encourage teachers to use 'formal' research knowledge (e.g. Levin, 2011). While not always explicitly stated in definitions, this is often taken to mean large-scale, often quantitative evidence and especially systematic syntheses. For example, in one paper, Levin (2011) mentions research by Marzano and Hattie (2011, p. 16), both of whom publish extensively on the findings of meta-analyses from international evidence.

The problem with many KM models is the tendency to view the challenge as being of how to 'implement' the research evidence, which implies a view of professionalism which is largely technical-rational (Schön, 1983). When authors talk of implementation it can imply a fairly straightforward process or a linear chain between cause and effect. This view of professionalism sees teachers as 'executive technicians' and tends to favour research evidence that has supposedly the highest degrees of 'certainty' (Winch, Oancea and Orchard, 2013).

I would agree with Biesta (2010c, p.496), who points to the epistemological issue of 'efficacy-deficit' from formal research:

> "*It (research) can make, in Dewey's words, our action and problem solving more intelligent. But what evidence generated through experimentation cannot do on this account, is provide us with rules for action and even less with dictates for action.*"

This is because research evidence will always need to be interpreted by the individual (Biesta, 2010c, p. 497). In addition, the knowledge generated by the research community differs to the type of knowledge required in teachers' pedagogical practice. In the former this knowledge tends to be: propositional and theoretical; generalised, abstract and impersonal; narrowly-focused on single issues; based on a slow process of accretion and scepticism; valued for its originality and rigour. In the latter, the knowledge is: procedural and practical; context specific and values-based; broad in focus; informed by intuition and valued for its fitness for purpose (Cain, 2015, p. 494). The consequence of this efficacy deficit is that research can never lead to straightforward protocols for practice, as there will always need to be a process of interpretation that is cognitive and/or social in nature. However, as has been pointed out elsewhere, this should not mean a leap to the other extreme that teaching practice can and should only ever be seen as a 'craft' (Winch, Oancea and Orchard, 2013). This would imply only forms of knowledge such as 'common-sense' or 'intuition' were valid. Both of these are problematic terms in their own right, as common-sense or intuition may have been informed by a reading of research (however thoroughly or superficially) in the past. Rather, there needs to be a professional notion in teaching practice that is to do with the integration of research-based evidence with other forms of evidence and knowledge. Such a view involves:

> "*practical understanding and know-how; a good conceptual understanding of education and teaching; and the ability to understand, interpret and form critical judgements on empirical research and its relevance to their particular situation*" (Winch, Oancea and Orchard, 2013, p. 211).

The experience of Professional Development schools in the USA (see Chapter 2a) points to a number of structural and cultural divides that exist between the worlds of the school practitioner and that of researchers working in academia. In order to harmonise these two worlds, both sides need to adapt and change systems of pay, incentives, timelines for projects and co-construction in the

planning and conduct of research (Darling-Hammond, 1994). These have clearly been difficult and in many cases intransigent issues and are embedded in socio-historical distinctions between the practices of researchers and teachers. In the context of Further Education in England, Anderson *et al* (2003) looked at eight models to increase research capacity in colleges. Adapting these for schools, these were:

1. For some staff to engage in higher degrees
2. The appointment of specialised researchers
3. The use of data by school leaders
4. Incorporating research into staff development programmes
5. The use of an outside 'model' of research controlled by an external agency
6. Schools to bid for research themselves
7. To develop partnerships with Higher Education institutions
8. To set up consortia that plan their own research and bid for funding

The authors conclude that, while the first six had a place in increasing research engagement, they failed to address the capacity issues fully because they either: involved only a minority of staff, could potentially feed a performativity model that already inhibited developments in further education institutions, or disempowered practitioners from following their own research agenda. The eighth model is one that is parallel to developments in England with TSAs, who have the capacity to bid for research funding in consortia arrangements. In order for the seventh model to flourish, Anderson *et al* (2003) suggest the need for: a climate of trust, sharing knowledge, pooling resources, sharing voices in decision-making, distributing leadership and sharing responsibility for outcomes. The example of the SUPER partnership in Cambridge suggests that for cultural practices to change takes many years and is by no means guaranteed (Black-Hawkins and McIntyre, 2006b; Ebbutt, 2002; Ebbutt, Robson and Worrall, 2000; McLaughlin and Baumfield, 2006b; McLaughlin and Black-Hawkins, 2004).

School-university partnerships need to take into account the cultural and historical tensions and institutional variations between academia and the school place. For this reason, the socio-cultural frames of Cultural-Historical Activity Theory (CHAT) and Activity Theory have been adopted for this research (see below and in chapter 3).

Knowledge and power: Evidence-based versus research-informed professional practice

In more recent years, there has seen a resurgence of the idea that an 'evidence-base' should inform education. However, this comes at the risk of stressing the primacy of particular kinds of 'evidence'. These judgements about what constitutes high quality evidence can be seen through the influential Education Endowment Foundation, whose website states:

> *"Our focus is on supporting projects that show promising evidence of having a measurable impact on attainment or a directly related outcome. We are interested in testing projects' effectiveness through robust independent evaluations, where appropriate as randomised controlled trials. If they are shown to have an impact, they should be able to be replicated and scaled up to improve outcomes for other disadvantaged pupils."*[14]

The practitioner is ultimately seen as a 'user' of knowledge in this relationship, particularly when research evidence is derived from the conduct of randomised controlled trials (RCTs). The practitioners – teachers, school leaders and support staff – are in danger of being viewed as resistant to change if they ignore those that promote the importance of such methods in improving practice (e.g. Goldacre, 2013). The issue here is about knowledge, power and control; if there is one kind of knowledge that is 'superior' to others, such as RCTs, these can be used to justify control over what practitioners should do. Such a realist, positivist position, that suggests an objective reality that can be captured by the 'right' scientific methods (Brown, 2013), takes control away from practitioners and is more easily translated into dictates by governments who espouse 'evidence-based' policies.

Attempts to sponsor large-scale production of educational research to inform the work of teachers and school leaders have shown the complexity of bridging the practice-research divide. Many of these ideas about getting research into practice (GRIP) in education have followed a science diffusion model. Diffusion can be seen as "*the process by which an innovation is communicated to and adopted (or rejected) by members of a social system*" (Nutley and Davies, 2000). The Teaching and Learning Research Programme (TLRP) attempted to establish a large evidence-base but much of this knowledge is unknown to teachers only a

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[14] http://educationendowmentfoundation.org.uk/apply-for-funding/

few years later (e.g. Greany, 2015). Even when organisations summarise outputs for practitioners in more usable formats; this 'push' of research can only go so far; there also needs to be clear demand and motivation by practitioners to use research in practice – i.e. 'pull' (Levin, 2013; Nelson and O' Beirne, 2014). Equally, the static nature of a large top-down funded knowledge-base can be seen to be problematic in a world where knowledge is being constantly updated and constitutes part of an inter-connected system, particularly facilitated by the growth of the internet (Siemens, 2014).

The term 'evidence-based practice' can thus be used to imply an uncritical engagement with supposedly incontrovertible research evidence, based on a prescriptive 'what works' model (e.g. Biesta, 2007). Such a model ignores the complex, non-linear and nuanced relationship that exists between educational practices and research evidence (Borg, 2010) and promotes a narrow, un-empowering, technical-rationalist view of teacher professionalism (Schön, 1983).

Even if practitioners largely agree to implement a given 'evidence-based' approach to their practice, this may require numerous iterations and many hours of practice to master the skills required (Dreyfus, 2004). The process by which the innovation is then implemented will involve high degrees of psychological and affective adjustment by individuals; behavioural changes and close evaluation of the degree to which changes have been adopted with fidelity. This has been described as the 'implementation bridge' (Hall, 2013). These are multiple-level concerns that require attention to cultural, professional and leadership elements of organisations and often take years to achieve.

Biesta (2007) argues that adopting a 'what works' idea of change, elides the important principle that education is not simply an outcome; it is also a process. Contrasting education with medicine, he adds, "*being a student is not an illness, just as teaching is not a cure*" (ibid, p. 8). Others have pointed out the dangers of eschewing the moral purpose of education and overstating the promise of 'evidence' in determining the direction of educational practice (Biesta, 2006; Hammersley, 2005; Simons, 2003). I would argue that before KM, comes an important first step, i.e. defining the problem itself. "Evidence" can be used to provide warrant for almost any idea; before this happens, parents, the government, children and importantly teachers, need to decide what kind of

education is desirable. In other words, a re-affirmation of 'value-based' education (Biesta, 2010c).

A further problem with research evidence in relation to much of educational practice is that interventions work in a probabilistic manner in open systems, rather than leading to linear causality (Prigogine, 1984). Therefore, in a research-engaged school, the 'evidence base', should be viewed "*not as a body of finite knowledge to be prescribed and imposed on teachers, but rather as a living process built around practical experience in classrooms, developed from and adapting to particular teaching and learning settings*" (Saunders, 2004, p. 164). For some, the acknowledgement that practitioners often gain useful knowledge through experience rather than research has led to the more widespread acceptance of the term 'evidence-informed practice' (e.g. Sharples, 2013). However, referring exclusively to 'evidence' also risks overlooking the important role that educational theories or philosophies can play for practitioners (Atkinson, 2000, pp. 323-4). A more apposite term to use than 'evidence-based (or -informed) practice' is, in my view, 'research-informed practice'. Dewey's Laboratory school showed the advantages of having a clear theoretical underpinning to teacher's work and curriculum development. Theory of teaching and learning can come from particular intellectual fields (e.g. philosophy, sociology, psychology) or this can be subject-based, for example the pedagogy of mathematics. Theory also underpins the knowledge claims (epistemology) of research carried out in schools. The notion of teachers as mere 'executive technicians' who implement empirical research is not supported by years of experience in the USA with laboratory and PDSs, nor in initiatives in England such as the BPRS or TTA research consortia.

Table 3 Evidence-based versus research-informed practice

Evidence-based	Research-informed
Technical-rational view of teaching ('what works' model of education)	Teaching as an art (or craft) as well as a science
Research discovers one truth ('Scientists say')	Research findings are open to multiple interpretations – not one 'voice'
Reliance on large-scale, generalizable, quantitative evidence and systematic reviews	Published academic research seen as a useful starting point (hypothesis to be tested)
Neglect of theory and philosophy	Theory and philosophy included
Focus entirely on outcomes (especially pupil attainment)	Education is a process as well as an outcome

Thus, an analysis of research-engaged schools needs to include how teachers actively interpret research and combine this with their judgements about practice alongside other knowledge. 'Research' needs to be taken in its broadest sense, and include use of theory and attention to the processes and values of education too.

How can research lead to change and improvement?

Few would contest that one of the most important routes to educational improvement is through the development of excellent teachers. I agree with that but disagree that the route for such improvement is via some kind of instrumental use of educational research.

If pedagogy is the science of the art of teaching, then teachers need to use professional judgement based on a combination of tacit and explicit knowledge (Polanyi, 1983). Thus, judgement, intuition and instinct gained through experience *as well as* research-based data should all be called upon to inform practice.

A further question when considering the role of research in terms of its potential to improve teaching practice, is what type of knowledge teachers need to be

highly 'competent'; in this, I have been particularly persuaded by the work of Gert Biesta (Biesta, 2015a). Biesta refers to Aristotle's notion of the 'variable' domain of action, contrasting it to that of 'episteme'. The latter refers to the domain of "*representational knowledge about an unchanging world*" (Biesta, 2015a, p. 8) and is concerned with capturing eternal truths and laws in nature. Such a world does not comply with the realities of teaching or education, which belong to the domain of the practical life, i.e. "*the domain of change and possibility*" (ibid, p. 8). Within the domain of the variable, there are two modes of action,

i)   **'poesis'** which is about creating something that did not exist previously, and this can include skills, which requires 'techne', i.e. knowledge of how to do something (also requiring judgement).

ii)   **'praxis'**, which is to do with the promotion of human flourishing. This requires phronesis, i.e. knowledge of what is to be done, or 'practical wisdom'. (ibid, p. 9)

Given that the development of skills, or 'know how', is framed by questions of 'what needs to be done', Biesta (2015a) suggests that key areas of judgement that teachers need to exercise are to do with becoming educationally wise. The latter, he calls a 'virtue-based approach' and thus sees educational virtuosity as the goal. This would involve the practise of judgements in context, and learning from examples of educational virtuosity (especially more experienced colleagues).

The role of research in terms of 'informing' judgement implies certain corollaries. One of these is the rejection of a positivist, realist ontology for education (e.g. Biesta, 2015c; Brown, 2013; Cain, 2015; Hammersley, 2005). Such a world view is incomplete in that it takes a mechanistic or engineering analogy; a reductionist mode of inputs and outputs that fails to capture the way that human actors interpret and make sense of the world around them. While research can capture relationships between these 'inputs' and 'outputs' this merely captures the actions of agentic participants in the world (e.g. teachers and students) whose actions lead to certain consequences in a given situation and time. This transactional realist mode means that the reality that research 'captures' is temporal (Biesta and Burbules, 2003). While such an 'input' may have the same or similar output in another context, this requires interpretation and can only be tested in the new context as social actors respond in the moment to these actions. Thus, such research-based knowledge is 'fallible' (Hammersley, 2004; Hammersley, 2005).

Research cannot then lead to prescriptions for action in a linear, instrumentalist sense; however, it can have a 'cultural' or 'conceptual' use in educational improvement (Biesta, 2015b; Cain, 2015). In general, this means that educational research has an 'enlightenment' purpose (Weiss, 1998). In practical terms, we are referring to a 'moderate' form of enlightenment (Hammersley, 2002 cited in Cain, 2015, p. 480), which means that research knowledge is 'mixed' with other forms of knowledge, for instance that gained from other colleagues or from one's own experiences. Thus research can be seen to inform teachers practice in one 'long-focused discussion' in which it forms a third voice, the other two being one's own thoughts, values and experiences (first voice) and those of colleagues (second voice) (Cain, 2015). Cain provides examples of how teachers' use of research texts informed their work conceptually, by: providing a focus for thought and action; challenging existing thinking and practice; providing concepts which made phenomena visible and suggesting possibilities for action. Research also influenced teachers' thinking in that it made them: more willing to experiment; more critical about knowledge claims, better able to make sense of a range of evidence and in developing ethical awareness (Cain, 2015, pp. 487-488).

By contrast to the instrumental, mechanistic ontology implied in 'evidence-based practice' (e.g. Goldacre, 2013). I would agree that education must be seen as working within a complex social world. As such, education is an open system, connected with the wider world; *semiotic,* i.e. actions are determined by the meanings that individuals attach to the world; and *recursive*, i.e. elements of the system feed back into each other, continuously evolving it (Biesta, 2015c). Within an open system, research has an interventionist property of being able to reduce complexity. I would argue, as has been done elsewhere (e.g. Saunders, 2004; Saunders, 2006; Saunders, 2015) that teaching is a creative endeavour that can never be usefully determined by a prescriptive knowledge-base generated through external research. Another way to express this issue is to say that attempts to reduce education to a closed, mechanically deterministic system through the use of research, should be resisted once we get to a 'tipping point' (Biesta, 2015b). Such a moment will be a matter of judgement, since the complexity reduction role of research, for instance in providing useful tools to explain phenomena that lead to 'useful' actions, is also a key strength. However, once we start to revert to mechanical reductivist ontology, the effects of

educational 'interventions' become seen as something that 'goes on behind the backs' of teachers (Biesta, 2015b). Once we reach that point, we elide the reflexive, agentic and purposeful nature of those who work within it – especially teachers.

Another 'cultural' use of research can be seen when we look at how the practices and cultures of research 'activity systems' are introduced into the domain of educational (school) practices. Taking an Activity Theoretical perspective (Engeström, 1987; Engeström, 1999) can highlight how the language of research can be seen to shift activity and be used as a mediating tool for a change. As such, practitioner research can be seen as a form of leadership (Frost, 2007a) and by looking at research-informed practices as activity systems, we can focus on the potential for types of agency created in collaborative activity (Biesta and Tedder, 2006; Edwards, 2007; Westley *et al.*, 2013). Referring to the work of MacIntyre (2013) the notion of a 'practice' has been defined as "*a series of ways of being and doing, each with their own goals and standards of excellence*" (Winch, Oancea and Orchard, 2013, p. 207). The latter authors point out that for some (e.g. Carr, 2006), the fact that the world of research is also a practice means that it cannot therefore inform the worlds of teaching or other educational practices. For Activity Theorists, the mixture of tools and rules of different practices actually provides potential for expansive learning in organisations such as schools (Sheard and Sharples, 2015).

Overall, school improvement can be seen to be driven by either 'inside-out' or 'outside-in' processes (Hargreaves, 2009). The former can be seen through the creation of PLCs and the latter through the support or intervention of experts or expert knowledge that supports change (Mincu, 2015). How such processes work requires a clear understanding of the mechanisms of the school as an organisation, and a framework that adopts a social ontology. My solution to this is discussed in the last section of this chapter.

How do we know if research is 'effective'?

The school effectiveness movement mirrors the evidence-based arguments rehearsed above, i.e. they focus on outcomes, largely quantitative ones; and they look at a school in a snapshot of time rather than studying processes and change (Reynolds and Stoll, 1996). One of the problems can be the uncontested nature of the term 'effectiveness'. In order to answer the question about whether schools are effective or whether research has enabled them to achieve this, we need to ask 'effective for what, and for whom?' These are therefore fundamental questions about the purpose of education. In this sense, Biesta (2015b, p.200) makes a useful suggestion that education essentially has three purposes: qualification, socialisation and subjectification. The first has to do with the acquisition of knowledge and skills; the second is about enabling students to become part of a society with its traditions, cultures and practices; the third is an emancipatory or enlightenment function on the person as an individual. Arguably, the current discourse of school effectiveness and evidence-based practice, has led to a greater focus on qualification to the detriment of the other two approaches. The problem is that the purposes of education can lead to tensions and contradictions. For instance, evidence can be used to 'dictate' that teachers in England teach in one particular way, regardless of how it affects attitudes to reading in future life (Cain, 2015, p. 492). Here, there is a tension between qualification and the emancipatory aspects of education. Thus, overall judgements about whether research is 'effective' are likely to be elusive. A 'pragmatic' approach to effectiveness then, needs to look at the consequences of actions taken as a result of research. While research evidence can suggest possible courses for action, these will need to be evaluated on a case by case basis, balancing the broader purposes of education. This is conceptually in line with Stenhouse's idea that published research should be seen by teachers as 'hypotheses to be tested in the classroom' (Stenhouse, 1985).

Schools as sites of professional development

Dewey's laboratory school supported the idea that teacher learning, through experimentation and enquiry, should be inextricably linked to the transformation of practice and thus of pupil's learning. The school needed to provide regular space and opportunities for enquiring and experimenting. This contrasts with the experience faced by many teachers in their own school. One analysis of CPD activities in schools breaks these down into four separate types (Sachs, 2011):

i) **'Re-tooling'** - typically involves a visiting consultant or 'guru' who suggests how teachers should go about their business or improve their skills

ii) **'Re-modelling'** - "*aims to modify existing practices to ensure that teachers are compliant with government change agendas*" (ibid, p. 158)

iii) **'Revitalising'** - where the shift is from 'development' to learning, as a reflective practitioner and often combined with a coach and involving collegiality and collaboration in a community of practice

iv) **'Re-imaging'** - recognises the complexity of teaching and education and is highly political and transformative of practice. In this view of professional learning, teachers would be positioned as "*researchers of their own and their peer's practice*" and contribute to "*an understanding of the value of practice and the improvement and transformation of practice*" (ibid, p. 161)

Sachs (2011) argues that most CPD falls almost entirely into the first two categories, a little into the third and is rarely represented in the fourth. She thus recommends "*a range of learning opportunities appropriate to needs and purposes*" and for these to be "*supported by school cultures of inquiry and be evidence-based, where evidence is collected and interrogated.*" (ibid, p. 163). Some of the case study schools clearly showed evidence of type iii learning but few may be considered examples of the fourth. If the questions that teachers are 'allowed' to ask are set for them, this has the potential for practitioner research being domesticated to a kind of instrumentalism and vehicle for top-down reform (Anderson and Herr, 1999). It is precisely this kind of model of change that the self-improving system is designed to avoid. One solution is a shift in vision towards a more empowering form of professional learning, one that Cochran-

Smith and Lytle (2001) term an 'inquiry-stance'. This proposes a values-driven notion of professionalism, within which teachers investigate and interrogate their local contexts in order to align their professional values with educational outcomes.

In order to become research literate, enquiring professionals, teachers will also need to be supported in developing the skills of research through in-house and externally supported expertise. School leadership thus needs to focus on capacity building (Dimmock, 2012) in which teachers are encouraged to experiment continuously with locally relevant pedagogy and theories, through school-based enquiry (Tan, 2012b). However, in order to achieve this, some thought needs to be given to the types of support that teachers will need to conduct practitioner research, such as conducting an audit of the existing skills and expertise at the school and linking research to areas of development. Establishing links with universities and other research-based organisations can also be important in fostering external support and critical friendship (Swaffield and MacBeath, 2005). Knowledge of the types of structures that are needed could no doubt reduce the length of time needed to reach such a desired end point.

Formal school leaders can also use research engagement as a way of engendering cultural change. School research engagement thus acts as one of the five 'Doors' which can lead to school cultural change:

1. Increased collegiality (developing PLCs)
2. Engaging with research (using published research on effective teaching and learning especially)
3. Teacher engagement in research
4. Curriculum initiatives
5. Teaching strategies

   (Joyce, 1991)

Using research to shift the culture of professional learning can be described as 'tactical' research utilisation (Wilkins, 2011b, p. 26) in that it is directed towards something other than its explicit aim (e.g. to change a teaching practice).

The school as a (research-informed) learning organisation

The focus on learning organisations can be seen within a context of the global concept of the 'knowledge economy' (e.g. Drucker, 1998). The shift from a modern, industrial era to one of the production of 'knowledge' (postmodern), in the context of schools, has been summarised in **Table 3**.

Table 3 Paradigm shift towards the knowledge era

The Modern (Industrial) Era	The Postmodern (Knowledge) Era
• Power as 'control over'	• Shared power and power from shared knowledge
• Top-down chain of command	• Distributed leadership
• Individualised learning (Professional Development)	• Learning encouraged and disseminated throughout the organisation
• Knowledge closely held by an elite	• Knowledge held by all members in all roles
• Decisions made by administrators with little input by teachers	• More collective decision-making at school level
• Emphasis on stability and control	• Emphasis on balancing continuity and change
• Fear of failure	• Support for risk taking and innovation
• Teachers and schools work independently	• Interdependent members (teams; networks)
• Employees are interchangeable, replaceable	• Loss of members signals loss of knowledge and organisational memory
• Interest in short-term adaptations	• Interest in continuous improvement and organisational renewal

(adapted from Collinson and Cook, 2007, p. 5)

Where the term 'learning organisation' is used, this tends to be a focus on a normative aim and outlines what this might look like. For a research-engaged school, this would look very much like the ideal of a knowledge-creating school, i.e. one characterised by:

- a culture of, and an enthusiasm for, continual improvement

- high sensitivity to the preferences of students, parents and governors
- decentralisation and flat hierarchies, groups being given the responsibility for scrutinising ideas and decision-making within their sphere of action
- informality of relationships among staff who value task-relevant expertise rather than organisational status
- professional knowledge creation as a whole-school process that has to be managed (monitored, supported, resourced)
- provision of regular opportunities for reflection, dialogue, enquiry and networking in relation to professional knowledge and practice
- a readiness to tinker and experiment with new ideas
- a readiness to engage in partnerships, alliances and networks

(Hargreaves, 1999a, p. 126)

The above list characterises much of what might be expected within a research-engaged school. As well as an ideal to aim for, organisational learning can be viewed as a process with,

"the deliberate use of individual, group, and system learning to embed new thinking and practices that continuously renew and transform the organisation in ways that support shared aims" (Collinson and Cook, 2007, p. 8).

Thus, the two notions of a PLC and a research-engaged school can be seen to be complementary and in Activity Theory terms mutually constitutive. In a research-engaged school, "*knowledge is effectively mobilised to underpin professional practice and learning*" (Dimmock, 2012, p. 115). Therefore, PLCs address the key issue of knowledge-transfer or mobilisation (e.g. Levin, 2008; Levin, 2010). PLCs also serve as a mechanism for engendering a cultural change in a school, as well as the kind of interchange of ideas that allows for knowledge to be converted in forms that lead to transformation of practice. Such learning communities can take into account the non-linear and "complex relationship between research knowledge and what teachers do" (Borg, 2010, p. 391). As PLCs are "*seen as capacity- and culture-building, ultimately having as their aim the promotion of student learning*" (Dimmock, 2012, p. 121), the ultimate aim of such a community, would be to develop and improve student learning, through a deeper theoretical appreciation.

However, knowledge transfer is not possible unless practice is open to others, open to scrutiny and discussed in a manner where levels of trust and collaboration are high. To generate the kind of social capital required in a maturing system (Hargreaves, 2012), school leaders need to promote and value

openness, reflection and professional debate. This tends to occur through extensive cooperative social organization among teachers and other school practitioners. However most schools are not set up to allow for effective social cooperation and for many teachers this requires a shift in thinking from teaching as largely a private endeavor. This can also be seen as anathema to the individualistic and competitive cultures that exist in the West.

Getting all the features of a research-engaged school in place may take several years and is likely to be a process of continual development. For school leaders to pursue such a long-term strategy, they will need to be less concerned with the oversight of day-to-day teaching and learning and more with strategies for promoting institutional and professional knowledge-creation (Tan, 2012b). This is only possible within a framework of distributed leadership (e.g. Spillane, 2012), where the responsibility for defining, implementing and overseeing a school's teaching and learning strategy is taken more collectively by staff at all levels of seniority.

What we mean by 'learning' in a (research-engaged) learning organisation; an Activity Theory perspective

The literature on organisational learning sometimes lacks a theoretical exposition of what 'learning' really consists of. Socio-cultural theories offer conceptual possibilities that enable an understanding of how learning occurs in context. *"From the socio-cultural perspective, learning is perceived as being embedded in social and cultural contexts, and best understood as a form of participation in those contexts*" (Boreham and Morgan, 2004, p. 308). Institutional culture is an important determinant of research activity in organisation as, "*what an organization can or cannot do depends on the extent of its culture, and that what the individual members of that organization can or cannot do depends on the extent of their socialization into that culture*" (Boreham and Reeves, 2008, p. 640).

One of the key features of a research-engaged school is that research is not conducted in isolation by individual school practitioners. Rather, it is intertwined

with improvements to pedagogy and more widely to school improvement and development plans. In order to achieve this, the school needs to encourage collaborative research and enquiry, to give plentiful opportunities for staff to reflect on their practice and to challenge existing practices and also for the results of staff enquiries to feed back into changes in school policies and practice. In other words, such schools are proposed to have advanced organisational learning properties in which research engagement plays an important role.

One of the problems for research into organisational learning (OL) is the confusion about how this is defined in the literature (Schechter and Mowafaq, 2013). Some research focuses on spelling out a list of features of a learning organisation (LO) against which organisations can be measured or measure themselves (e.g. Brandt, 2003; Silins, Zarins and Mulford, 1998). However, there is a wide range of features suggestive of LOs throughout the literature that makes this problematic to research in practice (Friedman, Lipshitz and Popper, 2005). Overall, the OL field has become 'mystified' due to four tendencies:

1. The likening of OL to individual learning – anthropomorphism – which ignores some of the practical issues about how an organisation needs to store information, set up meetings and carry out processes.
2. The reification of terminology, such as knowledge creation and double-loop learning; terms that can mean many things in practice.
3. The creation of a '*visionary-skeptic*' dichotomy; this is reflected in high profile speakers who give inspirational speeches about learning organisations versus those who find it hard to see the relevance to practice or evidence for its efficacy.
4. The construction of an excess of definitions of LOs and OL (Friedman, Lipshitz and Popper, 2005).

Schechter and Mowafaq (2013) suggest that to demystify OL there should be a common framework to the study of organisational learning mechanisms (OLMs). They suggest that research needs to:

i)   **move away from looking at individual learning to organisational learning;**
ii)   **it needs a clearly defined conceptual framework for enquiry and**
iii)   **focus on empirical evidence.**

Their solutions to these three aspects come from management science. However, I have adopted one based on Activity Theory or CHAT. Activity Theory has been

applied to the study of the introduction of new practices into workplaces (Engeström, 2010; Roth and Tobin, 2002), to understand the concept of OL (Boreham and Morgan, 2004) and to how new forms of learning develop when different professionals work together, crossing boundaries of practice, such as in school-university partnerships (e.g.Tsui *et al.*, 2009; Tsui and Law, 2007). All of these aspects make it a strong 'tool' for understanding the development of research engagement in a school setting.

In relation to their three guidelines, I will argue in favour of the latter approach, comparing to Schechter and Mowafaq's (2013) solution.

In terms of shifting **towards organisational learning and away from individual learning** ((i) in Schechter and Mowafaq, 2013), both approaches recognise the importance of the individual learning of an organisation's members (Argyris and Schön, 1996). Both views also recognise that organisational learning is more than the sum of its individual members' knowledge. The management science approach suggests that the learning becomes organisational once individuals' mental models become shared (Fauske and Raybould, 2005). This clear separation of the individual and organisation's learning is shown in this definition of OLM: *"Institutionalised structural and procedural arrangements for collecting, analysing, storing, disseminating, retrieving and using information that is relevant to the performance of the organisation and its members"* (Popper and Lipshitz, 1998, p. 161). Learning by organisations is seen as an external representation of individuals' learning which includes routines that resemble individuals' cognitive procedural memories (Cohen and Bacdayan, 1994).

Where this differs in CHAT is that the starting point for learning is not the individual but within the culturally and historically routed aspects of practice. Reconciling the learning of individuals and the collective, Boreham and Morgan (2004) see relational practices as being constitutive of the individual's mind, its higher functions being located in social practices (see Glassman, 2001). This does not deny the role of individuals within organisations; rather it looks at how learning is situated within a socio-historical context and mediated by tools which can be both material ones, such as documents, technologies or signs but also communicative, discursive ones. *"Discarding the concept of the individually-contained self for the concept of the relational self makes it possible to reconcile*

the apparently conflicting ideas of individual autonomy and learning collectively on behalf of the organisation" (Boreham and Morgan, 2004, p. 321).

In Activity Theory, individual and collective competencies are entwined in work practices and teamwork. For activity systems to work 'competently' they need to: i) make collective sense of the workplace; ii) develop and use a collective knowledge base; and iii) develop a sense of interdependency. Through the cultural and historical practices of the workplace, we can view knowledge as residing in an organisation, over and above that of its individual members (e.g. Lyles and Schwenk, 1992). This is a way for us to understand how the case study schools become learning organisations within which members (teachers, leaders) can come and go. Those working within the (research-engaged) school can thus enter as 'apprentices' in situated learning as 'legitimate peripheral participants' (Lave and Wenger, 1991).

Regarding **the clearly defined conceptual framework** (ii), Schechter and Mowafaq (2013) suggest research needs to be clear whether it focuses on how the organisation affords opportunities for its individual members to learn (e.g. Klein, 2000; Lam, 2005) or whether it refers to the outcome of a process, such as changes in staff practice or student learning (Schechter and Qadach, 2012). In other words, there is an assumption of a unidirectional process of cause and effect, with an independent variable (or variables) causing an outcome observable in one or more dependent variables. Where this differs with activity theory is the mutually dynamic nature of the elements of the activity system. For instance, in research-engaged schools there will be a two-way iterative relationship between research activity and the professional learning culture at the school. While individuals have an influence on the culture, it is their belonging to an existing culture that frames what they do. Citing Schein (1992), Boreham and Morgan (2004, p. 309) state that,

> "*the organisation's culture determines what it can and cannot do, and that the extent of individual members' socialisation into that culture determines what they can and cannot do*".

This can also be expressed through Vygotskyian ideas of learning, as a process of both 'internalisation', in which an individual's mental models are influenced by the collective culture and the tools available for use within it (including language

and scientific concepts), and 'externalisation', where the person interacts with and shapes the culture, using their own subjective perspective (see Edwards, 2007 for example).

Seen in this iterative manner, research engagement is not reduced to a strategy for implementing 'best practice' by 'applying' the knowledge of research. Here, research 'actions' live within the environment and can be seen as a cultural tool to bring about changes in the activity system – an expanded learning, "*where the objects and systems of productive activities in society become more complex and intertwined*" (Virkkunen and Kuutti, 2000, p. 303). This mutual dynamic of the individual and the culture, is reflected in the thinking of Dewey in his transactional realism (Biesta, 2010a) and also other socio-cultural writers, such as Bourdieu (Bourdieu and Johnson, 1993). However, while individuals can affect culture, this does not imply an easy and continuous malleability for learning cultures:

> "…*cultures have history and endurance. Artefacts and institutions embody and reify cultural practices and play an important role in the continuation of cultures*". Furthermore, "*learning cultures are governed by values and ideals, by normative expectations about good learning, good teaching, good leadership, and so forth*". Therefore, *"a learning culture should be understood as the social practice through which people learn" (Hodkinson, Biesta and James, 2008, p. 34)*

The value of a CHAT or Activity Theoretical approach is the incorporation of the social, historical and economic aspects of situated learning which enable us to see how the introduction of research into school practices will come across tension and contradictions, which problematises organisational learning and development.

The last element (iii) highlighted by Schechter and Mowafaq (2013) is **the need to focus on the empirical evidence** in OLM studies. Previous work on OL has often lacked a description of the actual processes that take place during such 'learning' at both theoretical and empirical levels (Boreham and Morgan, 2004). Where both socio-cultural and management science approaches agree is in the advantages of taking into account 'multiple views of reality' (ibid). This is proposed as a way of providing greater feedback from individuals for the benefit of organisational learning. The tensions produced when "*norms of organizational performance*" (Engeström, 2008, p. 35) are questioned and changed lead what

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Argyris and Schon (1978) refer to as 'double loop learning'. This idea has much in common with the psychological concept of a 'schema' in which a mental representation of the world either assimilates new knowledge ('single-loop learning) or the new information leads to the need, through 'disequilibrium', for a new schema itself (double-loop learning). Engeström (2008) takes this further when he describes the generation of new objects of activity through development of practice – sometimes in collaboration through inter-professional 'knotworking' (ibid) - as a form of 'expansive-learning' (Engeström, 1987). This third generation of Activity Theory can aid the understanding of how the traditional role of teachers and leaders in schools collides with a new practice that includes engaging with research. Each practice comes with its own – sometimes conflicting – socially and historically bound 'objects'. The negotiation of new objects of activity, can lead to the development (or potential for) a new activity system, i.e. a change in practice through a cultural shift.

Overall, the aspects studied from a management science view and a socio-cultural position on organisational learning overlap considerably. Both refer to the importance of routines or rules; both incorporate hard or soft, tacit and explicit knowledge; both suggest inquiry approaches that provide feedback and self-appraisal; both account for a kind of organisational 'memory'; both refer to 'artefacts' that relate to historical aspects of the organisation. Where an Activity Theory perspective is crucially different is in the central importance of mediated learning and the primary motivation for changes in the system being the object. The activity system is only understandable within the context of society, history and culture. By contrast, management science models tend to approach organisational learning in terms of a diagnosis of the needs of organisations towards becoming more *effective*. The use of an information processing model of the organisation is one that tends to see outcomes as a 'given' dependent variable and this is seen to be uncontroversial as long as it leads to 'success' or 'adaptation' to the competitive business world. In Activity Theory, the collective efforts of teachers and leaders in organisations is to be understood in terms of the socio-cultural and political dynamics of which it forms a part and which gives meanings to these efforts.

The process of OLM in management science follows an information-processing approach derived from experimental cognitive psychology (Posner, Nissen and Klein, 1976). In this approach, cognitive processes in people's minds are likened to the operations performed by computers (Lachman, Lachman and Butterfield, 1979). Five phases of information are proposed for organisations: acquisition, storage, retrieval, distribution and interpretation of information (Schechter and Qadach, 2012, p. 119-120). The extent to which these processes function optimally, is seen as indicative of OL. Individuals are seen as 'updating' the organisation's information processing capacities. Both the information processing approach and Activity Theory approaches offer cyclical models of change and attempt to reconcile the notion that knowledge can be created by individuals and in organisations. However, the information processing approach tends to relegate individuals as cogs in the machine. The challenge for organisations would simply be about 'updating' these cogs, or aligning them in the most efficient manner for improvement and organisational renewal and change. However, Activity Theory has the additional virtue that it focuses on the agency of those working within the activity system to use the knowledge created in joint learning expansively to transform practice (Virkkunen and Kuutti, 2000). The members of the system are also seen to be engaged in negotiation about the nature of the problem itself.

An activity systems conceptual framework for organisational learning and development through research engagement

Activity Theory has been applied to the study of the introduction of new practices into workplaces (Engeström, 2010; Roth and Tobin, 2002), to understand the concept of 'organisational learning' (Boreham and Morgan, 2004) and to how new forms of learning develop when different professionals work together, crossing boundaries of practice, such as in school-university partnerships (e.g.Tsui *et al.*, 2009; Tsui and Law, 2007). Methodologically, it has been used to study school development in two overall ways (Postholm, 2015). It has been used as a framework to transform practice, especially through the use of Engeström's (1999; 2001) expansive learning cycle (and change laboratories (Engeström *et al.*, 1996)). The second way, and the approach used here, is as the starting point for research into developmental processes (Bonneau, 2013; Foot and Groleau, 2011).

Activity Theory originates in the work of Russian psychologists Vygotsky and Leont'ev, and has been rediscovered and reworked, notably by Engeström (e.g. Engeström, 1987). In Activity Theory, 'activity' is the smallest unit that explains the collective action of a group of individuals, motivated by an object which is the purpose of the activity and has a social, cultural and historical context (Gonçalves, Sousa and Zacarias, 2013). *Activity systems* are the unit of analysis and the *object* of an activity is what distinguishes it from other activities. The top part of the triangle represents Vygotsky's mediated learning through tools or *instruments*; these can be signs, objects, artefacts, processes or even language or ideas. Engeström extends the triangle, so that activity is embedded in a *community*, with *rules* (norms, conventions and expectations) which mediate the interactions and the *division of labour* (in Tsui, Edwards and Lopez-Real, 2009, p. 31). The latter term can include the hierarchies, departments and roles in an organisation. See **Figure 1** below for the diagrammatic description of an activity system.
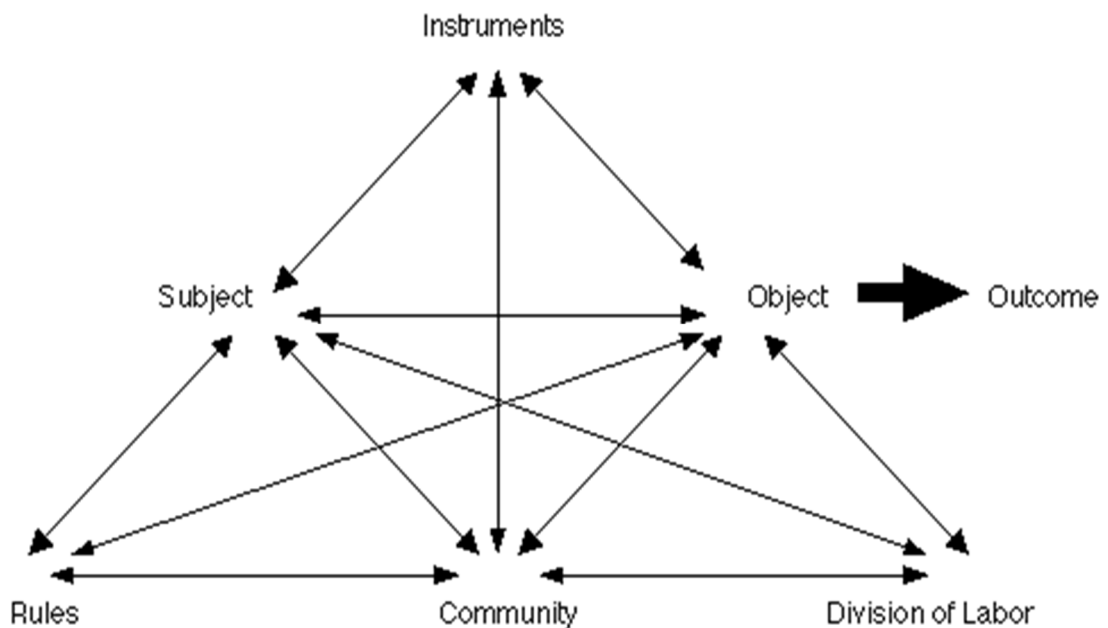
Figure 1 Description of an activity system

Activity theory offers a particular solution to the idea of development in organisations when viewed as activity systems. This is through the particular contribution of the central notion of 'contradictions'. In Activity theory, "*tensions and contradictions within and between factors in the activity system and between activity systems are the foundation for development and change*" (Postholm,

2015, p. 46). Four types of contradictions can be observed empirically, these are: Primary, secondary, tertiary and quaternary (see **Figure 16**).

Primary contradictions occur within factors, i.e. within the rules or within subjects. A central feature of Activity System theory is that there is an irreconcilable contradiction between the use value and exchange value of each factor (Engeström, 1996). This contradiction creates a dialectical tension that precipitates developments in the system. For instance, the use value of the classroom teacher could be in terms of developing citizenship skills through collaborative discovery learning. However, teaching is also a profession for which there is a need within capitalism to pay a salary and the resultant conditions attached to this, e.g. standards of professionalism or performance related pay, may affect the way that the teacher goes about her job. This may lead to the teacher adopting a more didactic approach to ensure students get appropriate grades in examinations.

Secondary contradictions can occur between factors in the system, for example between division of labour and the community. For instance, the need to achieve adequate progress of all pupils, as defined by external measures in examinations, may lead to changes in the working patterns of Assistant Teachers whose task it is to bring up struggling students to the 'correct level'.

As the context changes for activity the secondary contradictions create a 'need state' which motivates a search for a new object, which itself then becomes a motive (Virkkunen and Kuutti, 2000). When the new model is implemented, this leads to contradictions between the new and old activity systems; i.e. tertiary contradictions.

Quaternary or fourth level contradictions exist between central and neighbouring activity systems. For instance, the central activity of teaching may exist in tension with the activity system of educational psychologists who advise on how to aid the learning of pupils. A quaternary contradiction is thus defined as the introduction of a more advanced element from another activity system. This can lead to a reflection on the nature of teaching practice that becomes an expanded version of teaching, more complex and intertwined than before. This expansive learning is a complex historical process of institutionalised social practice. "*During*

this process, individual and collective learning, cognitive development and the development of new artefacts and organisational arrangements are made" (Virkkunen and Kuutti, 2000).

When analysing the developmental changes of schools which have introduced research, we can see this as bringing in new tools (or instruments), rules, new members to the community, new ways of dividing labour (changes to professional roles) and changing the actors who lead change (e.g. from teachers to teacher-researchers). These lead to a re-definition of the object of the activity system, which is potentially enriched by the collision of cultural-historical practices from research with those of teaching and leadership practices of school practitioners. The outcomes of such activity will also change. In the case study chapters 6a-6e, these are visualised as changes from an old/extant activity system and a new or potential activity system (below).

Old/Existing Activity System: **New/Potential Activity system:**
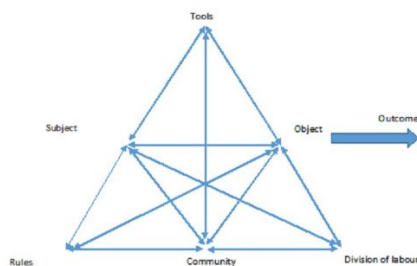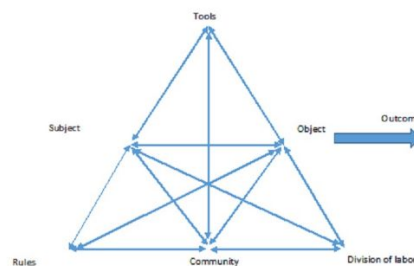
Figure 2 Activity systems conceptual framework for organisational learning and development through research engagement

This expansive learning is an iterative and non-linear process that can go through cycles of partial solutions to the contradictions until a new activity system is generated. This will then lead to a new object of activity and new contradictions in a continuous socio-historical process.

However, research into organisational transformation is often lacking in that it sets out a generic use of the term contradiction (Foot and Groleau, 2011). Some authors have argued that the central economic tension between use and

exchange value which is the Marxist underpinning to Engeström's work (Avis, 2007) need not be the only defining primary contradiction (Bonneau, 2013). For example there could be an inner contradiction between managerial logic and professional logic in the way that teachers work. Whether or not these are manifestations of an underlying economic tension in capitalism as Engeström asserts, it may be useful practice to define primary contradictions in research in ways that make most sense in the context.

A further shortcoming in much organisational research using Activity Theory is the failure to address the "*generative forces of the different levels of contradictions in socio-organisational relations*" (Foot and Groleau, 2011, p. 3). Thus, as the contradictions unfold, we can study the communicative features within an activity system that provide affordances for transformation of organisations. In other words, how different stages of the cyclical expansive development provoke "*particular learning actions*" (Foot and Groleau, 2011).

For some authors, the 'power relations' that exist within activity systems are a key source of analysis in this respect (e.g. Bonneau, 2013; Foot and Groleau, 2011). Similarly, Boreham and Morgam (2004, p. 321) propose the need for a pedagogy of organisational learning through, "*relational practices as the social structure that embeds organisational learning and promotes collaboration*". In their study of an oil refinery, they suggest that three relational practices provided the basis for organisational learning. These were: opening spaces for the creation of shared meaning; reconstituting power relations and providing cultural tools to mediate learning.

Engeström (see **Figure** 16 below from Engeström, 2001) suggested **epistemic actions** that occur at each cycle of change provoked by each of the four types of contradictions. Primary contradictions lead to questioning, secondary tensions lead to analysing and modelling a new process, tertiary level contradictions introduce an element of a more developed activity into the central activity system. This leads to examining and implementing the model and then evaluating new processes. Finally, at the quaternary level, as the central activity works alongside neighbouring activity systems, new practices are questioned and consolidated.
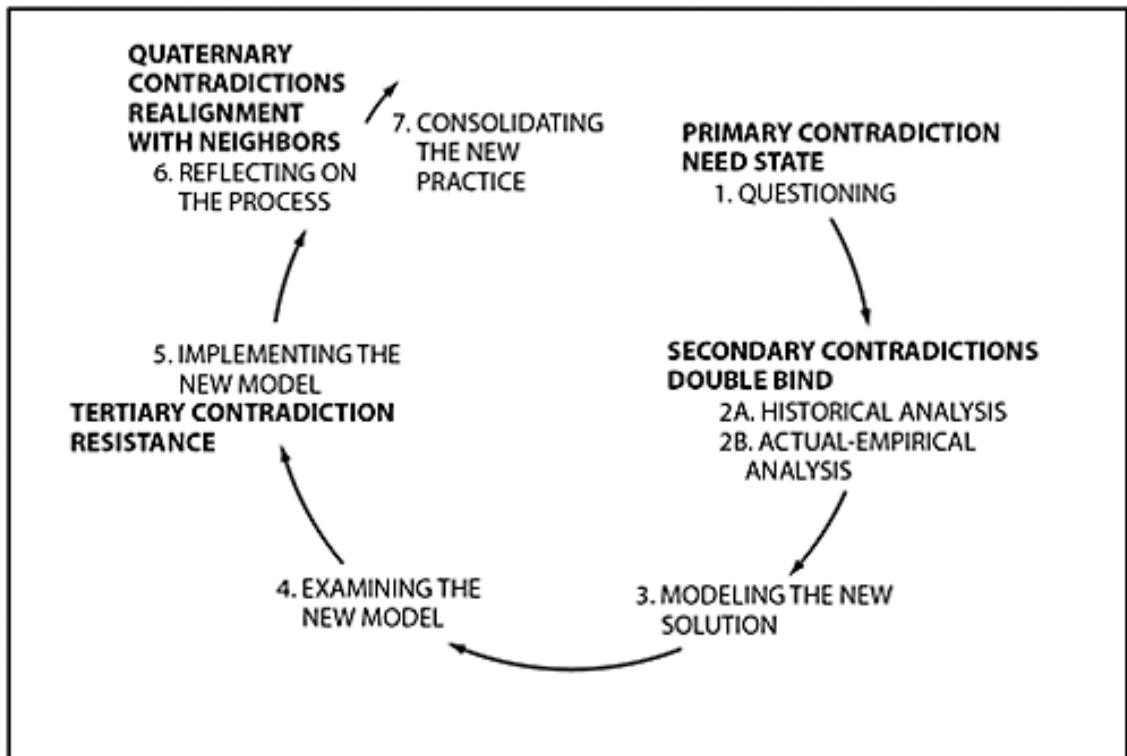
Figure 3 The expansive learning cycle (Adapted from Engeström, 2001)

While these contradictions cannot be empirically observed, manifestations of these can be identified through discursive patterns among members of the activity system (Engeström and Sannino, 2011). Studies that have used such an approach have thus formed the basis for data analysis of the case studies and the codes used are further explained in Chapter 3 (see data analysis).

Theoretical tools and their contribution to this thesis

Five key theoretical frames influenced my understanding of knowledge of this field and in the design of the research. These were: ecosystems framing, Activity theory, pragmatism, research-engaged schools and professional learning communities. Below is a summary of these areas and their contribution to the thesis.

Elsewhere I have argued that research-engaged schools should be viewed within an educational ecosystem (Godfrey, 2014). Ecological theories influenced my thinking about how the school operates within a meso-level of a larger ecosystem. This became increasingly important within the time frame of my thesis as calls for a 'self-improving system' in education became more prominent after the election of a coalition government in 2010 and the subsequent Conservative government in 2015 that continued this trend. Urie Bronfenbrenner (1992) formulated an ***ecosystems*** model that can be usefully adapted to understand the elements of research-informed practices in schools. For the purposes of this research we can define these levels as:

The Macro-system: This consists of the overarching beliefs and values that underpin education and schooling. These include the neoliberal economic, political and social agenda and the growth of a networked, knowledge society.

The Exo-system: This is the concrete manifestation of the macro-system and includes government policies to strengthen school autonomy and accountability, restraints on public spending, parental demands for choice and ideas about the self-improving system.

The Meso-system: This is the interaction of the microsystem and the environment. This includes an understanding of the school as a professional learning community (PLC) and its engagement with research evidence and the role of school leaders as enablers and architects of research-engaged schools.

The Micro-system: This is the immediate environment of the learner, in particular the actions and interactions of professionals with the learner, particularly focusing on the role of the teacher.

The Chrono-system: This is the influence of time at each and any sub level of the ecosystem. Here, it can be used to frame the evolution of school reform patterns and the development of schools as researching institutions.

School practices have been influenced by not only the organisational or leadership practices of the school but also by dominant ideas about education, the economy and politics. These transmit into concrete affordances and disruptions in the ecosystem of school-based practice. These elements have their own history and 'traces' are left that live within different levels of the system. Activity Theory (Engeström, 1987) provided the tools for the analysis of such a complex world.

Bronfenbrenner's (1976) ecosystem model can be seen as a way of setting an appropriate 'distance' from the object or activity we are viewing; while the meso-system is the level of focus, its connectivity and interactions with other horizontal and vertical levels shapes its internal dynamics.

When applied to the idea of a research-engaged school, the institutional concept of a school system and the policies that shape it could be considered the exo-system level of the ecology. This is the concrete outcome of the macro-system, i.e. the dominant paradigms of ideology and thinking that frame education in England. The exo-system could also be viewed more geographically as the interaction of schools with each other and other organisations in the locality. This has been applied to the analysis of local learning ecologies and workforce skills development within the Further Education sector (Hodgson and Spours, 2015). An earlier iteration of my thesis proposal did set out to look at school-university partnerships within the case study schools. However, the survey mapping exercise revealed these types of partnerships to be either non-existent, temporary or too inconsistent or varied to enable interviews with university staff. Therefore the case study interviews approached the idea of research

engagement in the professional learning culture mostly as carried out and experienced within the school.

Focusing on the professional learning of teachers and decisions made by school leaders in this environment, could thus be seen as *an aspect of the meso-system.* This has already been applied to work on researching cultures in secondary schools (Ebbutt, 2002). At the micro-level, with the child at the centre, then this would focus on the interactions between pupils and teachers in particular (which was not the case in my research).

Bronfenbrenner's (1976) ecological model, while being used inform methodological approaches to the study of child development, does not in itself, provide a coherent theoretical framework for the analysis of learning and development at the school organisational level. For this purpose, I introduced **Activity Theory** as the key tool of analysis for the school meso-level (e.g. Engeström, 2010). The case studies were accounts, descriptions and analyses of how schools develop into research-engaged institutions and the extent to which their organisational learning mechanisms promote such practices. Given the different contexts for each school, Activity Theory allowed reference to research engagement where the activity system was the common unit of study. Its use as a way of understanding the dynamics of development and organisational learning through the central concept of contradictions, formed the basis for data analysis of the five case schools that were followed up in detail.

Another major theoretical contribution comes from the work of **pragmatist thinkers** and appear in two principal ways: first as a philosophical tool to understand the way that research-based knowledge relates to the production of practice-based knowledge and changes to practice. Some of these points have been discussed above. Secondly, and as a logical corollary of this thinking, my own justification for my research design and analysis is influenced heavily by pragmatist thinking about epistemology and ontological issues (see Chapter 3, below).

A further area of theory comes from the specific work on **research-engaged schools**. The main contribution of this area of work was in the design of the survey used to gauge the extent to which each of the eight schools could be

considered research-engaged and to identify the patterns of research-engagement. This enables a comparison between the schools and the practitioners within them around a common set of parameters.

Finally, the field of ***Professional Learning Communities (PLCs)*** helped to focus the data collection from the interviews at five of the case schools targeted for follow-up. This enabled me to get a sense of the kind of learning environment that practitioners had experienced when engaging in or with research at their school. The notion of a PLC is also built into the notion of a research-engaged school and was the area that required more detail and nuance from these interviews than was possible to ascertain from a survey alone. One advantage of a more detailed assessment of the school as a PLC was that this aspect could be examined in relation to other research engagement aspects discovered through the surveys. Therefore what was known about research activity, the impact of research, structures for supporting research and sustainability, could be compared to accounts of staff about the school's professional learning environment. The literature and theoretical frame suggest an iterative and mutually constitutive nature of such a relationship that should be interesting to analyse.

Chapter 3 – Methodology

Research Questions

The introduction stated three overall research questions in relation to this topic. In the light of the above literature and arguments in chapters 2a and 2b these were refined for empirical analysis to:

1. **What are the distinguishing features of these case studies of research-engaged secondary schools? Specifically:**

    1.1. *Why do the practitioners in the case study schools engage in and with research?*

    1.2. *How do the practitioners in the case study schools describe research and what do they 'count' as research?*

    1.3. *What different patterns, intensity and stages of development of research engagement can be discerned at the case study schools?*

2. **How is research engagement linked to the development of educational practices at the case studies of research-engaged secondary schools? Specifically:**

    2.1 *What is the relationship between the professional learning culture at the case study schools and its other research engagement characteristics?*

    2.2 *How (and to what extent) does research-engagement influence organisational learning in the case study schools?*

    2.3 *How (and to what extent) do practitioners in the case study schools influence policies and practices when they engage in and with research?*

3. **How have the case study schools' researching cultures developed over time and how might they develop in the future? Specifically:**

    3.1 *What was the origin and purpose of research engagement at the case schools?*

    3.2 *What is the potential for the growth of the schools' cultures of research-engagement (and what might this next stage look like)?*

In order to address the above questions, the research first involved mapping out the patterns and intensity of research engagement at eight secondary schools using a survey. Analysis of the survey data led to the identification of four stages in the development of research engagement across the schools. In the second phase, five case schools were chosen for detailed follow up, representing a cross-section of these four stages of development. Interview visits of school senior leaders and other staff took place at these five schools. All data collection took place between October 2011 and July 2012 (see appendix 2 for full timeline).

Overall Research Design

The over-arching research design for this study follows a mixed methods approach defined as a: "*plan of action* (which) *focuses on collecting, analysing, and mixing both qualitative and quantitative data in a single study or series of studies. Its central premise is that the use of quantitative and qualitative approaches in combination provides a better understanding of research problems than either approach alone*" (Creswell and Plano Clark, 2007, p. 5).

There were **two consecutive phases of data collection**, phase one principally concerned with the collection of findings from the questionnaires of teaching staff at eight schools. Phase two was largely concerned with interviews with staff at five of the case schools, supplemented by other data from observing meetings, web-sites and school documentation and reports from Ofsted inspections.

The survey contained questions about perceptions of the school's research culture on fixed-choice Likert Scale, Yes/No and list options that are complemented by qualitative, open-ended questions (see appendix 3 for questionnaire). I have described this as the 'mapping phase'. This phase is concerned with comparing the patterns and intensity of research engagement at each of the eight schools. Looking at the 352 practitioners as a single group of respondents, some further findings are derived about the nature of engagement in and with research as they perceived this. While focusing primarily on the survey, a first sweep of coding of the later interview data from five schools, also adds detail and richness to the examples in chapters 4 and 5.

In phase two, the interviews provided first-hand accounts of the school's professional learning and research culture. Interviews followed up leads from survey responses from a range of members of staff, digging further into the perceptions, policies, permissions and practice of research engagement in the school. Consequently, convergent and divergent data were obtained from the perspectives of staff at various levels.

Overall, the research design is characteristic of 'development' (Greene, Caracelli and Graham, 1989) or 'exploratory' (Creswell and Clark, 2007) mixed methods research. According to Greene (1989, p. 267), development designs involve sequential timing: "*one method is implemented first, and the results are used to help select the sample, develop the instrument, or inform the analysis for the other method*". All three purposes were employed in this study, the survey being used to select a sample of schools reflecting a range of 'depths' of research engagement – a form of 'intensity sampling' (Teddlie and Tashakkori, 2009); to develop the instrument as a way of assessing the school's current level of research engagement culture; and to inform the data collection strategies for the five selected case schools. Construct validity for the survey instrument was ensured by reference to a range of previous instruments, models, theories and definitions of research engagement (see Appendix 4).

The case studies are embedded within the sequential mixed methods design. Case studies here are defined as "*an empirical inquiry that investigates a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident*" (Yin, 2002, p. 13). According to Robert Yin (2002, p. 28), one of the features that most distinguishes case study approaches from other related methodologies, such as ethnography, is the fact that theoretical propositions are deliberately made from the very beginning of the research process. Here, the identification of the cases was based on the theoretical concept of a research-engaged school. It is important to note that such a concept is not widely used among school leaders or practitioners, nor is there a recognised single way of capturing an example of a research-engaged school. This is despite being highlighted as a potential linchpin concept in the context of contemporary research-informed practice

(Dimmock, 2011; Dimmock, 2014; Godfrey, 2014). Hence, the survey was used as a way of mapping out the eight schools and later pinpointing schools from each stage of development from which additional interview visits could take place.

Validity issues

Following a mixed-methods 'triangulation design', the aim was to "*compare and contrast statistical results with qualitative findings or to validate or expand quantitative results with qualitative data*" (Creswell and Clark, 2007, p. 62). The latter part of this definition is most apposite to this study - the survey, with its quantitative focus provided a starting point in the analysis of detailed, largely qualitative case studies of a sub-set of these schools. Miles and Huberman (1994) identified five kinds of triangulation in research. Below is a description of the triangulation sources in relation to the empirical data captured in this research:

- **Triangulation by data source** (different people, times or places). I collected data from school leaders, teachers and TAs and support staff; the interviews were conducted after the surveys, and data was taken from up to eight different secondary schools.
- **Triangulation by method**. I collected data primarily through the use of surveys and also interviews. I observed a professional development session and also took notes from a seminar I gave at one school. In addition I took data from Ofsted and DfE and other website sources in relation to each school.
- **Triangulation by researcher**. I was the only researcher involved throughout. However, I also shared some early interview data analysis in a seminar on qualitative analysis at UCL IOE to make sure that I had considered other possible interpretations of the data. I also shared early coding of survey and interview data with my supervisor
- **Triangulation by theory**: Interpretation of the broad stages of research engagement was determined by existing literature on research-engaged schools. Interview questions allowed for further exploration of the extent to which schools exhibited features of PLCs and were based on the literature in this area. Further analysis of the five case schools in phase two took an Activity Theory perspective. The latter theoretical approach allowed for further exploration of each school's organisational learning mechanisms and a retrospective interpretation of how research-engagement had developed at the schools, as well as the potential for further development.
- **Triangulation by data type**: Quantitative data, mostly from the surveys, was combined with qualitative data taken form open-ended survey questions and qualitative data came largely from the interviews conducted at five schools.

Overall, the small number of schools means that I do not propose to make claims that necessarily apply to all secondary schools in England, or indeed more widely. Nevertheless, there will be aspects that will apply nationally and internationally; such as constitutive rules that are shared across schools about the nature of teaching and the broad divisions of labour that exist regarding subject teaching and leadership positions. Previous chapters have also outlined my argument for a historical understanding of the phenomenon of research engagement in an international and recent national context. Thus, there is a recognition in my analyses that the researcher already brings much information to the case before it is empirically studied and that all inferences are "*embedded in some theoretical context*" (Evers and Wu, 2006, p. 519). Much of the motive for rich descriptions of research engagement in these schools will be that of making 'empirical generalisations' (Evers and Wu, 2006). In other words, the cases will provide further nuance to the general concepts of research-informed practice and research-engaged schools. A further form of generalisation will be that of 'abductive inference', in which the phenomena observed will be explained with reference to the theoretical approach that provides the best explanation (Walton, 2014). Overall, the idea of 'naturalistic generalisation' (Stake and Trumbull, 1982) applies to these studies - i.e. the need to look in a considered manner at the extent to which some aspects may be unique to the context while others could be usefully applied beyond the cases studied. In these matters I also claim to offer a good degree of knowledge that is informed by work as a practitioner and HE researcher and facilitator. Thus my own ability to make generalised findings from this work has been enhanced.

To sum up, the research followed two consecutive phases: Surveys of staff at eight secondary schools *estimated to reflect* a range of research engagement (from 'emergent' to 'embedded'); followed by the in-depth study of five schools cases, at least one from each stage. **Figure 1** shows the phases of data collection, the data collected and how they were used to answer the research questions stated above.

Survey of teaching staff at 8 schools

- **qual** - Thematic analysis of open-ended questionnarie responses by teaching staff on their school's research culture
- Checking knowledge of school's research activities and arrangements
- **QUAN** - Percentage responses on Likert scales and yes/no responses in relation to staff perception of research culture and knowledge of research-activities at their school
- Baseline comparisons with teacher engagement in and with research from National Teacher Research Panel Survey **(NTRP, 2011)**; satisfaction of criteria for NFER's research-engaged award and responses to Ebutt's **(**2002) survey of school research cultures.
- focus: RQ1 (also combined with follow up phase to inform follow up cases and RQ2 and 3)

Follow up at 5 schools

- **QUAL** - 32 Semi-structured interviews with staff at schools (including non-teaching where appropriate (not included in survey)).
- Observation of relevant meetings/INSET relating to research engagement at one school
- Use of website and other documents to paint picture of school culture and aims of research engagement
- reference to published data from DfE and Ofsted
- First coding of data according to categories of survey and other emerging categories
- focus: RQ2 and RQ3 (also added details to mapping stage in answer to RQ1)

Synthesis and comparisons

- Comparisons of schools' patterns of research engagement at 8 schools
- Analysis of staff survey in terms of their engagement in and with research
- Analysis of 5 case study schools. The historical development and context for research enagagement
- Second coding of data according to Activity Theory analysis of schools as research-informed learning organisations
- focus: RQ 2 and RQ3 - combining learning from the 5 follow up schools

Figure 4 Phases of mixed methods research design

N.B. Letter case (QUAN/Quan or QUAL/qual) denotes relative importance of quantitative vs. qualitative data in each phase.

Epistemological stance

My stance toward the knowledge created in this empirical research reflects the general characteristics of pragmatism, these being:

- The rejection of traditional dualisms (e.g. rationalism vs. empiricism, realism vs. antirealism, free will vs. determinism, Platonic appearance vs. reality, facts vs. values, subjectivism vs. objectivism) and generally prefers more moderate and common sense versions of philosophical dualisms based on how well they work in solving problems.
- A recognition of the existence and importance of the natural or physical world as well as the emergent social and psychological world that includes language, culture, human institutions, and subjective thoughts.
- A high regard for the reality of, and influence of, the inner world of human experience in action.

- Knowledge is viewed as being both constructed and based on the reality of the world we experience and live in.
- Theories are viewed instrumentally (they become true and they are true to different degrees based on how well they currently work; workability is judged especially on the criteria of predictability and applicability).
- Endorsement of eclecticism and pluralism (e.g., different, even conflicting, theories and perspectives can be useful; observation, experience, and experiments are all useful ways to gain an understanding of people and the world).
- Endorsement of practical theory (theory that informs effective practice; praxis).

(Johnson and Onwuegbuzie, 2004, p. 18)

Rather than an overall paradigm for mixed methods research, I use pragmatism as a set of thinking tools throughout my approach to interpreting research data, both quantitative and qualitative (Biesta, 2010a). Greene and Caracelli (1997) urge a reorienting of the focus away from irreconcilable paradigmatic characteristics towards ones which can lead to complementarity, synthesis and usefulness. For this reason I chose theoretical lenses that I perceived to be good tools to illustrate an exploration of research-engaged school case studies. The type of data, be it quantitative or qualitative, case studies or survey data, does not reflect an adherence to one particular paradigm, i.e. social constructionism versus positivism (Biesta, 2010a). Rather, the data collection methods were used to serve specific research questions and were designed to facilitate triangulation of the issues. It has been pointed out, in this regard, that triangulation need not be between quantitative and qualitative data, nor need quantitative data be considered of a different 'nature' to qualitative data; for example qualities can be exchanged for a number 'rating' and vice versa (Symonds and Gorard, 2010). For that reason, I do not encourage a sharp distinction between the quantitative, and largely descriptive survey data and the open-ended items in the same survey or the interview data. I did, however, follow Creswell and Clark's (2007) advice for mixed methods designs, in providing a visual representation of the phases of research and the ways in which each main type of data collection was designed to satisfy the research objectives (figure 1, above).

The extent to which each type of data reflects an aspect of 'social construction' or of 'reality' varied according to the survey item and interview question. For this, I rely on 'common sense'. Take for example, when teachers were asked on the

survey to name a member of staff who was in charge of encouraging and coordinating research activity at the school. Here, the answer relies on the memory of the participant and to an extent their interpretation of the person's role and of the meaning of 'research'. However, large agreement on this person's name at the school reflects, in my view an approximation to 'reality' that can be reasonably objectively verified. On the other hand, the question regarding 'the extent to which school leaders encourage engagement in research', is rather different. A number of factors will 'mediate' this version of reality, such as the interpretation of 'encourage', and 'engagement in' and 'research', not to mention the inherent response bias that makes one person consistently rate lower than another. Thus, some answers were clearly more about social construction, and may also reflect the institutional culture of the school. This culture may also include the desire to paint a favourable picture of the school climate. Pragmatism can help as a thinking tool here, in that it offers the possibility that knowledge is both constructed and real and has thus been termed 'transactional realism' (Sleeper and Burke, 1986).

Reflexivity issues are also important to consider. These were coloured, undoubtedly, by my own experiences as a practitioner with a research engagement role and my enthusiasm for promoting a particular kind of research-informed practice. In choosing semi-structured questioning, I also influenced the course of the interviews by pursuing topics of 'interest', such as the role of the inspectorate in shaping ideas of professionalism. The latter views became more sharply apparent to me having resigned from my teaching role to take up full-time research and enabling me to take a wider view of professionalism than that gained while working in one particular 'outstanding' institution for ten years. My opinions about the disruptive effect of accountability on professionalism and innovation have been further shaped by my research work on a major European project on inspection processes. I take the position that, in line with thinking from the Deweyian pragmatist position, that all forms of 'inquiry' or research are a form of intervention (Biesta, 2010a). Thus, although this was not a particular focus of my analysis, it is possible that my surveys and interviews had consequences that affected various outcomes in the process of measurement. Indeed, the survey phase was followed by the production of an initial report (see appendix 5) that

was sent to the schools and could have led to changes in practice or policy as a response to these initial findings.

Furthermore, my 'selection' of a socio-cultural approach to analysing the organisational learning mechanisms at the case study schools, while rationally argued in terms of its explanatory power, nevertheless reflects some of my own value system. This includes a distaste in the trend towards measuring schools in terms of outcomes that rely heavily on attainment data. I was wary of an approach that looks to see whether research-engaged schools led to 'better outcomes' in this narrow sense.

My analysis followed a process of abduction, i.e., "*theory, data generation and data analysis are developed simultaneously in a dialectical process*" (Mason, 2002, p. 180). Thus, theoretical approaches were used quite deductively in some areas, for example in the discourse and thematic analysis of the organisational learning mechanisms of the school using criteria derived from Activity Theory research. In other areas, I adopted a more grounded approach (Glaser and Strauss, 2009), generating analytical nodes to do with the meaning ascribed to research by teaching staff and motivations for research.

I was also cautious about the adoption of Activity Theory for two reasons: First, I was concerned that the complexity of the theory itself meant that the issues to do with research cultures in schools would be made too opaque. I have tried to guard against this wherever possible. Secondly, I was worried about adopting an analytical position that became all-pervasive and overtook the aim of the research in a 'self-examinatory' way. I found this to be a tendency in some of the literature on Activity Theory. I chose therefore to select aspects of the theory which I felt were most useful in explaining the phenomena being studied. My aim was to reach agreement about a research question that would be for the good of society (Johnson and Onwuegbuzie, 2004).

In terms of my claims to 'truth', I adopt a pragmatist position here, too, i.e. that truth is unknown as reality has a temporal dimension in which our actions will have consequences that can be evaluated at one time. However, the likelihood of the same outcome in another context at a different time can only ever be a probability rather than a certainty. Thus warranted assertions are what I claim to

make in this thesis through the intervention of my enquiry and these are clearly context-based and may or may not be transferable from one context or time to another (Biesta, 2010a).

Ontology

I take the position throughout that reality is multi-layered, complex, and the elements and forces within it form a dynamic and mutually evolving relationship. Such complexity of open, social systems, means that the determination of straightforward cause and effect relationships is very unlikely (Prigogine, 1984). This has influenced my thinking regarding the role of research in the school system, my use of theory and my choice of research design and methodologies. While searching for patterns of events that occur in relation to each other, I reject a reductionist or mechanistic interpretation of reality and assume a social ontological position which seeks meaningful events, as interpreted by social actors (Biesta, 2010a). In relation to the events studied in my case study schools this has the implication that hypotheses about cause and effect can be made but these are complex and relatively unpredictable. As schools and their staff operate in social systems, such systems may be shown to have the likelihood of a limited number of responses to given situations but these will not be reducible mechanistically to single, irreducible causes. By taking a transactional realist position, this ultimately means that reality is that which is perceived by a person, as they interact with the world. While this means that the world is essentially subjective, when people work with others, they construct an 'intersubjective' world, which allows them to coordinate, control and communicate. The consequences of this is that rejecting objectivism does not necessarily lead to chaos and relativism, reducing the so-called Cartesian anxiety (see Biesta, 2010a, pp. 110-112).

Ethical Issues

I take the view that ethical issues imbued every decision made through the research design; how I conducted the research, how the schools and staff have been represented and how I reflect on my own interpretations of the research. Much of what might be described as ethical or value stances, then, come throughout the methodology and the results and discussions. Below I suggest some of the key issues to consider, particularly at the stage prior to conducting the empirical work and make reference to BERA guidelines, that principally guided my decisions.

In terms of consent, all school staff involved in providing data were informed of the process in which they were to be engaged, including why their participation was necessary, how it was to be used and how and to whom it would be reported (BERA, 2011, p. 5).The research engagement survey had a brief introduction about the research aims. In one case, I was able to elaborate further on my aims when I attended a whole-school INSET (at Ashbury School) and distributed the survey on paper. In the other cases, the purpose of the survey was communicated in an email message that was forwarded to respondents and explained by a senior leader at the school who was the gatekeeper for the research activity (see appendix 6). Names of respondents were requested in order for me to track 'interesting' cases for follow-up at interview if necessary, although in practice there were practical issue with availability of some staff that made this impossible. The right to withdraw from the process, or exclude data from the final report, was made clear in the briefing for both survey and the interviews, and respected at each stage of data collection (surveys, interviews, observations).

Those taking part in the follow-up interviews signed consent forms that explained the full purpose of the interviews, the research and also of the reason for recording the interviews (see appendix 7). All data collected about the school was kept in encrypted files on my home computer, a USB or on the IOE student drive.

Initially I had planned to obtain consent to use the real names of case study schools, and at least one of the schools was happy to do so as they felt it would show the school in a good light. However, in order to remain consistent, I felt that it was better to anonymise the names of the schools, using pseudonyms for the case studies. These were initially coded as initials (TA, TB, etc.) for the survey

analysis and later given full names in order to enhance the qualitative description of the case studies. As circumstances changed during the research period (e.g. in one school their budgetary restraints were set to curtail some of their research activity and another was 'downgraded' after an Ofsted inspection) my decision was helpful in protecting the schools' image, I feel. Any background data about the school used in the case study descriptions, such as from the DfE or Ofsted, is referenced generically, to avoid the possibility that the reader might be able to trace this back to the name of the school from publicly accessible documents.

In order to incentivise participation in the survey I produced a summary of the findings from the initial report and sent this to the Head Teacher (see appendix 5 for executive summary of report). It was anticipated that schools agreeing to administer the survey would find this to be of some benefit. I felt that this was a recognition of the effort of participants in contributing to the research and was more concerned for this than the potential for the report to have a 'contaminating' effect on staff responses at interview (see BERA, 2011, p. 7). I also invited feedback on the report to correct any inaccuracies or misinterpretations although none was received. In the case of Ashbury School, I held a seminar attended by three teachers, the research coordinator and the Head of the Teaching School. This was with the intention of leading in to further sessions that might involve intervening to develop research practices further. However, while the seminar was well-received, the idea for follow-up sessions was not one that the research coordinator felt was appropriate. This was partly due to the fact that he felt that he needed to create his own 'mark' in a new role and also that it would have been difficult to assure cooperation from enough staff of sufficient seniority to ensure actions were implemented. In retrospect, this would have taken my research into a new realm and one that may potentially have led to an over-abundance of data, and an approach not anticipated in the overall research design. This reflected my desire for research to have a direct impact on practice and was probably a consequence of my experience working with schools to develop research.

Overall, the extent to which I had access to schools was determined by my relationship with the gatekeeper and also influenced by sensitivities of raising issues at the school to do with their professional learning culture. The latter was relevant throughout. In two of the schools, there was a looming 'threat' of a further

Ofsted visit. In one case the school's National Teaching School status was under threat due to the possibility (which became reality) of losing their 'outstanding' designation. In another, the Headteacher had introduced research grants to change the culture of the school in the light of a 'requires improvement' designation that meant that they would be re-inspected within a short time frame. In a further case, I was unable to arrange follow-up interviews, despite my very good relationship with the research coordinator. She was in a relatively junior post at the school and told me that her Headteacher was not happy with the idea of someone talking to teachers about the professional culture of the school during a time of discontent among staff due to impending redundancies. Similar issues affected the enthusiasm of school leaders to promote completion of the survey by all staff and of the staff to complete the survey in detail. It must be said that a small minority of staff commented that they were unhappy at being asked to leave their name on the survey; I should have made it clearer that this was optional. Others were unhappy that I had made some of the open-ended questions obligatory to complete, leading to complaints about how long such surveys took for them to fill out.

Surveying research engagement at eight secondary schools

Procedure

In October and November 2011, emails were sent out to Headteachers of 99 secondary schools, mainly around London and the South East of England. They were invited to take part in a survey to establish the extent to which their school was research-engaged from the perspectives of teaching staff (including TAs) at their school. Most of the schools targeted for email invitations to participate, fell realistically within a limited geographical area for practical purposes and resource limitations, although this was expanded after a disappointing response rate from the first 20 schools. After this a further 77 schools were sent invitations to participate by email. This led to a further four schools agreeing to take part, with four having already completed the surveys.

Headteachers were informed that a report would be sent to the school once all the surveys had been collected and analysed. This was designed to incentivise a high staff completion rate through encouragement by senior leaders. The questionnaire was a mixture of Likert scale or Yes/No responses and items with extensive qualitative, open-ended questions. The open-ended responses provided texture to the data, allowing for participants perceptions and reflections to be considered during analysis.

Prior to sending the survey responses, I contacted a senior leader or Headteacher in order to establish a working relationship and to explain the purpose of the research in more detail. This enabled me to establish a gatekeeper relationship with one staff member and to organise follow-up interview visits at five of the schools.

The survey was sent out as a link to complete online, as a Google Forms document or as an attachment in Word. In some schools, completion of the survey took place during an INSET day; some completed online; others on paper (in one case the researcher went to the school to introduce the survey and collect completed questionnaires immediately on completion); other schools combined both paper and online modes of completion. The most significant factors in gaining a high completion rate were: providing dedicated time to teachers to respond and encouragement by senior leadership.

All schools that took part were sent a detailed report, describing the extent of its research culture (see appendix 5 for executive summary). The report was provided in order for relevant members of the school leadership team to look at ways to further develop aspects of their school's researching culture and also to incentivise as many as possible to agree to take part in follow-up interviews.

Sampling frame

I decided to involve only state secondary schools to establish a degree of homogeneity in the sample selected, thus avoiding the difficulty of establishing which effects and processes are unique to the educational phase. Secondary schools also offer a manageable size, compared to usually much larger F.E. colleges or some Sixth Form Colleges, while primary schools are generally smaller and may be more likely to work in consortia if involved in research. Independent Schools were also excluded. There is no objective way of knowing how many secondary schools might be considered 'research-engaged'; although the NFER has had (until 2013) a Research-engaged School/college award, only three secondary schools across the UK had received this award at the time of the research (NFER, 2010). Therefore, schools were sampled purposively to include:

- Some highly 'research-engaged schools', some with a 'middle' level of engagement and others with a minimal level.

- National Teaching Schools (first cohort), mostly in London and the South East

- Other schools known to have been involved in research. One school's Headteacher was on the panel of a well-known national research organisation and another was involved in a cluster arrangement with a university, known to me. Two of the schools were mentioned in the 2003 NFER project on research-engaged schools (Sharp *et al.*, 2005). Others had one or more of their teachers mentioned in research projects and articles that I had come across in my reading.

- Finally, schools where there was no reason to believe that a research culture had developed were selected, according to reasonable proximity to my home location.

Having used these criteria for the sampling frame, a key feature of those that took part in the research was the motivation of the Headteacher or another senior

leader to learn about this issue. Therefore self-selection was a known bias in the research. In a sense, this was not surprising. Those schools interested in research engagement were interesting cases and schools with no interest would have little motivation to ask their staff to complete a lengthy survey. Rather than attempting to provide a representative spread of school type, the issue was more about showing a range of depth of research engagement across the case study schools.

Of the eight schools that participated in the survey, five were Teaching Schools, one a former Training School, one a Comprehensive School and one a Grammar School. Pseudonyms have been used for the schools (see **Table** 4 below)..

A form of 'intensity sampling' along the criteria of research engagement later informed the choice of follow-up visits for case study schools.

Table 4 Comparison of schools selected, their contexts, type, composition and Ofsted grade

School name and label	Type	Composition	Other features	Most recent Ofsted grade
Croxham (C)	Comprehensive (Secondary Modern)	11-18 Mixed Mainly Indian and Pakistani background Above average FSM Above average SEN Low EAL	Large town outside London, Four selective schools in town	Was 3 (requires improvement) at time of research Now 2 (Good), September 2013
Greenmead (Gr)	Selective Grammar newly converted Academy	11-18 Mostly Boys. Mixed Sixth Form. Some ethnic minorities Low FSM Low SEN No EAL	Leading Edge One of four selective schools in county	1
Ashbury (TA)	Church of England, voluntary-aided, newly converted Academy	11-18, Mostly girls. Mixed Sixth Form. Many ethnic minorities High FSM High EAL High SEN	Inner – London Teaching School (25 independent schools in LA)	1
Barnfield Community (TB)	Community School at time of study newly converted Academy	11-18 Mixed High proportion of EAL , Mostly ethnic minorities High FSM High SEN	Inner – London Teaching School (27 independent schools in LA)	2 (June 2013) (1 at time of research)
Carlton High (TC)	Community School at time of study newly converted Academy	11-16 Boys Mainly Indian and Pakistani background High FSM Higher than average SEN	Teaching School In partnership with another school. Executive Principal for both schools. Leading Edge (few, if any selective schools in area)	1
Durston High School (TD)	Community School at time of study newly converted Academy	11-18 mixed school Very low FSM Low SEN Very low EAL	Teaching School, North of England	1

School name and label	Type	Composition	Other features	Most recent Ofsted grade
Evergreen High School (TE)	Community school	Large, 11-18 mixed Many ethnic minorities Above average FSM Average SEN	Teaching School Outer London Specialist centre for children with disabilities	1
Trinity Green (Tr)	Community School, Newly converted Academy	11-16 Mixed Mainly white British Low FSM Higher than average SEN	Outside of London. Training School Leading Edge A few selective schools in area	1 (2 for Teaching and Learning)

Respondent Sample characteristics

The intention of the survey was to conduct a thorough 'audit' of the school's research activities; therefore, the aim was to achieve high completion rates by teaching staff (including TAs). Ultimately, the aim was to survey all the staff involved directly in teaching at each school. In practice this varied considerably from school to school as outlined in **Table 5**.

Table 5 Response rates comparison by school

School	Number in survey	Total Number of teaching staff	Response rate	Mode of completion	Number of staff interviewed in follow-up visit
Croxham (School C)	46	70	66%	Mixture of online (email) and paper, via Headteacher on INSET day	4
Greenmead (Gr)	52	69	75%	Online (email) Headteacher publicised before sending out on INSET day to complete	None
Ashbury (TA)	115	115	100%	Paper Given out by researcher at school INSET at invitation of Headteacher	6
Barnfield Community (TB)	63	122	52%	Online (email) Publicised by Deputy Head teacher with research coordination role	8
Carlton High (TC)	24	78	31%	Online (email) Publicised by Deputy Headteacher	6
Durston (TD)	11	143	8%	Online (email) Publicised by Research coordinator (Head of Department level)	None
Evergreen (TE)	17	180	9%	Mixture of online (email) and paper Distributed via research coordinator (Assistant Headteacher)	None
Trinity Green (Tr)	24	129	19%	Mixture of online (email) and paper Publicised by Deputy Headteacher. Some left in staff room to complete and put in box	8
Total	352	906	39%	Online =4, Paper =1, Mixed Mode = 3	32

Where the survey was emailed to staff, the response rate was determined very much by how fervently a key senior member of staff was able to encourage all to respond. In the case of Barnfield Community School, the completion rate was 52%. This was achieved via the encouragement of the research coordinator, who was also the Deputy Headteacher at the school. One feature of the emailed survey, was that the response rate on the day the email was sent was crucial; further emailed reminders to complete the survey had very little effect. Other factors which determined the response rate included staff access to email accounts to complete the survey and the timing of the survey; coinciding with INSET days led to high response rates. Where the survey was completed via a link, completions rates were higher when staff were given specific times in meetings to do the questionnaire.

In some cases, the gatekeeper was a very senior member of staff and in others the survey was distributed by a more junior level person at the school. The latter was particularly true of Durston School, where the research coordinator was head of a subject department. She was reluctant to press the issue on high response rates given certain sensibilities at the school regarding redundancies at the time. She considered that pushing a survey about staff development and the culture of the school might lead to resentment and possibly negativity in responses. Although the Assistant Head teacher at Evergreen School showed initial enthusiasm for the research, communication became less frequent as time went on and the impression was given that the survey was under-publicised, leading to a low response rate (9%). As a result, the low return rate on these two schools in particular, meant that assessment of their organisation's research culture would be less reliable. In the case of Greenmead School, the high completion rate (75% of teaching staff), encouraged by the Headteacher, meant that despite not taking part in the interview stage of the research, the large volume of qualitative responses on the survey still enabled comparatively rich data to be collected.

The surveyed staff represented a spread of levels of seniority, as was the intention, with approximately half of the sample having teaching or TA roles and

no further management responsibilities. Approximately 10% of the sample comprised of the Headteacher, or Assistant or Deputy Heads (see **Figure 2**).

Position held by repondents
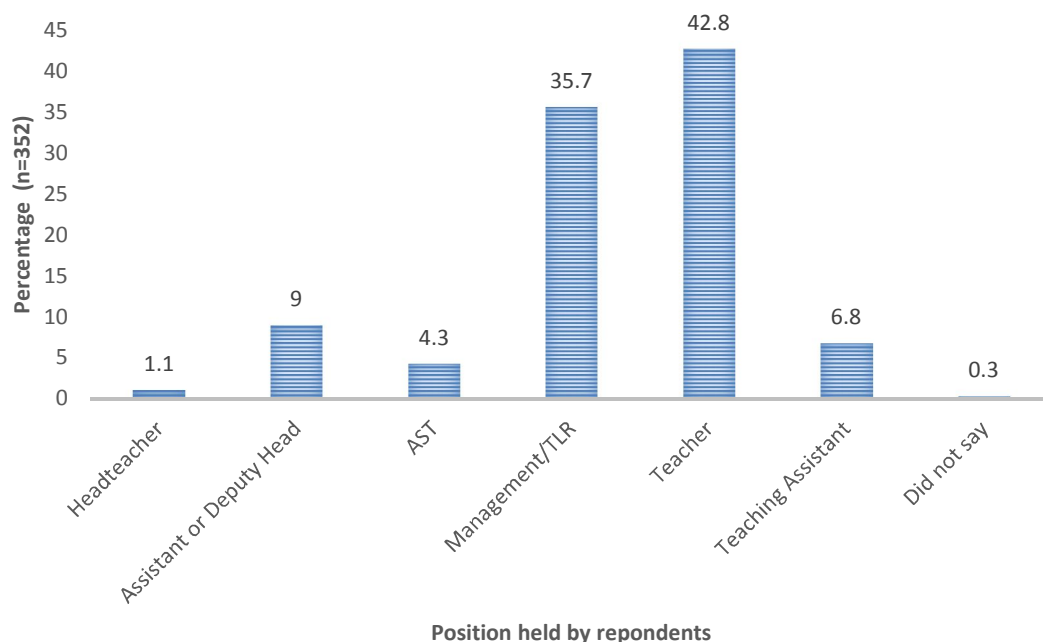
Figure 5 Overall composition of respondents by position (n= 351)

Given that TAs comprised approximately 20% of the 'teaching' workforce in 2011 (DfE, 2011b), this group is likely to be significantly under-represented in the sample. Nevertheless, compared to another recent survey of research engagement, this sample is less skewed towards senior leaders. Specifically, in the NTRP (2011) survey, 28% of their sample was either a Head teacher or Assistant/Deputy Headteacher, compared to only 10.1% in this survey; 31% of their sample were 'teachers' and TAs. Therefore, in terms of respondents' positions in the school management hierarchy, this survey would appear to be more representative of the make-up of a 'typical' secondary school.

The role of Advanced Skills Teacher (AST) has subsequently disappeared and a word of caution needs to be exercised in terms of how staff categorise themselves on this survey, since for example, teachers could have AST status from a previous school although not be technically employed on such a basis. In another case, the research coordinator categorised herself as a 'teacher' (her name was given on the survey), even though she was a head of department and her coordinator role gave her certain whole-school responsibilities. Nevertheless,

such inaccuracies are likely to occur in any such survey, and no doubt this was the case in the NTRP sample too.

Minor variations were apparent between schools, in terms of the level of seniority of the research respondents. This is particularly apparent in school Tr (Trinity Green), where over 30% of the sample were from the senior leadership team (SLT). In order to test for bias in response by seniority, an ANOVA was carried out on responses to section one (Values, Leadership and Culture), which allowed for responses on the Likert scale to be analysed by assigning the values +2 for strongly agree, +1 for agree, 0 for don't know, -1 for disagree and -2 for strongly disagree. Although there was a trend towards Heads, Assistant and Deputy Heads being more inclined to strongly agree with statements for the section, an analysis of responses for questions 8-17 shows that seniority of position did not significantly affect responses (see appendix 10).

Of the overall sample surveyed, 66% were female and 34% male. Nationally, women account for approximately 63% of the secondary school sector (DfE, 2011b), so this sample is broadly representative. Higher proportions of female respondents at school Ashbury (72%) may be due to the fact that this is an all-girls school (up to the sixth form). Greenmead School, which is an all-boys school (up to sixth form) had the largest proportion of male teacher respondents (50%). Previous research in England has shown that gender differences are unlikely to influence attitudes towards research by teachers (Poet, Rudd and Kelly, 2010, p. 18).

Teaching experience was fairly evenly distributed across the sample. Using the same categories as the NTRP survey (2011) enabled comparisons. Their sample was strongly biased towards experienced teachers, with 75% having had 10 years or more experience compared to only 41% in this survey. In the NTRP survey, only 11% had between 0-4 years' teaching experience, compared to 28% in this sample.
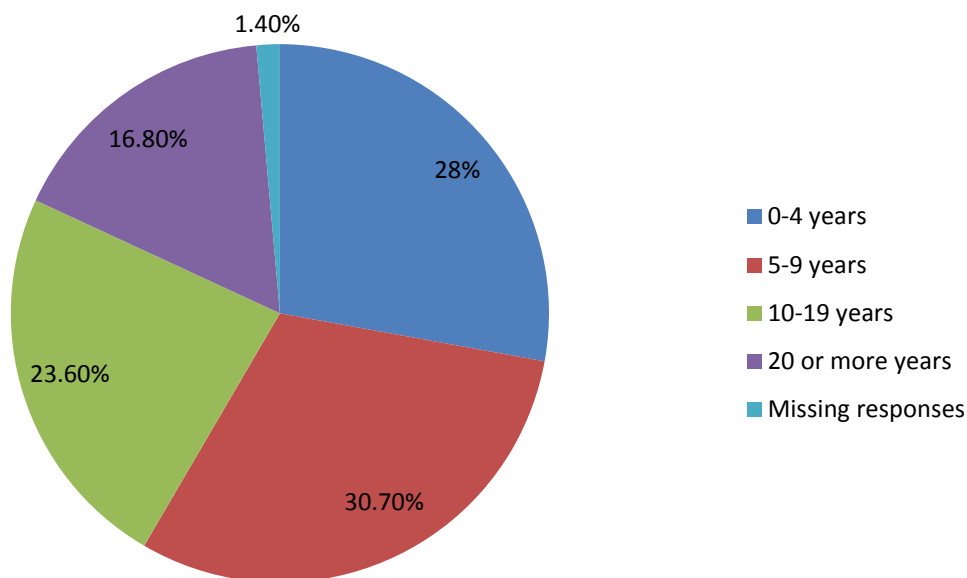
Figure 6 Years of teaching experience of respondents (n=352)

According to an analysis of teacher turnover from English secondary schools (Allen, Burgess and Mayo, 2012), only 18.8% of teachers (excluding TAs and Headteachers) had stayed at their current school for 10 years or more, so an interesting additional question may have been how long respondents had been at their school. This may also have allowed for some analysis about claims that research-engaged schools encourage retention of staff, voiced informally to the researcher at Trinity Green by the Headteacher (and elsewhere – see Sharp, 2007).

In this survey, only 24% had Master's awards and just over 3% held doctoral level qualifications, with over half (54.5%) having no postgraduate qualification other than their first teaching certification. Greenmead (Grammar) School had the most highly-qualified teachers with only 36.5% holding no postgraduate qualification other than first teaching award and where 34.6% had Master's level qualifications. The modest level of achievement of higher-level qualifications is most likely a reflection of the relatively high proportion of newly or recently qualified teachers taken on by the Teaching Schools in the survey. By contrast, using the same categories, in the NTRP survey (albeit only made up by 42% from Secondary school sector teachers), 35% had Master's level qualifications and 9% held doctoral level awards; only one third of respondents in the NTRP survey had no qualification at postgraduate level.
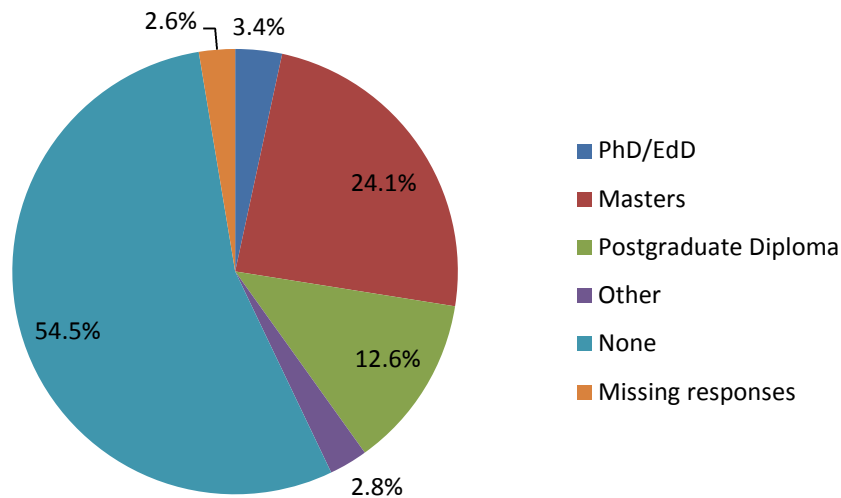
Figure 4 Postgraduate Qualification other than first teaching qualification (n=343)

The survey tool

The survey was designed to describe each school's current level of research engagement, according to the perception of teaching staff and school leaders.

Previous research by Ebbutt (2002) sought through surveys to distinguish stages in the development of a school's '*research culture*'. In general terms, it is useful to distinguish between the often interchangeably applied concepts of 'culture', 'ethos' and 'climate'. One survey of the literature sets out the following heuristic:

- **'Climate'** refers to the measurable input and outcome features of the school experience;
- **'Ethos'** involves the more subjective values and principles underpinning policy and practice;
- Whereas, **'culture'** is used to describe the integration of environmental, organisational and experiential features of school existence to offer a context for teaching and learning and its subsequent improvement (Glover and Coleman, 2005)

Therefore, a school's culture can be revealed in terms of professional relationships, between school staff and between staff and pupils; and in terms of organisational arrangements and procedures (MacGilchrist, Myers and Reed, 2004, p. 40). Relationships between staff and pupils were not addressed in the

survey, as this was not the primary purpose of this mapping stage, however, in the interviews, many staff participants volunteered responses about the culture of the school in relation to their student population.

The survey was derived from a number of previous instruments used in: a 'health-check' of research engagement (Handscomb and MacBeath, 2003b); the NFER's (2010) application form for the 'research-engaged school and college award'[15] and other definitions of the 'research-engaged school' as a concept (Sharp *et al.*, 2006c; Wilkins, 2011b) (see **appendix 4**). The NFER (2010) application form gave the most comprehensive indication of what might comprise a 'research-engaged' school or college. This was also well known to the researcher, as I had successfully been through the application process while working at a sixth form college. The five areas of the application are: 1. Values, leadership and culture, 2. Support systems, 3. Research activity, 4. Impact and 5. Sustainability. These criteria form subheadings which are replicated in the questionnaire. Given that the NFER application is meant to be submitted by one (presumably senior) member of staff at the school, some of the questions were not amenable to a survey, for example, "*criterion 5.5 - How do you intend to build your school's research skills, capacity and impact in the next three years?*" (NFER, 2010). Nevertheless, most of the questions could be transformed into useful questionnaire items that enabled either quantification of research activity or perception of the culture of the school, through a mixture of open-ended and Likert scale responses. The survey approach had the advantage of accessing a wider range of views than an audit conducted by a senior leader. This made it less susceptible to the kind of 'spin' that senior managers might want to impart on a criterion-based application process for an award. Asking teachers, TAs and senior leaders to complete the survey provided wide perspectives and opinions about the school's research engagement.

Regarding research cultures in schools, some research has focused on the key role that school leaders (or champions) make in maintaining a research-engaged approach (e.g.Sharp *et al.*, 2006a; Wilkins, 2000). Thus, some of the questions in the survey refer to teachers' perceptions of school leaders 'encouragement' of

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[15] This has subsequently been replaced by a new set of criteria for a new award, called the Research Mark. http://www.nfer.ac.uk/schools/research-mark/

research activity (see section a, question 32 of questionnaire in Appendix 3). However, one of the defining aspects of an 'established-embedded' (Ebbutt, 2002) research culture over-and-above that of a school with an 'established' culture of research, is that it has systems to encourage and sustain a culture of research engagement that would not require the continual 'championing' of this approach by a key school leader. The aspect of 'embeddedness' is captured in questions regarding the sustainability of research engagement at the school. This formalising of roles and structures is a hallmark of a highly research-engaged school: "*in the fully fledged research-engaged school, research roles would need formalising and to be given some associated authority; for instance, each school (or group of schools) might have a research coordinator, a research department, a budget and physical space*" (Dimmock, 2014, p. 12). Given the mutually supportive nature of culture (perceptions about the way things are done round here) and structure (systems, division of labour and organisational arrangements) (Swaffield and MacBeath, 2006), the latter is picked up in sections b and d of the survey (Appendix 3).

Many of the criteria for 'research-engaged schools' overlap with those used to describe LOs and PLCs. The section which most directly addresses this, is section a, titled, 'Values, leadership and culture'. Questions 8-13, address the extent to which research is engaged *in* and *with*, to inform decisions at individual, group and whole-school level. Such multi-level learning is often seen as a core assumption of 'organisational learning', as is the existence of a culture in which practices can be challenged (question 16) (Collinson and Cook, 2007, p. 32). Supportive leadership (questions 14 and 15) is often seen as an essential feature for the existence of effective PLCs (Hord, 2008, pp. 12-13). The literature on PLCs also points to collaborative professional learning (question 17) as the key, essential element (e.g.Stoll, 2010).

Some of the questions on the survey replicated a survey of teachers by the National Teachers Research Panel (NTRP, 2011) which was itself informed by earlier surveys (Everton, Galton and Pell, 2000; 2002). Reference to these surveys allowed for benchmarking of some statistics with regard to teachers perception of their school's engagement with (using, accessing) and in (doing own) research (questions 35 and 36) as well as reproducing some of the

categories regarding roles, seniority and qualification level of teachers in the survey (questions 4, 6 and 7). Finally, section c of the survey addressed research activity by individual teachers, which helped to inform the later follow-up interviews and observations, if the school was selected for a more detailed case study.

The questionnaire sought to measure more precisely the characteristics a school which has an 'emergent', 'established' or 'embedded' culture of research engagement. Some of these dimensions also served to cross-validate data. Hence, a teacher could respond to a question asking about whether there is 'support for staff to engage in their own research' and in the same questionnaire, were asked to state if they had carried out their own research while working at the school. The latter question, when given as a survey to a large proportion of teaching staff, had the advantages of quantifying the extent of research 'activity' in the school as a whole. The resulting instrument characterises a school's level of research engagement by combining an analysis of staff perceptions of the extent to which research is seen to be encouraged (using Likert Scales) with more 'objective' data relating to staff self-reports of current and recent research activity at their schools.

The survey was piloted by two members of staff, including the Headteacher at Croxham School, prior to administration and was critiqued by my supervisor. This led to the change of instructions to guide answering some questions and in particular a clarification of the difference between engaging in and with research.

Follow up at five case schools

Procedure

Having completed the survey of all eight schools, five schools were later followed up with interviews of a small number of staff. The gatekeeper for each school (always a member of the SLT) helped arrange the timetable for a one day visit and interviews ranged from 24 to 60 minutes in length. The interviews form the majority of the data collected at the five schools. In the case of Barnfield School, other visits to observe and film two professional learning sessions took place, one described as an 'action learning set' and another as EPD (Early Professional Development). In July 2012, I also attended Barnfield's research celebration event. Notes were taken from each of these visits. At Ashbury School, I was able to return in 2012 twice, once to present a seminar of initial findings and a second time to interview Neal, who had then become the school's research coordinator.

Sampling frame

This represented at least one school from each of the four stages of development in becoming research-engaged, on the basis of the survey data (table 6, below). This represents the idea of a cross-section in the developmental growth of school research engagement. The 32 staff interviewed from the case study schools were sampled purposively from the survey to include a mixture of: teachers directly involved in currently doing some kind of research activity; teachers who have not been involved in any research; the Headteacher and/or other senior members of staff directly involved in coordinating aspects of research related activity. The identification of these staff members was made possible through looking at survey responses and was also guided by initial discussions with the Headteacher or a gatekeeper at the school.

Interview sample characteristics

Table 6 Characteristics of interviewees in case study schools

School	Level of research engagement from survey	Number of staff interviewed in follow-up visit	Positions of interviewees at schools and their pseudonyms	Other data collected
Croxham School (C)	Emerging	4	• Department Head (Bob) • Special Educational Needs Coordinator (SENCO) (Judy) • Head of Year 10 and Department Head (Paul) • AST and Assistant Leader of Sixth form (Sandra)	School website Ofsted reports
Ashbury School (TA)	Establishing	6	• Assistant Headteacher (Lisa) • Head of Mathematics (Justine) • Head of Social Inclusion (Louise) • Mathematics Consultant and AST (Neal) • English Teacher and Assistant Curriculum Leader for Linguistic and Cultural Inclusion (Rhys) • Design Technology Teacher (Tim)	School website Ofsted reports Further follow-up interview with Neal (in new role as research coordinator for the TSA) Feedback from a seminar in which I presented initial findings with a small group of staff
Carlton High School (TC)	Establishing	6	• Assistant Headteacher (Kathy) • Head of History (Jane) • Head of Food Technology and Head of Year Nine (Julie) • Religious Education teacher (Maria) • Science teacher (Mike) • Head of Religious Education and Citizenship and course coordinator for Religious Education in the SCITT group (Nora)	School website Ofsted reports

Table 6 (cont.) Characteristics of interviewees in case study schools

Case study schools School	Level of research engagement from survey	Number of staff interviewed in follow-up visit	Positions of interviewees at schools and their pseudonyms	Other data collected
Barnfield Community School (TB)	Established	8	- Senior Deputy Headteacher (Tanya) - Acting Special Needs Coordinator (Faith) - Drama teacher (Faye) - History teacher and responsible for NQTs and PGCEs (Jade) - Head of Business and Economics (Jordan) - Science Teacher in charge of key stage 4 (Katherine) - Business and Economics teacher and Head of Post 16 Progression (Lauren) - Information and Communications Technology (ICT) teacher (Ted)	School website Ofsted reports Observations of 2'action learning set' meetings
Trinity Green School (Tr)	Embedded	8	- Lead AST for Mathematics and for Research (Camilla) - Deputy Headteacher for pupil learning (Sasha) - Science Teacher, Head of Key Stage Four Science and in charge of pupil voice (Carl) - Geography Teacher, Assistant Head of year nine (Daniel) - Head of literacy, and French and English teacher (Lee	School website Ofsted reports

			• Geography teacher and Assistant SENCO (Madelyn) • Food, Textiles and Resistant Materials teacher (Marta) • Head of ICT and Teacher Training for ICT (Patrick)	
Total		**32**	• Senior leaders: **4** • ASTs: **3** • Middle leader/Department Head: **15** • Teachers: **7** • Non-teaching (Inclusion/Senco): **3**	

Interview questions

The questions were concerned with the school culture in general, the opinions of interviewees about the school as a PLC and the role of research at the school from teachers and school leaders' perspectives (see Appendix 19 for full schedule). Many of the interview questions were informed by established features of schools as PLCs, i.e., shared values and vision; collective responsibility (for

students' learning); collaboration in developmental activities; the promotion of group as well as individual learning; reflective professional enquiry; de-privatisation of practice (Louis and Kruse, 1995) through observation, dialogue and trying out new ideas (Stoll, 2010, p. 153). Other questions included the extent to which research was listened to by senior leaders, and the extent to which the organisational culture promoted innovation. Different questions were given to senior leaders, as they were able to say more about the historical decisions behind the development of research engagement at the school. There was also a third set of questions for those who had not had much experience of conducting research or of other involvement in research; they were asked more about the general culture of the school in relation to the characteristics as a PLC. Also, all interviewees were asked the open question, "what is it like to work at this school?", to gain a general impression and to add to the context for each case report. Questions were semi-structured and acted as prompts, however considerable latitude was taken to develop lines of questioning that appeared promising and relevant, in particular those relating to Ofsted inspections and the accountability dimension.

Data analysis

Data analysis informs four chapters that deal with the findings: practitioner engagement *in* and *with* research (ch.4); patterns and stages of research engagement in eight secondary schools (ch.5); the history and development of research engagement at five case schools (chapters 6a,b,c,d,e), and an analysis of the organisational learning mechanisms at the five schools (ch.7).

Mapping school and practitioner level data

The first phase of analysis combines the data to inform chapters 4 and 5. Chapter 4 looks at the data at participant level (rather than school level) in order to understand the extent to which school staff participated in and with research, the purpose of this research, and what was counted as research. Chapter 5 was concerned with comparing patterns of research-engagement between the schools and ascertaining relative levels of development. These two chapters are

concerned mainly with RQ1: *What are the features of a research-engaged school (in practice)?*

The quantitative data from the survey was described and analysed using SPSS (version 20). This enabled the generation of a number of descriptive tables and graphs to illustrate trends in the participants' responses. These data are then used to make comparisons of the eight schools and to categorise each school in terms of its stage in development of a research culture. This enabled the selection of further follow up for data collection primarily through the interviews. This process of assigning stages is described in full at the end of Chapter 5. An initial analysis of the survey data was also used to compile a comparative report for headteachers at each school to compare themselves to peer schools and identify areas for improvement (see appendix 5 for executive summary).

A first coding sweep of all the qualitative data was then conducted with the intention of providing further explanation for the quantitative data generated from the surveys. This entailed the use of NVivo10 qualitative data analysis software to code the open-ended survey questions for all 352 survey responses and the 32 interviews conducted subsequently at 5 case schools. The six main survey categories were: values, leadership and culture, support systems for engaging *in* and *with* research, research activity, impact, sustainability and overall. Sub-nodes corresponded to themes linked to questions in the survey under each of these headings. For instance, section d on 'impact' (main node), was followed by examples under sub nodes for 'contributing to external partnerships' and 'contributing to wider educational knowledge'. Further consideration of this node led me to include examples under a sub-node of 'decisions made on the basis of research activity', many of which came from the later interview data as well as question 27 of the survey, listed under 'research activity' on the survey but in retrospect seemed more relevant under 'impact' (see appendix 3 for survey). This node was further sub-divided to a child-node which included examples such as 'those involving parents' and 'pastoral and SEN' (see appendix 8 for this node in full). Comments taken from surveys or descriptions from interviewees were also categorised in terms of 'details and background to school' which helped paint a richer picture for the case studies' chapters.

Themes were also coded at the 'latent' level, in order to *"identify or examine the underlying ideas, assumptions, and conceptualizations - and ideologies - that are theorized as shaping or informing the semantic content of the data"* (Braun and Clarke, 2006, p. 84). This followed advice by Braun and Clarke (2006) on how to conduct thematic analysis sequentially in six steps, so that:

    i)   The interview data was transcribed and I read through these to gain familiarity with it. Although most of the interviews were transcribed by a third party, I had the additional advantage that I also conducted all the interviews so was familiar with the content.

    ii)   Initial codes were generated. This was by writing out a set of memos while conducting the first sweep of the qualitative data coding for the purposes of cross validating the survey data. Not all of these were used but some of these notes informed the later conclusions sections (see appendix 21).

    iii)   Themes were reviewed both in relation to their relevance to the topic and their prevalence throughout the data set.

    iv)   Names and definitions of the nodes were generated by looking at the examples and refining as new examples were taken in and finally

    v)   Vivid examples were collected and highlighted in the context of the phenomena being studied and put into the context of scholarship in this area (adapted from, ibid, 2006, p. 87).

A further two themes were extracted as significant to illustrate aspects of the practitioners' research engagement, these were: **motives for research** and **definitions of research**. These are examined in Chapter 4. Thematic analysis was used as this method is *"independent of theory and epistemology, and can be applied across a range of theoretical and epistemological approaches"* (ibid, 2006, p. 78). This lack of theoretical 'baggage', made it amenable to the range of approaches used in this research.

Analysis of five schools as research-engaged learning organisations

This phase of analysis informs the five case school chapters, 6a, 6b, 6c,6d and 6e, as well as to the synthesis of data across the five schools (ch.7). Chapters 6 and 7 look more closely at the organisational learning characteristics and growth of research cultures at the schools. This phase is more concerned with understanding the mechanism of learning and expansion of research cultures, systems and practices and thus is concerned with answering: RQ2: *How can research–engaged schools improve educational practice?* and RQ3: *How can school researching cultures develop over time?*

Discourse analysis on the interviews was also conducted; these were informed by CHAT and enabled analysis of the five case study schools' organisational learning mechanisms (see Chapter 2b).

In one study, linguistic cues were used to identify dilemmas, conflicts, critical conflicts and double binds (Engeström and Sannino, 2011). Dilemmas and conflicts were manifestations of primary contradictions, while secondary contradictions were shown through critical conflicts and double binds. Linguistic cues were initially used to locate these manifestations within the texts of transcriptions from eight sessions over a year in a change laboratory intervention led by the researchers in a care home for the elderly in Helsinki. Below, I paraphrase their operational definition of each term and the linguistic cues used to identify them (**Table 7**).

Table 7 Discursive elements representing contradictions in activity systems

Discursive element	Definition	Linguistic cues
Dilemmas	An exchange of incompatible evaluations either within or between people.	On the one hand …and on the other hand…yes, but. Within dialogue, these are normally rephrased and reproduced rather than resolved.
Conflicts	Resistance, disagreement and argument and criticism, i.e. when one person is interfering with or in conflict with another.	No, I disagree, this is not true. These are usually resolved by coming to a compromise through negotiation.
Critical conflicts	Inner doubt leading to paralysis, not possible to be resolved alone.	Emotional expressions of guilt, feeling violated or silenced, through personal, moral and emotionally charged accounts. Resolution of critical conflicts tends to occur through making new personal sense of the situation and is seen as a form of personal liberation or emancipation.
Double binds	Akin to the idea of 'helplessness', in which people repeatedly face alternatives, neither of which offer a way out.	Rhetorical questions that indicate a dead end. "What can we do?" Attempts at resolution often move from the single to the collective 'we', "we will need to".

(adapted from Engeström and Sannino, 2011)

Engeström and Sannino's (2011) approach allows an analysis of the discourse that manifests in relation to organisational learning processes and the role that this discourse plays in resolving, obstructing or facilitating learning in the activity system. In their study, they were referring to an intensive period of analysis during a specific enquiry and change process over eight sessions. However, my interviews concerned teachers' experiences of working at their schools and the role that research played within the wider professional learning culture and

practices at the school. Furthermore, questions to the senior leaders of the schools related to a historical analysis of the development of research engagement, such as it was. Thus, the focus of the analysis also included the layers of tertiary and quaternary contradictions. I have therefore looked retrospectively, at manifestations of contradictions at each of the four levels. The present 'state' of analysis also allows tentative predictions for how the activity system might develop in the future by exploring the factors that afford movement from one level of expansive development to another.

Other research has used this approach of building a retrospective picture of organisational transformation. Bonneau (2013) analysed the introduction of open source coding at a Canadian university. She introduced the terms **paradoxes, dilemmas, incongruities and incoherence** for this purpose. Paradoxes are "*two sides of the same coin*", dilemmas are "difficult choices that lead to selecting one of two alternatives", incongruence is "*when an organisational policy does not correspond to the organisation's requirements or objectives, or when it simply goes against common sense*" and incoherence is when a situation is "*illogical or absurd*" (Bonneau, 2013, pp. 5-7). In her paper, Bonneau (ibid) does not elaborate in terms of full discursive elements, i.e. the linguistic cues for incongruity or incoherence are not spelled out. However, her terms may be useful indicators in the analysis of the case study data, for tertiary and quaternary contradictions. Below I describe these contradictions in the context of my research focus and suggest how these could manifest themselves in the school case study data (mostly through the interview transcripts):

Tensions between old and new (Tertiary contradictions): This would include expressions about previous forms of practice, structures or working cultures. This may refer to teaching or leadership practices, roles or processes to do with professional development or ways of evaluating teaching and learning.

Linguistic cues: Reflecting on what used to be and what the situation is now, such as 'we used to/there used to be..but now…'

Resolution to this would be through a re-evaluation of the relative situation alongside what used to be. Practical problems would revolve around implementing new forms of practice and the need to develop new skills or new

ways of working. Emotional elements could involve feelings of mourning for what used to be, such as denial, anger, bargaining, depression or acceptance (Kübler-Ross, Kessler and Shriver, 2014).

Incompatibility of co-existing practices (Quaternary contradictions): This would refer to existence of one activity system, such as teaching, alongside another, which could be researching or mentoring and training others. This might refer to collaborations with researchers and consultants or could contrast the objects that motivate leaders, teachers and outside organisations, such as Ofsted. *Linguistic cues*: These would be manifest in observations about one or more of the above activity systems and would be expressed in terms of observations about differences and similarities: "one thing that is different is...while we have to do this...they emphasise…". Resolutions to the existence of neighbouring systems could include a redefining of the nature of teaching, to include leadership or research, or the opening up of a new activity system, through 'knotworking' which may vary in its permanence, including one-off collaborations on projects. There may also be elements of reflection of competing priorities and of trying to harmonise the aims of one activity system and another.

As an analytic approach to my own interview data, these terms were a useful way of setting out a tentative set of terms to test against the data. These paradoxes, dilemmas and conflicts that occur as tensions in the here and now are the result of underlying contradictions that have occurred over time (Bonneau, 2013, p. 7). Therefore, it is important, not only to see them in the context in which they occur in practice but also the cultural and historical contradictions that underlie them.

All examples of conflicts, critical conflicts, dilemmas and double-binds, paradoxes, dilemmas, incongruities and incoherence were also coded for in the data, few examples were generated in practice. As examples of these discursive elements were found, they were then further expalined, to give contextual-related definitions. For instance, using the example of 'conflicts', this was defined in node properties as:

"Resistance, disagreement and argument and criticism. This includes internal argument. This includes the GTP being very practice based and lacking in theory, this does not help set up research informed practice (Jade)."

An example in the text then was in the exerpt from the interview at Barnfield Community School:

"I mean it's always an issue with the GT because it's very practice driven and obviously as an Historian I come from a kind of quite theory heavy is the wrong word but very book heavy, kind of reading heavy background originally but then the GTs very practice driven and actually it has very little academic grounding. This is anonymous so I can say that. Whereas a PGCE I think has that much more so, the way it's set up and it's delivered. And so I always felt personally that is a bit of a gap in my training."

A further example comes when Jade grapples with the internal conflict about Ofsted and what this means for teaching standards:

"I think we need to start first with conversation. I think probably we'd need to be two things; on the one hand we need to do one thing for Ofsted, which I think we're only starting to grasp what that means. And I'm not actually sure I agree with, you know, what they think is outstanding teaching. So I think we first of all need to figure out what does that mean, do we agree with it. I think most likely we might agree with some aspects of it and not others."

Regarding the meaning of 'discourse' as used by Engeström; Foot and Groleau (2011, p. 3), referring to Ashcraft and Mumby (2003), explain that the language used in communications and conversation in an activity system is best seen as a mediating influence on activity rather than an end product in itself. It is, at times, constrained by aspects of the material system but also helps to organise it over time. Adopting a form of critical discourse analysis, the discursive events are "*constitutive of and constituted by social context (situations), by objects of knowledge (institutions) and social identities of (and relationships between) people and groups (social structures)*" (Glynos *et al.*, 2009). Thus an analysis of the material aspects of the system is also important. Thus the material aspects of relevant aspects of the activity system should also be taken into account.

By testing the categories proposed by Engeström and Sannino (2011) and Bonneau (2013), on the interview transcripts, the 'discursive elements' where not always clearly evident. However the 'themes' in relation to primary, secondary, tertiary and quaternary contradictions were identified, sometimes taking their linguistic cues as outward signs. A full interpretation that took into account the

context of the discourse was usually necessary; thus, extracts selected as examples of historical contradictions are generally long so that this full context can be comprehensively understood. Thus, a thematic approach with elements of discourse analysis was used and suggestions for further 'cues' or themes derived inductively. Below is an example of coding nodes for primary contradictions. Each contradiction could be broken down into its relevance to the components of the activity triangle (if they were mentioned), i.e. subject, object, rules, division of labour, outcomes, tools (see page ch. 2b). Similar nodes were created for secondary, tertiary, and quaternary contradictions.

An example of the node 'primary contradictions' from the five case schools
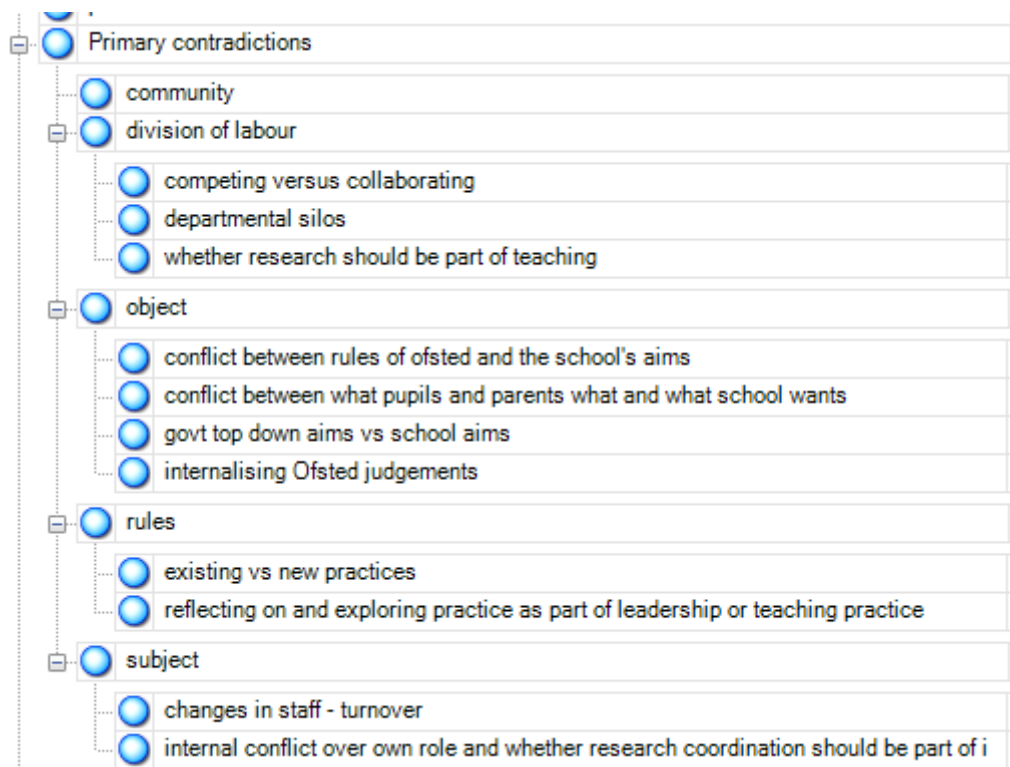
The advantage of using the activity system as the unit of study is that this constructs a boundary for research-engagement practice by which it can be analysed. The school as a research-engaged learning organisation can thus be explored as the collective productive actions of people towards a shared object. It is the object of the activity that gives it meaning and provides the motivation for the actors (subjects). The activity is driven by its systemic contradictions; the irreconcilable primary contradiction being the force of dialectic transformation.

Below, we turn first to the 'mapping' chapters, as outline above in the first stage of data analysis. These have the aim of showing how research engagement is enacted and understood in practice, by staff at the eight secondary school cases. Chapter 4 analyses the responses practitioners gave about engaging in and with research and Chapter 5 compares and contrasts the schools' patterns and levels of research-engagement.

Chapter 4 – Practitioner engagement *in* and *with* research

Below, the findings from the 352 practitioners at the eight surveyed schools are presented. These are supplemented by data from interviews with staff at 5 schools that were followed up to add depth and to illustrate some of the patterns shown in the data. This chapter deals with specific research questions 1.1 and 1.2:

1.1. Why do the practitioners in the case study schools engage in and with research?
1.2. How do the practitioners in the case study schools describe research and what do they 'count' as research?

This chapter also attempts to gauge the extent to which these practitioners represent a 'typical' or 'atypical' sample of teaching staff in terms of research engagement. The last two questions of the survey partially replicated items from a National Teacher Research Panel survey (NTRP, 2011). These assessed the extent to which participants felt that their school showed a commitment to engaging in (carrying out) and with (using published) research. Thus, the NTRP presents somewhat of a baseline by which my sample can be compared.

Schools are represented in graphs using labels and referred to using pseudonyms when mentioned in the text. Labels were designed to aid the reader to identify a key feature of the school, thus C = Comprehensive; Gr = Grammar School; TA, TB, TC, TD and TE = Teaching Schools and Tr = Training School. Pseudonyms where then derived in relation to these labels, thus C = Croxham and so on (see **Table 8** below)

Table 8 Key to labels and pseudonyms

School pseudonym and label	Key Features
Croxham (C)	Comprehensive
Greenmead (Gr)	Selective Grammar
Ashbury (TA)	Teaching School
Barnfield Community (TB)	Teaching School
Carlton High (TC)	Teaching School (in partnership with another school)
Durston High School (TD)	Teaching School
Evergreen High School (TE)	Teaching School
Trinity Green (Tr)	Previously a Training School (designation no longer exists, replaced by Teaching Schools initiative in 2010)

Engagement *with* research

In the NTRP survey, *32% said that their school used research to inform many aspects of its work compared to 39.2% in this sample.* Given the self-selected nature of the NTRP's online survey, it is likely that those responses where already biased towards teachers who had a stronger than average interest in research, and may have come from schools that were more likely to support such activities (see **Figure 8**).
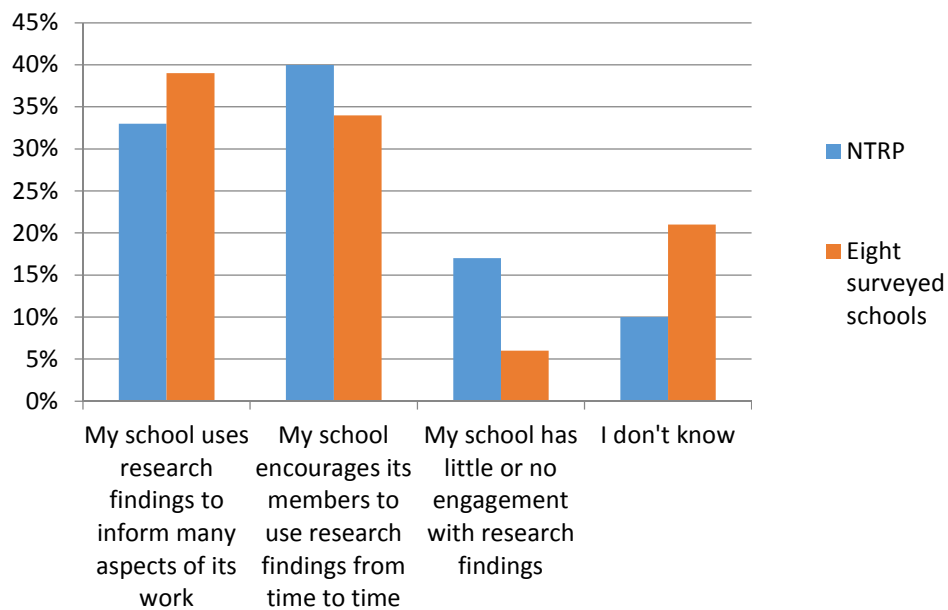
Figure 8 Considering the use of research summaries and articles, which one of the following most applies to your school?

Therefore, responses from those at Trinity Green School, where 83% chose this statement, and at Greenmead, where 65% agreed, appear to show schools that are using research findings significantly more to inform their work than might be expected at a 'typical' school. By contrast, responses from Croxham School (where only 10.9% agreed with this statement) may indicate a school that is less than typically research-informed (see **Figure 6**).
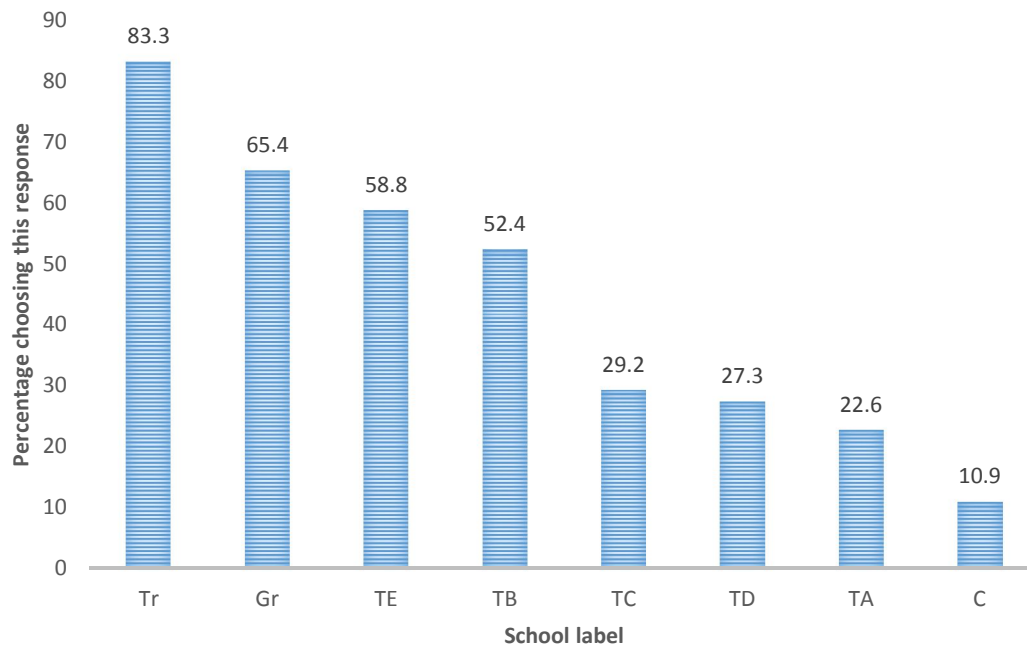
Figure 9 'My school uses research findings to inform many aspects of its work'

Engagement *in* research

In the NTRP sample, 38% said that their *school carried out research to inform many aspects of its work* compared to 33.5% in this sample. At Trinity Green School nearly 80% agreed to this statement, showing a very high level of commitment to carrying out research to inform decision-making. Responses at Barnfield and Greenmead (around 50%), also show a relatively high level of agreement if the NTRP survey is taken as a rough baseline. Using this same measure, schools Ashbury, Croxham and Durston appeared to be less than typically focused on conducting research to inform their work (see **Figure 7**).
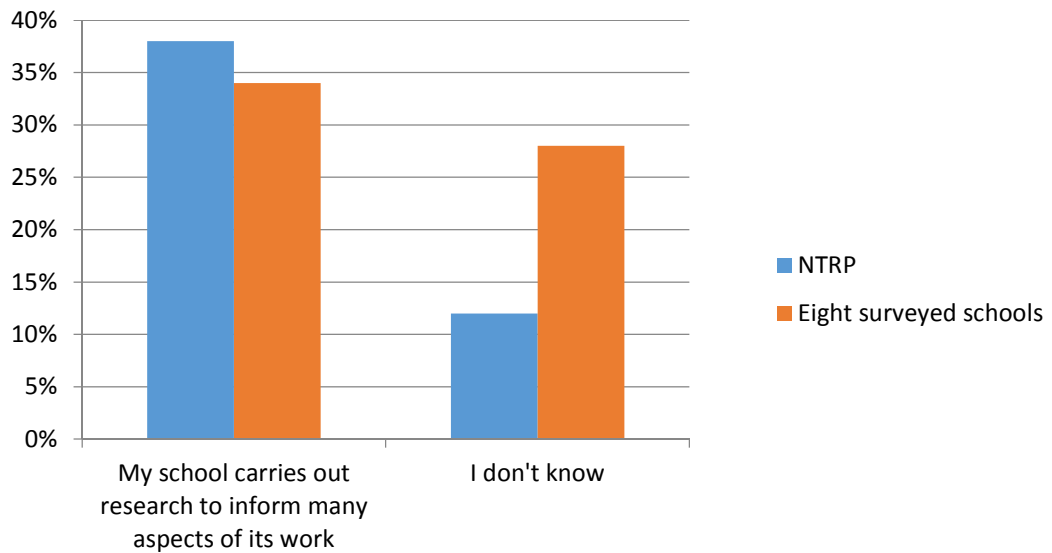
Figure 10 Considering involvement in carrying out research, which one of the following most applies to your school?

In the NTRP survey, 23% said their school had little or no engagement *in* research compared to 5.7% in this sample. There were about twice as many 'don't know' responses compared to the NTRP sample, which may reflect the relatively more senior composition of their sample. Other parts of the scale cannot be directly compared as different descriptors were used between the surveys.

Conclusions from this section and comparison with the NTRP survey:

Partial replication of these questionnaire items from the NTRP survey, helps give a sense of just how research-engaged the surveyed schools were perceived to be, compared to a pre-existing baseline - albeit with certain differences in the samples[16] of teachers from around the same time period in England. Percentage agreement with the 'top' statements, i.e. '(engaging in or with research) to inform many aspects of its work', gives an indication of which were the most thoroughly research-engaged schools. Clearly, percentages have greater meaning where a larger proportion of the teaching staff responded to the survey (especially schools TA, Gr, TB and Cr). Further understanding was also gained where follow-up interviews were able to clarify certain aspects of school practices and culture (in the case of schools TA, TB, TC, Tr and Cr). These 'overall' responses are not an aggregate of preceding sections on the survey; nevertheless, later section by section analyses, while presenting a more nuanced picture, generally correlate strongly with responses to these two questionnaire items.

Why do the practitioners in the case study schools engage in and with research?

Motives for engagement *in* research

Individuals' motives for conducting school-based research can be broadly categorised as being extrinsically or intrinsically determined.

Extrinsic motivators included the desire to complete an accredited qualification, further career development or work on a key school improvement target. In some cases, teachers were strongly encouraged to pursue research for one or more of the above reasons. Other external stimuli included using research to focus on Ofsted-judged areas for school development, learning how to implement national

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[16] The Nation Teacher Research Panel survey (NTRP, 2011) was sent out to teachers across the phases (Early Years (4%), Primary (25%), Secondary (42%) and Learning and Skills sector (29%)). Their sample size was 1080. The NTRP survey was strongly biased towards highly experienced teachers and senior post holders, more so than this survey. This survey included a more representative group of teachers, in terms of seniority level, although still under-represented TAs. The NTRP sample included more teachers with a Postgraduate qualification.

teaching and learning strategies or carrying out enquiries as part of a larger research projects. Accreditation included studying towards Master's qualifications and also levels of TLA practitioner enquiries (in the case of Trinity Green School especially). At Croxham, research bursaries were awarded (through interview) to staff, usually in middle leadership positions and these gave additional routes to career advancement. Ofsted criteria often formed external stimuli for research efforts, too, such as in Carlton High School's literacy project. Other projects opportunistically took place due to the existence of external funding sources, such as Ipad projects at Croxham and laptops for pupils at Trinity Green.

Connecting to the 'wider knowledge base' was also seen as a motive. This was the case of another teacher at Trinity Green, Justine:

> *"Well I really do think it is because it [research] helps you to continually develop and also feel like you're part of a bigger picture. Because you can get so stuck into going from period one to period two to period three without seeing the wider picture of, this is the education of society, what does that look like as a whole? And unless you feel part of that bigger picture or that meta-story, you can become very narrow and just in the day-to-day grind. You know, they say teaching is a worthy occupation but if you're getting annoyed by the kids and it's just going from day-to-day then you don't feel that you're doing anything bigger than what you are. And that is why lots of teachers end up doing things like working for the government or working for – because they feel like, "Well I actually want to do some good now," whereas if they were doing that back in the classroom and feeling like they were part of that then there would be no need to move on to other things."*

This mix of desire to connect to a wider knowledge-community and an interest in values in education, provides an illustration of where, in most cases, the desire to research was, at least in most cases, clearly a combination of intrinsic 'pull' to research with an extrinsic 'push'. The latter provided a motive to complete the research by a certain date, for instance to meet a dissertation or course deadline, or to conduct the research using a particular methodology, and sometimes towards a prescribed end.

In others cases, such as Daniel at Trinity Green, research was motivated by listening to a speaker who came in and talked passionately about an issue that related to practice (philosophy for children). This led to trying out new ideas in his classes.

Another strong strand was the desire to connect research to clear improvements in practice. This appeared to be one of the strengths of Barnfield Community School's Action Learning Sets (ALS) programme, where published research was related to aspects of practice and then ideas were trialled in the school. This connects very strongly with findings about the differences between what researchers and teachers want from their research efforts as reported in the context of PDSs in the USA.

Given the lack of an *a priori* definition of 'research' either on the survey itself or in later interviews, participants' uses of the term 'research' were thematically explored. Overall this is broken down into the purposes of research and the boundaries that practitioners placed on what they considered to be 'proper' research.

The purposes of research for the schools

Beyond the range of individual motivations for conducting research, the examples of research conducted by interviewees tended to have one of **four general purposes** (for fuller descriptions and examples (see appendix 11).

1. Refining research or strategies for the specific school context

Responses often reflected the incompleteness of research outputs for the specific context of the school, especially the perception of the student body. Thus, teachers refined or rejected aspects, 'tweaked' strategies and translated actions into more appropriate ones for their school. Many responses reflected Lawrence Stenhouse's view that published research should be seen as a hypothesis to be tested and explored, rather than a 'truth' that can be unproblematically implemented.

2. Developing and improving practice

The primacy of developing existing practice came across very strongly in some of the interviewees' responses. These often reflected 'Mode 2 knowledge creation', in that they started with a problem of practice, such as how to improve some teachers' practice in teaching literacy. In some cases, there was a desired end in mind for students; in other cases, a practice that had worked in one context was developed to see what further impact it could make with a wider group. However, the causal chain of impact (theory of action) was generally neglected in the examples given by participants.

3. Exploring ways of doing things and trialling strategies

In addition to trying out new ideas, many gave examples of how research was a cyclical process of implementing a new practice, gathering evidence and reflecting on impact. For example, Mike at Carlton High:

> *"I mean I would class practicing something, seeing how it worked and getting someone else to try it as research. Whereas other people might not. I don't know if you would. But that's what I would think, you're trialling things, you're adjusting, you're feeding back, you're making a note of it and then you're passing it on in a different way."*

While not obviously rigorous in its methodology, Mike's description approximates ideas of 'reflective practice' or 'action research'.

4. Evaluating impact of strategies (whether new or existing)

There were several references to the word 'impact' and finding out 'what works and what doesn't work' from within interviewees' transcripts. The immediacy and importance of demonstrating 'impact' was apparent throughout the interviews. However, the impression is given that the evaluative process was often superficial, little more than a brief reflection or discussion with colleagues:

> *"and you come back and comment on them and decide what worked well and what didn't work well."* (Julie, Carlton High)

This raises the issue of the usefulness of such shallow conclusions being drawn about the impact of new strategies and to whether this type of example could be 'elevated' as a piece of 'research'.

Examples show a mixture of what might be considered action research, R&D (broadly speaking), case studies and informal or formal experiments, evaluation or evaluation research. The collaborative aspects of many examples (e.g. ALSs/Lesson Study) were also often taken to be examples of research, rather than distinguished as JPD or PLCs, for example. This does not mean that teachers themselves were uncritical of the methods they used or that all staff defined research in a consistent manner.

How do the practitioners in the case study schools describe research and what do they 'count' as research?

Were these school practitioners doing 'proper research'?

The arguments below represent my interpretations of practitioners' (mostly teachers') own ideas of what research meant to them. The decision not to define 'research' at the outset, either in the surveys or for the interviews was deliberate. This was for two reasons; first, the term research is difficult to define (succinctly or otherwise) and covers a very broad range of methodologies. Secondly, any definition would likely steer participants towards particular examples and 'prohibit' others from emerging in discussion which may be useful and relevant. Having left this subject open, it then became an area of secondary analysis.

UNESCO (2002) defines R&D as:

> *"Creative work undertaken on a systematic basis in order to increase the stock of knowledge, including knowledge of man, culture and society, and the use of this stock of knowledge to devise new applications. The term R&D covers three activities: basic research, applied research and experimental development."*

This definition sets the focus on knowledge discovery (or production or creation etc.) as being the prime determinant of whether an activity can be considered to be 'research'. This also reflects the broad range of what participants in the case study schools 'counted' as research. These included looking at others' practice (and trying to emulate it), reading a body of work by an author and understanding an educational or pedagogical philosophy or principle. Such notions are much broader than fundamental versions of 'evidence-based practice', which tend to suggest a hierarchy of research methodologies for discovering 'what works' (for a discussion of this, see Nutley, Powell and Davies, 2013). Furthermore, the question 'does it work at all?' was not generally of interest to practitioners, rather there was an assumption that there must be some validity to what others (academics or other practitioners) were apparently doing or writing about. Thus the question, 'how do we make this intervention work most effectively?' was often of most importance. The importance of sharp distinctions was often secondary to the practical limitations of the work of school staff, thus 'fuzzy' distinctions between 'enquiry', 'evaluation', 'development', 'reflective practice' or even 'CPD' emerged in interviewees' responses. While practitioners often valued 'proper' research, this was sometimes a way of simply distinguishing anything that they had done as a practitioner from the work of an academic or university. In a sense, whether activities were defined as 'research' were also a reflection of the school's professional culture (see chapters 7 and 8).

Systematic enquiry made public

Where interviewees asked for clarification about what I meant by research, the response I gave was that research is sometimes defined as 'systematic enquiry made public', referring to Lawrence Stenhouse's (1981) well-used, and broad definition, which has been further broken down into component parts (e.g. Wilkins, 2011b, p. 10). Examples of many of these aspects were mentioned by participants (for a fuller description of this aspect, see appendix 12). For some, the authenticity of the 'research' was often a key concern. For instance, this entailed talking to the 'right' people, for Lee at Trinity Green, for instance, talking to the librarian about children's reading patterns. Timescales for research were clearly determined by either phases of the school year, or the need to resolve a practice-based issue of concern.

Teachers and other staff frequently approached their 'research' systematically through the use of data collection instruments, techniques or principles familiar to traditional, academic research. These included using surveys, interviews and focus groups, benchmarking and auditing current provision; comparing groups; interrogating data, evaluating impact of different strategies; using control groups, applying theory and hypothesis testing. In terms of ***making research public***, this was achieved by:

- Delivering workshops and seminars to other staff at the school
- Presenting findings at a formal research/professional development event at the school
- Writing a short report (this was the exception rather than the rule)
- Sharing findings in departmental meetings
- Informal sharing through discussion with colleagues

While no exhaustive investigation was made of this aspect, the impression given from interviewees was that research was not shared in a manner that allowed for intensive scrutiny of the methodologies or underlying assumptions or theories of their enquiries. Nevertheless, sharing in itself was seen by many as important for an activity to be defined as research.

One feature of participants' descriptions of the research process was the influence of their own subject disciplinary background, each suggesting different interpretations of the meaning and standards applied to 'research' (for a fuller description of this aspect, see appendix 13). For instance, science teachers mentioned the use of statistical analysis of quantitative data and a more obviously 'positivist' research paradigm, including the discovery or confirmation of 'facts'. Others suggested and recognised the need to consider social science and humanities traditions to research. For instance,

> *"An artist researches other artists. That influences what they do. That's research."*
> (Rhys, an English Teacher at Ashbury School)

One interesting element in this definition of research is that there is no longer a clear distinction between engaging *in* and engaging *with* research. This observation has been made elsewhere in the literature (Nelson and O'Beirne, 2014).

Nelson and O'Beirne (ibid) highlighted the way that engagement *in* research is complementary to the act of engaging *with* research - an incentive to conduct a literature review for example. However, in the above example, the act of reading about others' work, was in itself an instance of engagement *in* research and was thus about interpreting the work of (expert) others to transform the practitioner's own practice.

Conclusions. Teacher engagement *in* and *with* research.

Overall, the analysis of teachers' engagement *in* and *with* research revealed four key outcomes:

1. A lack of a shared and 'clean' distinction between research and other types of activities, such as professional development
2. That separating the conduct of research and 'use' of research was often difficult to achieve from teachers' descriptions
3. The subject disciplinary background of teachers influenced the way they tended to view research
4. Most research was clearly linked to either school improvement or personal development (more often combined)

In terms of point 1, there is some support here for the notion of knowledge production following a 'post-modern' trend in the way Gibbons *et al* (1994) have described. In other words, the steer towards producing 'useful', context-based knowledge means that elements of traditional research, such as peer review, publication or clear methodological determinants of quality, were under-emphasised. However, the fact that respondents often turn to disciplinary paradigms to frame their understanding of research also suggests that, at times, they saw these as offering useful guidelines that helped them, for instance, to determine the course of action in their research designs or in their understanding of the extent to which their findings could be generalised.

In relation to the second observation, the distinction between engaging *in* versus *with* research might be better conceived of in other terms than the 'conduct' or 'use' of research. Referring to work by Barnett and Coate (2004), Leat, Reid and Lofthouse (2015) suggests a different taxonomy based on the notions of 'knowing', 'acting' and 'being'. The domain of knowing would equate to engaging *with* research and are concerned with the acquisition of key knowledge in relation to an issue. The domain of acting would equate to engaging *in* research, and would involve using research skills, managing and acting on data, conducting surveys and so on. There would also be an additional level to engaging *in* research, which would be to do with personal growth and identity as a teacher and member of the community of practice. As Leat, Reid and Lofthouse (ibid, p.272) state:

> *"This is a socio-cultural interpretation of the implications of engaging in research, which implies an importance for the discourse and culture prevailing in many schools, which are influenced by policy imperatives."*

Leat and colleagues (ibid) also go on to point out the repercussions for research in developing teacher agency, a point that I will return to in Chapter 8. In terms of the final point about the purposes of research; while there were occasional reflections on how research helped to fit the teachers' practices into a wider knowledge base, there were few overtly 'political' aspects to teachers' research. Thus, most were either 'personal' or 'school improvement' focused, to bring out the other two purposes identified by McLaughlin, Black-Hawkins and McIntyre (2004, p.7). While the precise definition of a 'political' purpose to research may be hard to discern, there may also be an indication of the extent to which teachers'

professional autonomy has changed since the times of Lawrence Stenhouse. In the latter case, teachers were involved in experimenting with the curriculum itself and less concerned with performativity, standardisation and a punitive accountability system.

Chapter 5 – Patterns, intensity and stages of research engagement at the eight surveyed secondary schools

The intention of this section is to broadly 'measure the extent to which the surveyed schools had developed a culture of research engagement relative to each other'. Participants' responses also reveal something of the nature and patterns of research engagement according to the five categories of the survey. These were:

1. Values, leadership and culture
2. Support systems for engaging in and with research
3. Research activity
4. Impact
5. Sustainability

This section thus deals with the last of the specific research questions relating to the first broad question about the distinguishing features of the case studies of research engaged secondary schools, i.e:

> *1.3 What different patterns, intensity and stages of development of research engagement can be discerned at the case study schools?*

Comparison are made to other research, statistics or surveys to assess how typical such a set of responses might be. Although most of the evidence was adduced from the survey responses, a first sweep of the interview data from the five schools that took part in this phase helped to illuminate and clarify some aspects of the responses. The survey included several sections for teachers to elaborate examples to illustrate closed responses and comments. These qualitative responses helped to build a more detailed picture of the research activity and culture of the school. Only in the five case study schools, however, were the full implications of these data explored, the survey helping to identify which schools would be targeted for interview visits. Therefore, each section is dealt with below fairly briefly in this chapter (see appendix 14 for fuller details of survey responses).

Values, leadership and culture

Questionnaire statements 8-15 focused specifically on the extent to which engagement *in* and *with* research was encouraged at individual, departmental and whole-school levels and the extent to which it was encouraged by senior leadership (see **Figure 8** below). The last two statements were about whether the school '*encouraged challenge and learning*' and the extent to which it had a '*collaborative ethos of professional learning*'. Comparisons between groups were facilitated by converting strongly agree, agree, disagree and strongly disagree into mean scores where responses were assigned values of 2, 1, -1 and -2 respectively. 'Don't know' (or missing) responses were excluded from analysis

Regarding encouragement to engage *in* and *with* research:

Overall, the perception was that schools encouraged engagement with (published) research slightly more than carrying out research. This difference was particularly noticeable for research engagement directed towards whole-school development. In other words, carrying out research to inform whole-school development, appeared less common than reading and using published research. Equally, teachers were more likely to carry out research for their own CPD than for either departmental or whole-school purposes. Respondents from schools Greenmead, Barnfield, Evergreen and Trinity Green showed the strongest level of agreement with statements regarding encouragement to engage in and with research.

The perception that respondents' schools encouraged them to carry out research as part of their CPD was strong across most schools, although Ashbury and Croxham had noticeably the weakest level of agreement. Similarly, engaging with research for CPD was weaker at these two schools.
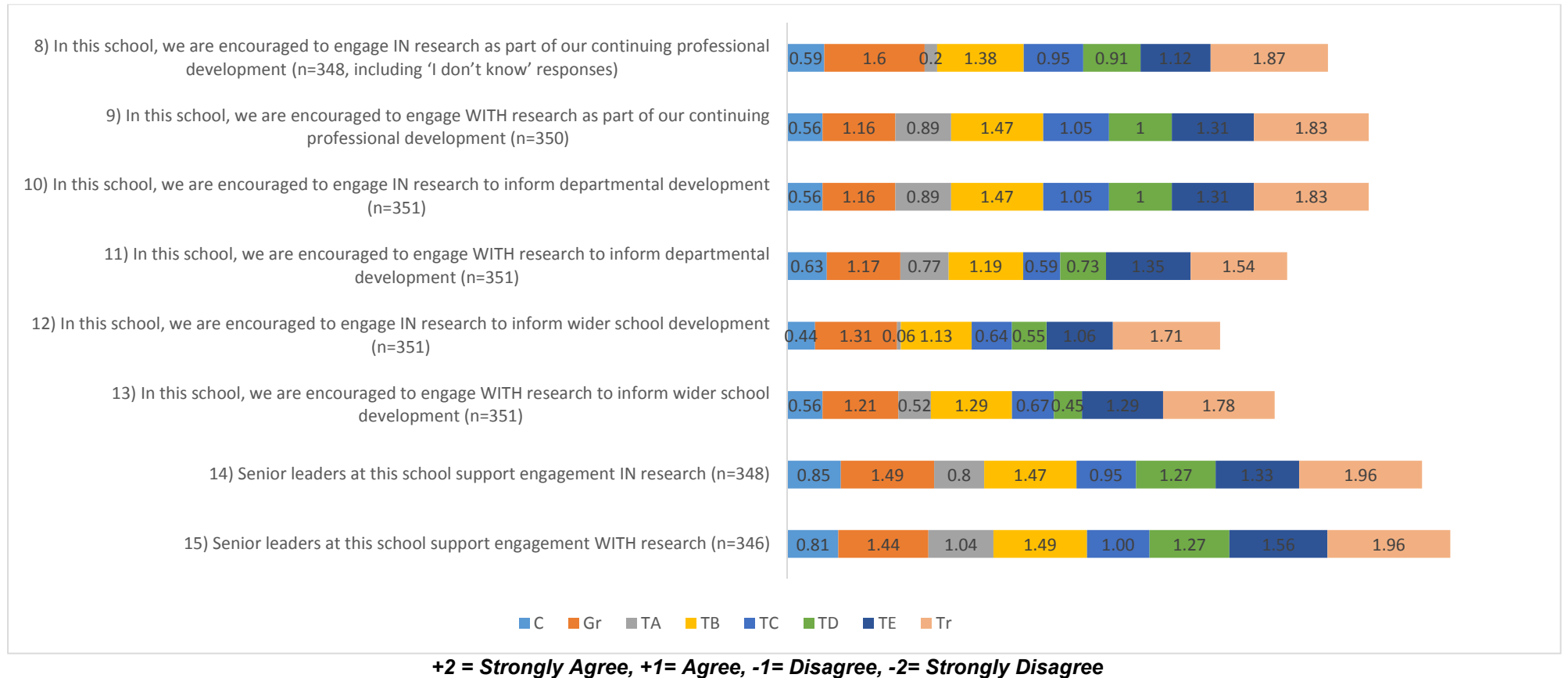
Figure 11 Mean agreement for statements about encouragement to engage *in* and *with* research

+2 = Strongly Agree, +1= Agree, -1= Disagree, -2= Strongly Disagree

The overall culture of professional learning:

Regarding whether the school 'encouraged challenge and learning' and the extent to which it had a 'collaborative ethos of professional learning' (statements 16 and 17 – see **Figure 9**), agreement was strong across the surveyed teachers, with an average level of agreement of 1.58 and 1.47 respectively. Croxham had the lowest agreement on both statements; in particular agreement was low for having a collaborative ethos of professional learning (0.8), albeit 'agree' was still the modal response.
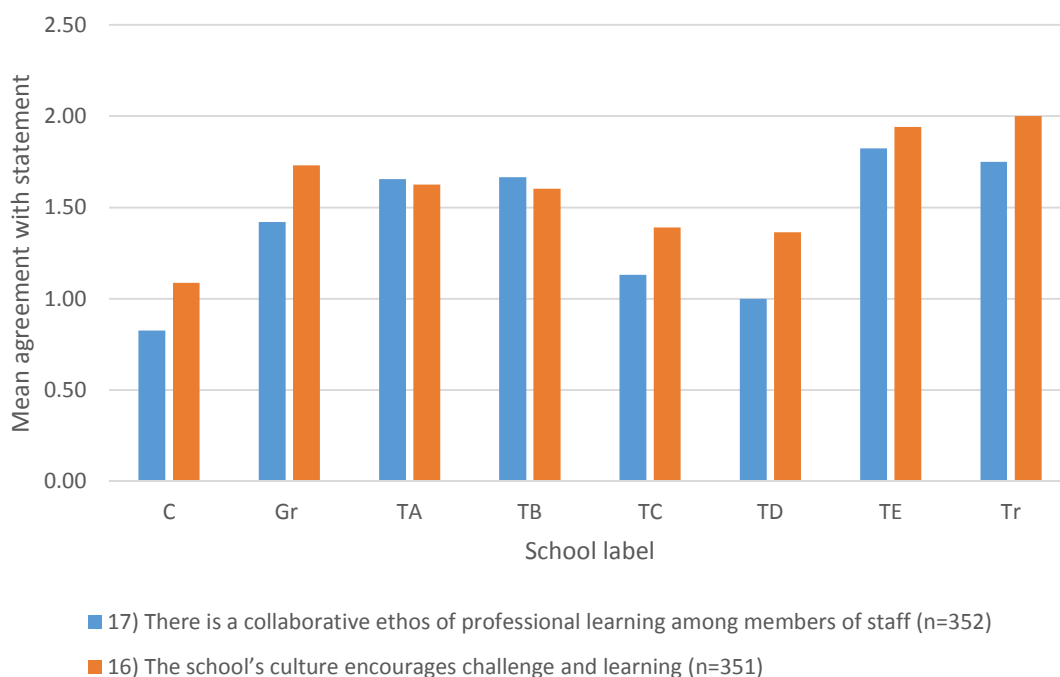
+2 = Strongly Agree, +1= Agree, -1= Disagree, -2= Strongly Disagree

Figure 12 Mean agreement to statements 16 and 17 on the survey on the professional learning culture of the school

+2 = Strongly Agree, +1= Agree, -1= Disagree, -2= Strongly Disagree
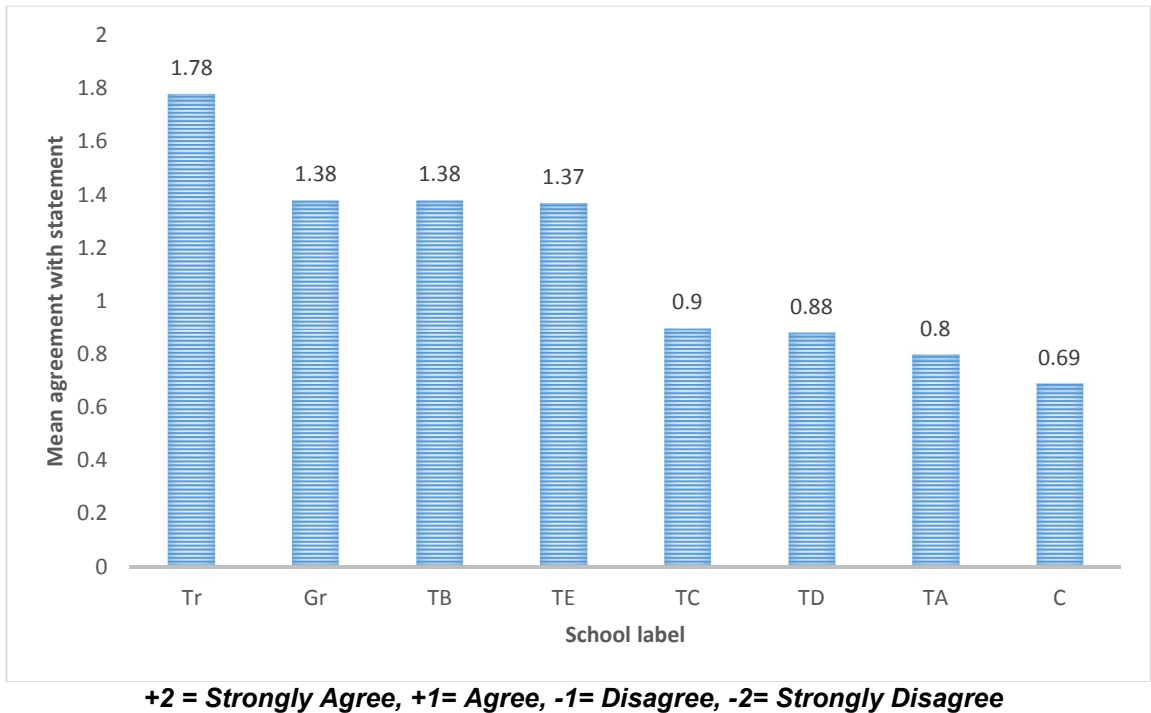
Figure 13 Overall mean response across the 10 questions on values, leadership and culture

Four schools (Tr, Gr, TB and TE) had high levels of agreement to statements in this section. Respondents from Trinity Green agreed most strongly that the school encouraged teachers to engage *in* and *with* research. While for this section overall agreement was lower in the other four schools, teachers at three of these (TC, TD, TA) did, nevertheless, agree relatively strongly that the school's culture encouraged question and challenge and that there was a collaborative ethos of professional learning. Croxham is notable in that teachers agreed more weakly to these latter statements as well.

Support systems for engaging *in* and *with* research

This section looked at: whether time was made available to engage in research; access to research-based resources; mentoring support to engage in research and access to sources of research expertise to advise the planning, conduct, analysis and interpretation of research.

Overall comparison by school on support systems for engaging *in* and *with* research (mean percentage 'yes' responses)

A clear picture emerged from the survey on this section, with Trinity Green School rating very highly for the time, access, support and expertise available to guide research activity. Greenmead respondents were also very positive about these indicators, mostly agreeing that there was a system to encourage research activity at the school. Just over half of all respondents at Barnfield and Durston (albeit from relatively few respondents at this school) agreed with statements in
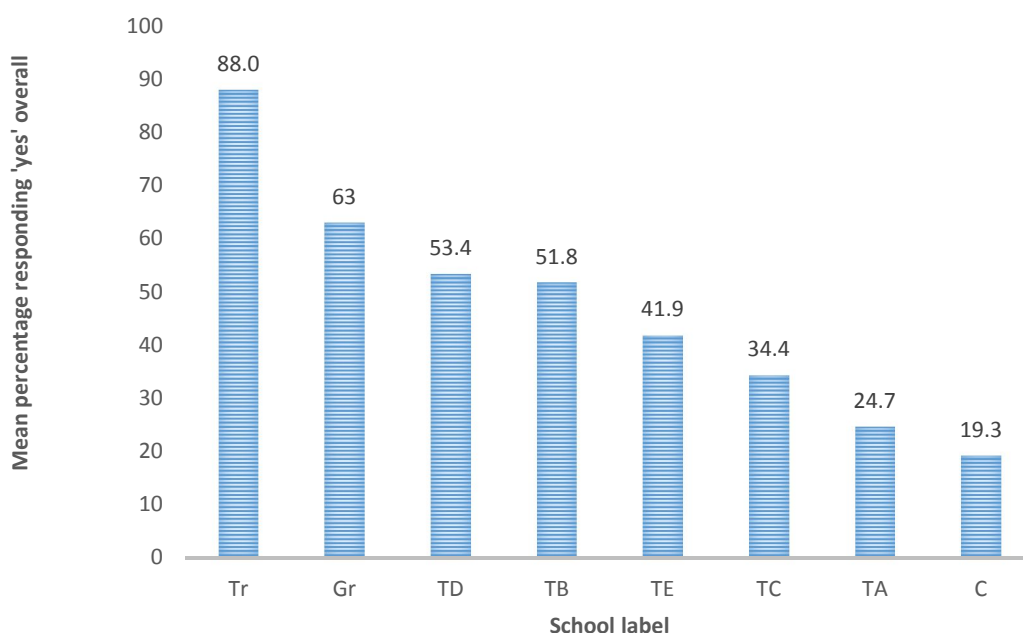
this section.

Figure 14 Mean percentages of respondents responding 'yes' to statements about their schools engaging *in* and *with*

Research activity

This section was the most wide-reaching on the survey, covering: systems for encouraging research; involvement in research; accreditation of research and links with universities and research-based decision-making. Examples are aggregated across the schools here and later case studies at five of these schools give richer examples (see chapters 7a-e). **Table 9** shows the number of references in the survey to the various types of research involvement.

Table 9 Types of research activity cited in survey and interviews (For a more complete summary, see appendix 15).

Type of research involvement	Number of References
Mentoring, supervising and coaching	52
Carrying out a research project	47
Participant in research	46
Contributing data	42
Participant in joint research	19
Leading a research project	18
Participant in external research project	15
Involving students in research	4

Around 15% of the participants had been involved in mentoring, supervising and coaching. Around 13% of the overall sample gave examples of specific research projects they had carried out and approximately the same number had been participants in research or had contributed data to research. Respondents were able to identify more than one of the above, so these responses were not mutually exclusive.

In terms of research projects carried out by respondents, a rich variety of examples were given that covered: pedagogy, teacher training, research aimed at students with special needs, projects with whole school relevance and projects that were carried out in partnership with universities, other external agencies or with other schools (see appendix 9 for full list).

Examples of research-informed decisions were numerous in the survey and also at follow-up interviews. Analysis of responses across the whole survey show eleven main categories of examples given in order of frequency with which they were cited (see **Table 10**). There is an overlap in that some of the teaching and pedagogical changes were also implemented at a whole-school level, although it some cases it was not always clear.

Table 10 Examples of decisions taken on the basis of research evidence (for a fuller summary, see appendix 16)

Type of research-based decision	Number of references
Teaching and pedagogy (at individual or departmental level)	56
Whole-school changes	42
Pastoral and Special Educational Needs	14
Data analysis	10
Student voice-based decisions	10
Teacher training and professional development	9
Structural and procedural changes	8
Curriculum Changes	6
Use of technology	4
Consulting parents	4
Physical or resource decisions	3

There is a correspondence between the topics of research activity and the focus of research-informed decisions; the most frequently cited examples are teaching and pedagogy, whole-school and pastoral/special needs decisions. However, the extent to which teachers reported high levels of research activity at their school, did not closely correspond to the extent to which teachers at these same schools felt that decisions were carried out on the basis of research. For instance, at Greenmead, where 63.5% of respondents had carried out their own research at the school, and 73% had been involved in research in some way, only 59.6% reported that the school based some of its decisions on research evidence (see **Figure 15** below).
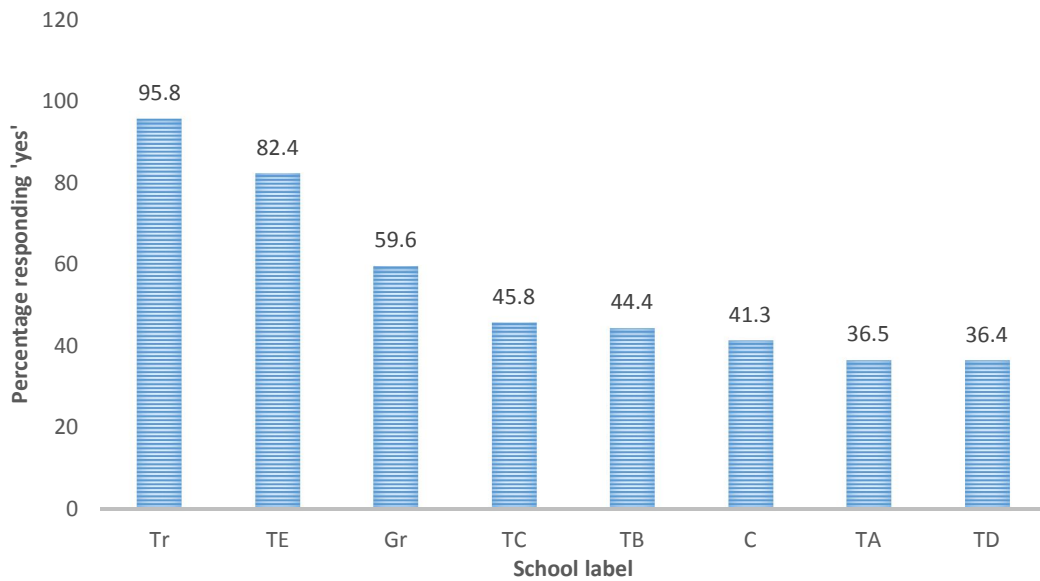
Figure 15 The school bases some of its decisions on research evidence (at any level - individual, departmental, whole-school) (n=351)

A similar discrepancy is notable in responses from Barnfield School where 44% reported that decisions were sometimes based on research evidence while 74.1% had taken part in research and 61.9% had carried out their own research. The reasons for this are not entirely clear at Barnfield, although one respondent at Greenmead commented in the survey:

> *"I think as a school we could be doing more in this direction. Some research is carried out by some members of the school and the results may be used by SLT to formulate future policies but my knowledge of the same is limited. Clearly this is an indication that the school needs to be more open and spend some time briefing staff formally about any research projects/findings".*

In terms of accessing research (engagement with), interviewees mentioned examples of sources they used. These were coded into 11 categories and are shown in the **Figure 13** below.
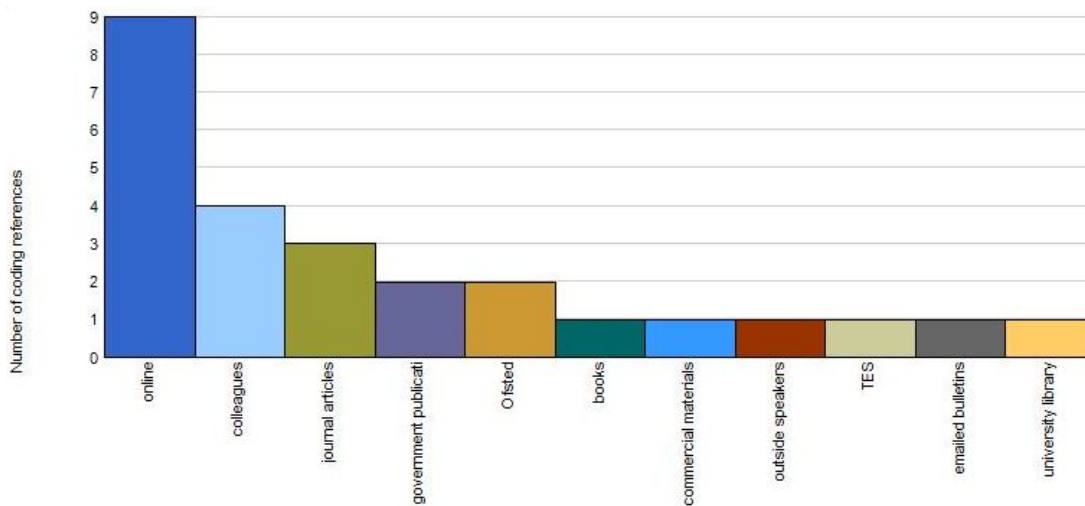
Figure 16 Breakdown by category of sources used to gain access to research knowledge (taken from interviews)

The most frequently cited sources were online and ranged from general 'Google' searches to more specific websites related to Local Authorities or educational theme-bases sources, such as 'student voice'. However, references to reading or hearing parts of colleagues' research that they were doing as part of a postgraduate course were made. These appeared particularly influential in terms of provoking thought about changes in practice. In the majority of cases, research was accessed through secondary sources, and had thus been summarised or filtered for a teaching audience. In some cases, participants (in interviews) assumed that knowledge from authoritative sources such as Ofsted, were based on sound evidence.

One difference between more research-engaged schools and less research-interested schools, appears to be that there is a connectedness between the activities of research and those of practice. Moreover, where decisions are made on the basis of research, teaching staff are made aware that this is the case and, as such, come to value the role that this plays in leadership choices affecting the school. The relationship between research engagement, accreditation and formal links with universities looks rather more subtle. While at Trinity Green, a large proportion of research activity was accredited, this did not seem to be a defining factor. This accords with the NTRP survey's (2011) conclusion that teachers seldom engaged in research in order to gain a qualification. Rather "*professional development and ideas for using in the classroom were the two most commonly mentioned reasons for engaging with research*" (ibid, p. 30).

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Impact

Impact was determined by the extent to which, the school was committed to sharing the results of its research both i) within and, ii) beyond the organisation. Related to the latter point, one of the survey questions asked about, iii) the extent and nature of the school's contribution to research-related partnerships, networks, events or publications.

Some examples of ways in which research was shared within schools are given in **Table 11**.

Table 11 Examples of research shared within the school (from survey and interview responses)

Type of research	Mechanism for sharing	Number of references
Individual practitioner research projects	School 'journal' on website	1
	Teaching and Learning/ Research Sharing meetings	2
	Informal discussion between colleagues	2
	INSET sessions	3
	'Celebration days'	3
	Departmental meetings	2
	Year team meeting	1
	Guidance or recommendations in written form	1
	SLT	1
	Hard copy of report	1
SLT keep abreast of new research	Staff meetings school email	3
Feedback to staff on national research conference findings	Various	1
Sharing with whole-school built into ongoing cycle of research projects that the school promotes based on identified areas of priority	Various	1
Group research project on whole-school relevant research	Various SLT and Governors meeting	2
SLT sharing staff research findings	Recommendations passed on to Middle Management	1

Sharing research was certainly not confined to traditional written report formats, although some efforts were made to get teachers to do this, at Greenmead in particular. At this school, summaries of annual action research projects are published as part of an ongoing series of 'Learning Lessons' articles on the school website. The variety of formal and less-formal mechanisms for sharing research in these schools reflects the description of 'Mode 2' knowledge. That is to say, 'research' knowledge in these schools is often socially distributed, context specific and embedded within networks and people rather than in traditional outlets, such as written academic reports (Gibbons, Limoges and Nowotny, 1997). The mechanisms for sharing research findings in these schools are more concerned with maximising impact on practice or raising awareness than ensuring rigour through peer review.

Sustainability

Sustainability was measured in the survey by awareness of i) a designated member of staff, ii) funding for future research efforts, and iii) training in research skills (see **Figure 14**). "Don't knows" accounted for a high proportion of responses in relation to ii) and iii), making these responses harder to interpret. Intuitively, this makes sense, since awareness of future research funding at the school may be limited to the senior leaders.
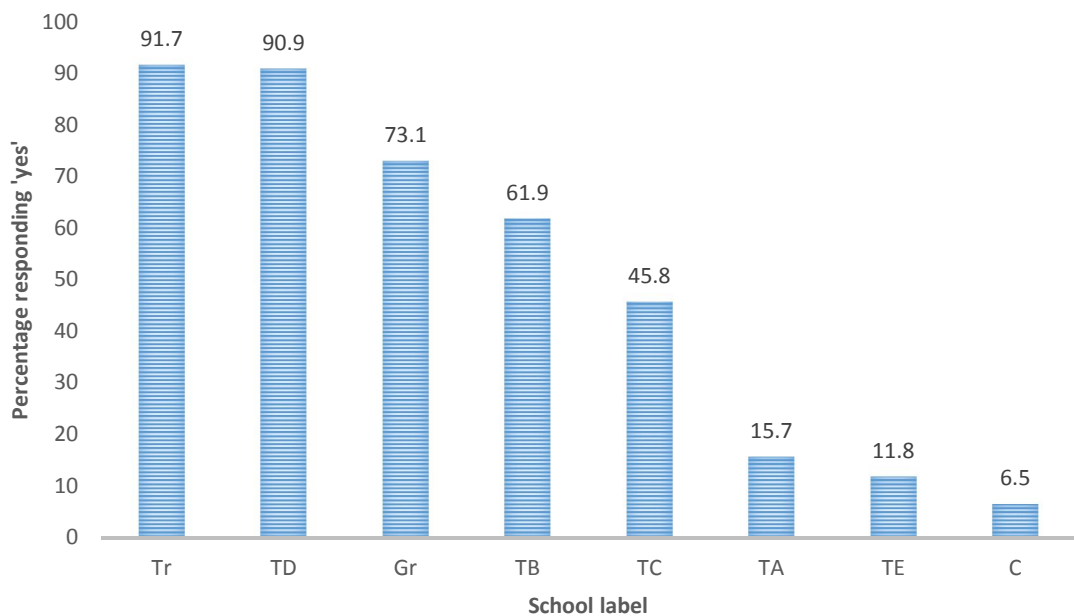
Figure 17 There is a designated member of staff (or members of staff) who is/are responsible for promoting research engagement (n=350)

Sustaining research engagement involves a number of factors; the support of senior leaders is likely to be a crucial one (Sharp *et al.*, 2006a). In this respect, Trinity Green and Greenmead Schools both appear to have advantages over the other schools in that several members of the SLT were identified as having responsibility for promoting research engagement in the school. Barnfield Community School had one strong research champion, who, at the time of writing, had left to work at another school. Where Trinity Green comes out as unique, however, is in the highly developed support network, comprised of TLA research mentors and external consultants, which allowed research activity to continue.

Stages in the development of research engagement

Patterns of very high, high, medium and low response agreement to each section, were determined for each section of the survey. There were arrived at by looking for clusters in the bar charts according to the relevant indicators, for instance mean level of responses to Likert scales and/or percentages responding yes or no. Where particular responses were considered by me to be 'key' these were given more weighting. For instance, in the section on 'activity', responses in relation to the item on decisions being made on the basis of research were given a greater weighting. The section on sustainability was categorised according to answers about the designated research champion only and this was to do with the high degree of don't know responses to the other two items. By looking at the levels of responses to each section, I decided that four stages of development in research engagement were evident; these were: **emerging** (Croxham), **establishing** (Ashbury and Carlton schools plus teaching schools Durston and Evergreen (low response rates), **established** (Barnfield and Greenfield) and **embedded** (Trinity Green)[17]. This is represented in summary form in **Table 12** below which shows how each school responded to each section as well as its placing into an overall developmental stage.

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[17] No claim is being made here that such levels are statistically robust or that the sections of the survey are clustered according to quantitative analysis of factorial independence. The survey was not designed with such decisions in mind and only construct validity was used to determine in its design (see appendix 4). Nevertheless, this is a avenue that may be interesting for the development of this as a survey tool

Table 12 How schools were grouped in terms of their research engagement trajectory as a result of the survey responses

	School	Very high	High	Medium	Low
Embedded	Trinity Green Training School (Tr)	Values, leadership and culture Support systems for engaging *in* and *with* research Research activity Impact Sustainability Overall perception			
Established	Greenmead Grammar School (Gr)	Research activity Impact	Values, leadership and culture Support systems for engaging *in* and *with* research Sustainability Overall perception		
	Barnfield Community (TB)	Research activity	Values, leadership and culture Support systems for engaging *in* and *with* research Sustainability	Overall perception Impact	
Establishing	Evergreen High School (TE)		Values, leadership and culture Impact	Research activity Overall perception Support systems for engaging *in* and *with* research	Sustainability
	Durston High School (TD)		Support systems for engaging *in* and *with* research	Values, leadership and culture Research activity Impact Sustainability	Overall perception
	Carlton High (TC)			Values, leadership and culture Impact Sustainability	Support systems for engaging *in* and *with* research Research activity Overall perception
	Ashbury School (TA)			Values, leadership and culture Research activity	Support systems for engaging *in* and *with* research Impact Sustainability Overall perception
Emerging	Croxham Comprehensive School (Cr)			Values, leadership and culture	Support systems for engaging *in* and *with* research Research activity Impact Sustainability Overall perception

Chapter 6a – Croxham school (emerging): Research engagement for school improvement and cultural change

Croxham School is an 11-18 mixed secondary school, with approximately 900 students, around 43% of which are girls and 57% boys (Ofsted, 2012). It has a smaller than average sixth form and a small specialist base for students with autism. Croxham school is situated a short distance outside London in a large town of over 140,000 inhabitants. At the time of the interviews, there were eleven local secondary schools, seven of which were Academies, two were voluntary-aided (Roman Catholic) faith schools and Croxham was one of two community schools. Four of these schools are academically selective Grammar schools. Croxham, a specialist sports college, has a culturally diverse intake, the majority being of Pakistani heritage and smaller numbers of Indian, White British, Black African and Black Caribbean students. The proportion of disabled students and those with special educational needs is above the average; many of these have behavioural, emotional and social difficulties, or dyslexia. The proportion of those with a statement of special educational needs is in line with the average. A high proportion of pupils are eligible for Free School Meals (FSM) (Ofsted, 2012).

The backdrop of Ofsted and the challenges external accountability placed on the school were a strong feature throughout the period of the survey and interviews. The 2008 Ofsted full inspection graded the school as "satisfactory". As a result of this grade (three), the school received a monitoring visit in November 2010 which concluded that inadequate progress had been made since the 2008 visit. In particular, the report concluded that the quality of teaching and learning was not good, attainment was only satisfactory and that the leadership and management was insufficiently rigorous in monitoring and raising standards. My surveys of staff took place in late 2011 at the school. The school was subject to a short notice (two day) full Ofsted inspection in May 2012 and my interviews with staff took place shortly after this, in July of the same year. This Ofsted report once again graded the school three for overall effectiveness and described Croxham as a "*satisfactory and improving school with a good sixth form*". Subsequently, in an Ofsted inspection carried out in September 2013, the school's grade was revised to 'Good' (two). The Headteacher is described in the report as a 'strong leader'

and its governors as "*know[ing] the school well and provid[ing] good challenge and support, with a clear focus on improving achievement and the quality of the teaching*" (Ofsted, 2013). Students' achievements are described in the 2013 report as 'rising' and the majority of teaching described as 'good' with some as 'outstanding'. Teaching was judged to be good because "*teachers carefully match work to students' needs and abilities*" (Ofsted, 2013).

I contacted the Headteacher of Croxham by email invitation to take part in the survey due to its proximity to my home. I had no prior knowledge of the school or its link with research activity. Margaret, the Headteacher, enthusiastically replied to the invitation and her school was the first school to take part in the survey (October, 2011). Margaret strongly promoted the survey to her teaching staff and they were asked to complete during an INSET day at the school.

There were relatively few recently-qualified teachers at Croxham compared to the average across the sampled schools and a relatively large percentage of teachers surveyed with over 10 years of experience of teaching.

In November 2011, I visited the school to talk to Margaret and a recently appointed Assistant Headteacher to find out more about the school's approach to research engagement. Margaret explained that she had been a Headteacher at the school for two years but this was interrupted for maternity leave. Her first full year was thus from Sept 2010. Unfortunately, an Ofsted visit in her first few weeks on returning to work (November 2010) had resulted in a judgement that the school had made '*inadequate progress in making improvement*' on recommendations arising from the Ofsted inspection in 2008. As a result, the school was due to be inspected again and Margaret was keen to show some improvements to avoid going into 'special measures'.

Margaret also explained that Croxham was a non-selective school in an area densely populated with selective schools, which she said created '*particular challenges*'. The school had a link with a local university to receive PGCE students but had opted out of receiving them for a period because grades of trainee teachers counted towards the Ofsted inspection and Margaret considered this to be too much of a risk given the school's predicament.

As part of Margaret's strategy for developing 'sustained improvement' in response to Ofsted's November 2010 visit, she set up six research bursaries, which were initially to last for one year. Sixteen members of staff applied for these bursary posts. Money to fund this came from funds previously designated for diploma qualifications brought in by the previous government but which has since been abolished.

Margaret gave some brief details about the six bursaries and some of the people involved. One member of staff was taking a hiatus from teaching and was conducting research as part of her PhD. She was clearly valued and Margaret said that she would welcome her back later as a teacher. Another, a sports teacher, aimed to spread good practice about using data to intervene in pupil progress, an aspect which was very good in his department but was not consistently good across the school. Another teacher was looking at reasons why attendance at key stage 4 was lower than other years, and the school in general. Paul, a Physical Education teacher and Head of Year 10, (and one of the interviewees) was doing a study into how to improve 'student voice' at the school. The fifth bursary aimed to improve the school's extra-curricular activities, including careers events and work experience for students. Finally, the "BTEC bursary" was for a member of staff who was designated as the 'quality nominee' in this examination board, and was trying to improve the consistency of quality in the provision of this vocational qualification.

In addition to these bursaries, Margaret also mentioned that she was going to make some minor changes to the structure of the leadership team. The bursaries were described as a way of providing excellent experience for some middle leaders. The motivation for this was based on giving career progression routes and to encourage some dynamism in this part of the school management structure. Early on in her tenure as the Headteacher, Margaret had assembled all staff to decide on a strategy to improve the school, which she termed 'Croxham Plus'. This sounded very much like an 'appreciative enquiry' approach, described by Margaret as a positive discussion about what was good at the school and how to make it an even better place. The overall aims were decided at the end of the summer term 2010 and again on the first day of the autumn term, 2011 and involved all staff at the school.

The school's five year school development plan and subordinate goals for the coming year were all derived from Croxham Plus. While the bursary posts came out of joint discussion, it was Margaret who ultimately decided on their focus and determined who should lead each one. There was a clear and direct school improvement focus to all of the projects. Margaret wanted these to be ambitious in their scope and to set leadership challenges to middle leaders. She was also keen to develop a more open and questioning culture; feeling that this was much needed at the school. She recounted an anecdote about how she had approached a member of staff with a question – the reaction of this teacher was very guarded as they had been unaccustomed to such open questioning of school practice. She wanted the research projects to be instrumental in driving changes to the culture of professional learning, leadership and for all staff to be engaged in the process of continuous improvement.

In addition to the interview with the Headteacher and her Assistant Head, I conducted four formal interviews at the school, in July 2012. I had hoped to carry these out earlier but contact with the school became difficult to re-establish. I found out later from the Assistant Head that this was due to preoccupation with the Ofsted inspection process, having been inspected again in May 2012 and having to deal with the ramifications of the award of another grade three. Below, I outline the characteristics of the interviewees and their pseudonyms:

> **Bob:** The Head of Dance and also in charge of the research bursary which aimed to develop teaching and learning in mathematics, and across the whole school. His ninth year at the school, Bob arrived as a newly qualified teacher (NQT). He also had an associate lecturer role at a local university which involved assessing the quality of feedback that teachers gave to students at a number of schools.

> **Judy:** The Special Educational Needs Coordinator (SENCO) at the school. She had worked at Croxham for approximately 15 years. Her role involved managing provision for all SEN students and overseeing child protection practices. She had recently taken on the line management of a "Nurture Group", which had been recently introduced to give targeted support to a group of students at the school.

> **Paul:** Head of Year 10 and also leader of Dance. Paul had recently won the post of leading a bursary about student voice at Croxham. Paul had worked at the school for 10 years, where he started as a teacher. He had worked at a number of other schools previously, in the position of a TA.

Sandra: An AST and Assistant Leader of Sixth Form, Sandra also taught English and Media Studies. This was her eighth year at the school and her first permanent post as a teacher, having arrived from Australia at the age of 22. Sandra had the useful vantage point of having a romantic partner who was an Assistant Headteacher of another local school.

How interviewees described the school as a place to work

The large council estate accounted for a substantial proportion of the intake and there were some particularly acute problems of drug addiction in the neighbourhood. Youngsters who lived across the main road lived in large houses and had a much higher standard of living. However, these students largely attended another school. Judy described their students as coming from this 'Croxham bubble' which ran along one side of this main road. Parents and students were very trusting and supportive, although Judy thought that many had unrealistic expectations of what the school alone could achieve, independently of the home environment. Students were described as being 'needy' but rewarding to work with. This was seen to attract a certain kind of teacher.

> *"We're never going to be a school where if you stand up at the front and are a disciplinarian, you're going to get the same results as someone who really takes the time to get to know the kids and gives them a bit of themselves. I think we see that from the top down; I think that is the ethos of the school and it has to be. You can't work with students of Croxham and not share that ethos because you wouldn't survive and you'd hate it. I think you stay here because you realise how much they need you and it makes your job that much more important. That is shared, because anyone who doesn't share that leaves."* (Sandra)

The selective nature of some of the local schools

A particularly salient feature of the school was the effect that selection at age eleven had on the school and its pupils. The effect of having a school intake of those that had 'failed' the selection tests (11+) to determine entry to the local grammar schools, was one that more than one interviewee felt had an all-pervasive influence over the students:

"I think the pupils have very low self-esteem when they come in. We used to do this work in English, 'A memorable day', when they first started and nearly all of them wrote about the day they got their 11+ results and a big disappointment. That's what they wrote about because that was something they felt. They already feel like failures when they come here. So we have to spend a lot of time building up their confidence, making them feel like they can achieve." (Judy)

Working atmosphere in general

Bob described the changes to the school, brought about by the new Headteacher:.

"Well, I suppose the biggest thing really is progress and achievement; that is the huge focus for any school. My personal philosophy is more about engagement, fun and motivation, because if that's your priority then the kids are going to make progress and they're going to achieve anyway. But in terms of a whole-school ethos, I think the big drive at the moment is progress and attainment. Really it's about making the kids achieve the expected levels of progress."

He commented also on how the policies and structures were now more formally set up, and how professional development was clearer and targeted. He felt that opportunities for career advancement were also there for those who wanted them. The previous Head was viewed by Bob as having favourites who got more opportunities than most and that Margaret, the new Headteacher, was starting a more open and transparent culture. The focus on attainment meant that being held accountable for this was seen as a more dominant feature under the new Head:

"What Margaret has done is as she's come in; she's holding staff accountable for results. So that is really everybody's driving force now. Staff should have been held accountable under the old regime, but it's just the way the old Headteacher was." (Bob)

The school's research engagement characteristics:

At Croxham, fewer staff than at any of the other surveyed schools agreed that its culture encouraged challenge and learning or that there was a collaborative ethos of professional learning. This reflected the Headteacher's view and supported her intention to use the research bursaries as a method for changing the professional learning culture. Perhaps unsurprisingly, as the Headteacher had only that year introduced research activity, few teachers at Croxham felt that there were support systems for encouraging research engagement. Relatively few said that time was made available to engage in research or that there was a system for encouraging research, such as access to research-based resources, research expertise to plan research, or mentoring. Very few agreed that there was a member of staff responsible for research coordination and promotion (a few mentioned the new Assistant Headteacher) and very few felt that training or funding to engage in research was available.

The survey showed that few staff were aware of research being carried out by colleagues at the school and even fewer of it being shared beyond the school itself. Three examples were given of Physical Education projects that the school was involved in as part of its specialist sports status. Two other cases related to a project to which the school had contributed data via a survey sent out by a local, well-known independent research organisation. The majority of the comments on the survey referred to how there was some research activity at the school, but this was limited to a few members of staff and not promoted more generally. Others believed that the school was already doing a reasonable amount in this regard or that the new bursaries would encourage this further. Overall, only 10.9% of surveyed staff believed that the school used research findings to inform many aspects of its work and the same percentage believed that the school carried out research to inform many aspects of its work.

The interviewees were unrepresentative in that they had a more active involvement in research at the school compared to the majority of the survey respondents. Nevertheless, their given examples of research use indicate how they were largely working alone and using their own methods for accessing research, for instance:

"I think there are a few bits in the library, but generally speaking I get most of mine online anyway. It's just easier now with the online journals, I do most of my research online. Also, I use Google a lot, in terms of local authority research, there's so much out there on all aspects of teaching and learning." (Bob)

Paul referred to websites on student voice and Ofsted sources for his own background and Sandra used a combination of web searches and also took inspiration from reading her partner's MA dissertation. None of this reflected any particular research-use strategy at the school.

In the survey, Croxham showed the lowest levels of research activity among its teaching staff, with less than a third of staff having carried out their own research and just over a third having had any involvement with research while at the school. Although the Headteacher had mentioned a longstanding link with a local university, only 28% were aware of this. A lower than average number of teaching staff in the survey felt that the schools based some of its decisions on research evidence (41.3% compared to 49% overall average in the survey).

A variety of examples of research-informed practice were nevertheless provided in the survey:

- Lesson length change
- Department questioning
- Annual bursaries for research and feed-in to school development plan
- Researcg conducted on Independent learning has helped inform to an extent as to where the school is on this particular platform
- Strategies for progression, effective use of lessons plans
- Teacher Training Days - INSET days
- Orchestrating meaningful assessments to reflect on good practice and appropriate interventions
- Extra-curricular options based on pupil feedback
- Data Analysis used to inform teaching methods
- The use of post-learning conversations when coaching/mentoring trainee teachers

However, Sandra presented a bleak view about the school's responsiveness to research and new ideas:

"Pretty much, and with the old Head, he was a teacher geek himself and so he was like, "That sounds great, go for it." But the problem was when you came back in, even if you did feed back to the whole staff, nothing was ever implemented to make anything actually happen in the classroom. It was all

very much, "Isn't that nice? Now let's all go back to how we were doing it before." That's frustrating.

When asked if she felt this had now changed at the school she replied:

"No, I don't think so. I think it is different if what you're sent on [sic] has an immediate impact on either Ofsted or year 11 results. But if it's not immediate in its connection, which of course everything is connected but if it's not immediate, it's not prioritised, because we are running after this agenda and I think quite scared of what Ofsted is going to do and what's going to be said about this. That takes your focus away from the most important part of the job."

According to Sandra, the Headteacher's new research bursaries, far from being about the really important changes that were needed by the school, were of peripheral importance and driven by an external agenda:

"So I think in terms of how the school runs they [the bursaries] were a great idea and they gave lots of people the chance to put their hand up and take some responsibility. I don't think they've been particularly teaching and learning centred. They've been about the things around the outside, so we've had careers, student voice, extra-curricular, attendance, you know, those types of things. They all impact but I wouldn't say they're at the heart of the classroom. So we haven't had a bursary post for independent learning or literacy across the curriculum."

Sandra's view contrasts with the version given by Margaret, of the whole-school commitment to the aims of 'Croxham Plus' arising from a consensus involving all staff. Sandra questions whether research activity would continue to be closely orchestrated by the Headteacher and linked to Ofsted-derived (short-term) improvement criteria.

A further challenge to the development of a new set of cultural norms was the perceived inertia of some of the school's leadership team. Judy reflected on the need for the Headteacher to be very directive and why leadership behaviour was not more prevalent across the school:

"I don't know. Could be where the schools at, given that it's a new Head and she's trying to give us direction. I don't know. Or it could be that some of the senior management were the old senior management? It could be that some people don't want that responsibility to take leadership as well. Bearing in mind the union and action and everything, people are very clear about what their jobs are and not doing anything extra."

Paul had a more optimistic take on the potential for greater distributed leadership since Margaret's arrival:

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> *"One thing I have learnt through things that I have read and some courses and things I have been on, is the most successful schools are the ones that let their middle managers make a lot of decisions and run with things.*

> *"Yes, so the new SLT, they are quite happy for you to start a push on things."*

Such greater optimism may be as a result of having been awarded one of the new bursaries and as such, Paul may have been identified by the new Headteacher for career advancement. Equally, this enthusiasm to take a lead on the student voice issue may be a reason why Paul was selected to take a lead on a whole-school project to start with. Whichever the best explanation, if the research bursary became a vehicle for Paul to rise up into senior management, there would be the potential to affect the leadership and professional learning culture of the school in the way that Margaret had hoped.

The way that research was used a cultural tool was thus central to Margaret's tactical use of the bursaries. However, Judy suggested a conflict in the way that leadership teams may view what is 'research' and what teachers may already be doing. As such, some existing activity may be under-utilised or ignored. Furthermore, Paul revealed the tensions between his wider researching remit and the division of labour and rules of the existing school roles:

> *"I have had some heated discussions with the Deputy Head on this. He says, 'You are in charge of E-Learning, you are not in charge of the infrastructure for things.' I said, 'I understand that, but those things go hand-in-hand.' I have got to make sure the infrastructure is there first, so I am working with the technicians, and there I can put things into place."*

While the research bursary gives Paul some additional agency, it is clear that this is far from uncomplicated and that his own personal investment and drive is quite clearly needed to make anything happen. Paul explains how he holds firm against this resistance:

> *"They are called TLRs for a reason, Teaching and Learning Responsibility, points that it is my responsibility to do it. So the same thing for my bursaries, it is my responsibility. This is the conversation [sic] I had with the Deputy Head was, 'I understand what you are saying, I am in charge of E-Learning. But I am also working with a different department to make sure that, that E-Learning can be as good as possible.'"*

Bob, at Croxham, makes the subtle point that his researching role put him in a difficult situation of being both a 'senior' leader – due to the whole-school relevance of his remit and at times a 'middle leader' due to his official teacher scale designation. This negotiation of his 'power' and authority was as much internal as a reality with his colleagues, as in the example Pauls states above.

The accountability dimension had a strong effect on professional learning and collaboration at Croxham that appeared to have a limiting effect on the power of research as a mediating tool that would open up spaces for genuine professional collaboration.

> "So you try and be enthusiastic and give new ideas and new perspectives and a lot of people would just push you away. You know I had that type of thing where I felt people were avoiding me or trying to not look at me in the face because they have that thing of like, 'You know that I got a bad judgement therefore you think I'm not good at my job and I don't want your help because I don't think that's right anyway.' Then you've got this really poisonous situation where no one will take any help, then do you force people into it, you know, compulsory training? Then everyone will just be even more annoyed and kind of sit through the meeting not letting anything in. Do you make it voluntary and then you get your best staff coming to more training?

> "I don't know what the answer is, but I do know that if you have rigorous performance management and observation which we have to, we're a profession, we have to, then the sad by-product of that is people who don't want development and push it away and just want you to get away from them. They just want to shut their doors and keep everyone on the outside. I would love a school where you could wander into anyone's room and go, 'Oh this looks fun, what are you doing?' But we're definitely not there yet here." (Sandra)

The external inspection system created a series of 'double-binds' in teachers' and school leaders' activity systems that represented a key contradiction; on the one hand they led to a renewed sense of learning and feeling that 'something had to be done'. In the case of Croxham, there was an imminent threat of what a re-inspection might do to the school, especially if it was downgraded or failed to show sufficient improvement from its RI (requires improvement) status. Croxham's bursaries, directed research towards criteria that were clearly dictated by improvement aims that came out of the previous Ofsted inspection. One of the outcomes was a change in the way middle leaders were trained at the school:

> "So, I also think in terms of training, there's lots of training now, because one of the Ofsted criteria was that the Senior Leadership team need to develop the

Middle Leadership team. So, there's a lot more opportunity at Middle Leadership level as well." (Bob)

Bob had to make sure that a key Ofsted recommendation became part of everyone's purpose at the school:

"There is a big [push] obviously at the moment on literacy and numeracy, and everybody has got to take responsibility for that, no matter what subject you are teaching. Then there is academic side, and there is the making sure the pupils make three levels of progress basically. So they are making at least the minimum progress, no matter what department you are in."

The rules of this target were clearly articulated in the language of the inspectorate, taking into account the way that the school would be judged in this respect.

Sandra at Croxham, describes the effect that Ofsted has on the professional learning mentality:

"We are a school under pressure. We're under pressure because our results aren't good enough, we're under pressure because Ofsted are looming, we're under pressure because it's really challenging to teach in this area. It's constant, constant pressure, and as pressure builds, innovation dies I'm afraid."

However, she reconciles this conflict with how leadership is driven by the need to meet Ofsted targets and her own professional isolation:

"But then within my little team, innovation is a huge part of what we do because it keeps you coming in to work every day, and teaching is one of those things where you can change it. You can get the colours out, you can move the desks, you don't have to do things always. So I think innovation on a small scale is probably there but innovation as in like, 'Let's do something really – and change the game completely,' bit too scary [sic] at the moment."

Sandra then finds a way of playing the game, satisfying the demands of leadership, and accepting these as inevitable, but also trying to focus on the pedagogical aspects that are more interesting to her in her work. Her small-scale innovations act as a mini-rebellion against the prevailing culture, although she appears to hold out hope that this situation will change.

Summary of extant and potential activity sytems in Croxham School

Some evidence of previous links to research activity but limited.

Teachers left to educate students in own way.

Teachers left to their own ways of working. Some staff 'allowed' to not change. Research rarely linked to school developments

Student voice insufficient; some links with external bodies (e.g. as part of specialist status in PE)

Educating 'failed students'

Inertia/lack of challenge

Hierarchical but loose lines of accountability

Figure 18 Old/Extant Activity System at Croxham School

Research
bursaries
as
leadership
projects

Tools

New
collaborative
culture, greater
challenge

Ofsted
identified areas
improve. Low
innovation
culture?

Subject

Object

Outcome

Middle
leaders
aspiring
towards
senior
leadership

Rules

Community

Division of labour

Middle leaders
lead change
through 'action
research'.
Imperative
towards open
collaboration

More active student
voice. Little evidence of
further links with external
bodies such as
universities. One teacher
doing PhD on sabbatical
used for school
improvement

Middle leaders cross-
over into whole school
responsibility, less
hierarchical but tighter
accountability

Figure 19 New/Potential Activity system at Croxham School

Croxham's approach to research engagement took place in the context of
'threat' from Ofsted inspection and came from the impetus of a new
Headteacher. This created a new 'need state' in the activity system – hence the
search for a new object. The old system and its remaining elements were seen
by the leadership as having a professional culture that lacked aspiration. Many
students viewed themselves as 'failures' in an area containing selective
grammar schools. Ofsted saw teachers as not challenging their students
enough and leadership had not challenged this culture sufficiently. The research
bursaries were set up as a cultural tool to change the professional culture
towards one of greater challenge and openness among all teaching staff and at
all levels of leadership. These bursaries were directed towards staff who were
ambitious, giving them a new challenge. The aims of the bursaries were largely

dictated by the needs of a school that had to respond to regular Ofsted visits and to demonstrate to inspectors that they were showing signs of moving out of 'requires improvement' status. As a first step towards research engagement, this was clearly limited in scope, i.e. most staff were not directly involved in research, and the focus of this research had been pre-defined by the Headteacher. Nevertheless, the whole-school remit of the research leaders meant that traditional lines of hierarchy were flattening in favour of a more distributed and collective style of leadership. Research leaders also had to negotiate the politics of a sub-culture where some senior leaders did not welcome interference in their defined areas of responsibility. Equally, some teachers had previously been left to operate unchallenged by their peers and remain resistant to change. Therefore the strength of personality of these research leaders and their credibility was as important as the structures themselves. However, the Headteacher's longer-term commitment to a deeper and broader vision for research engagement, one that might bring in new external bodies and involve a great proportion of staff remains unclear. While 'Croxham-Plus' was painted by the Headteacher as a way for all staff to gain ownership of the new school vision, this was not the impression given by other interviewees. The potential for development of future structures to support research to develop such ownership through shared enquiry, was not being fully realised thus far. However, the subsequent removal of 'requires improvement status' (after the data collection period of this research), could release further opportunities and lead to more innovation and less aversion to risk.

Chapter 6b – Ashbury School (establishing). An excellent reputation, a strong professional learning ethos and an emerging research culture.

Background and details:

Ashbury School is an inner-London, Church of England secondary school. A voluntary-aided, newly converted Academy (September 2011); it is an all-girls school up to key stage four, after which it admits some boys to its Sixth Form. The school has a total intake of over 1000, with around 80 boys. Around 50% of pupils have a church affiliation on entry. The school has had specialist status in Performing Arts since 1998 and since 2006 a second specialism in Mathematics and Computing. It also became one of the first 100 National Teaching Schools in September 2011.

By many accounts, the school can be described as highly successful. In a DfE comparison of 'similar schools' it is ranked joint-top out of 55 schools in terms of its GCSE results. The school has been led strongly by the same Head teacher (who was due to retire at the end of 2013) for nearly 20 years. Its strong reputation is evident from its highly oversubscribed admissions figures and in the various positive reports from a number of Ofsted visits. In the 2010/11 academic year, the school was subject to an Ofsted survey visit on the subject of a programme it had been leading on Assessing Pupils Progress (APP). The report highlights the good progress being made by pupils at the school due to the appropriate and challenging targets being set by teachers and comments in particular on how well the numerous students for whom English is a second language progress. The school has also been the subject of another Ofsted best practice case study report, on building successful links with local businesses to improve students' aspirations and achievement (2013). Graded "Outstanding" by Ofsted since 2007, a more recent visit in 2011, concluded that the school would no longer need to be subject to routine inspections as a result.

The school has a wide range of students, reflecting the demographic of the local area, with 61% of pupils coming from ethnic minorities and around half of the

pupils speaking English as an additional language (EAL). The 2007 Ofsted report noted that the school had three times the national average entitlement to FSM, although the academic attainment level of entry into year 7 was well above the national average. A further survey report by Ofsted in 2009 praised the strongly caring and inclusive nature of the school, particularly evident in the help and support it gave to vulnerable students

Initial contact with the school and first impressions

This school was the second of the schools to be surveyed, in October 2012. Questionnaires were completed entirely on paper during an INSET day. After initially having reservations about participation due to high teacher workload, and doubts over benefit to the school, brief discussion of the research aims convinced the Headteacher to actively encourage her staff to complete questionnaires on paper during an INSET day.

Informal conversation with the Head teacher and, to an extent the Deputy Head, suggested that research engagement was not an area that the school had devoted any particular attention to previously – at least not in any systematic way. Therefore, this made this a very interesting case study; a highly successful school that had established its reputation for academic excellence and strong links with external organisations and schools.

One hundred and fifteen teachers, including TAs and the Headteacher responded in the survey, which represented 100% of teaching staff. The proportion of staff on management scales was fairly representative of the survey as a whole, with six teachers on the (now defunct) AST scale, 40% on other management or TLR pay scales. The 14% of responses attributed to TAs represented the highest proportion of any of the surveyed schools. A particularly high proportion of respondents were relatively new to teaching, with over 40% having less than 4 years' experience.

Characteristics of interviewees

Lisa: Lisa had been the Assistant Headteacher at Ashbury since 2004, with responsibility for Initial Teacher Training. Previously an English Teacher and then Head of the English Department, she had worked at the school since qualifying with a PGCE in 1993.

Justine: Head of Mathematics Department, in her third year at the school. She had AST status, although she was not officially employed as an AST at the school. She also had a Masters in Engineering, having graduated as an Engineer initially. Justine had trained at a previous school under the 'Teach First' scheme and had previous experience at two other schools. Her teaching experience was between 5-9 years overall (from survey).

Louise: Head of Social Inclusion which, in her own words, "*deals with all the children for whom learning is interfered with by something that is not to do with their academic ability. So it could be bereavement, relationship breakdown in families, divorce, sibling problems, illness, friendship issues. It could be lack of self-esteem; it could be abuse - we have looked after children with any of those sorts of issues that interfere with learning.*"

Neal: Mathematics Consultant and AST. This was his eighth year at the school. He previously qualified with a PGCE in 1995 but his teaching experience had been punctuated with experience outside of teaching. He had written a script for children's programmes and had previously taught Mathematics at a stage school and also at a private school before coming to Ashbury.

Rhys: English Teacher and Assistant Curriculum Leader for Linguistic and Cultural Inclusion. Half the week Rhys taught English and the other half he supported students with EAL or training other teachers in how to support them. This role also included running clubs and events to foster community cohesion. In the sixth form he oversaw provision for advanced bilingual learners

Tim: Design Technology Teacher. Tim taught Graphic Design from key stage three up to key stage five. He was also Head of Duke of Edinburgh Award at the school. This was his third year at the school. He had trained by doing a PGCE and this was one of his placement schools during the course. As a result, he was later offered a job at the school on qualifying.

How interviewees described working at the school:

Those interviewed generally described the experience of working at the school as very hard work; challenging and also very fulfilling. The impression was of a SLT that led by example and the large team of 20 Assistant Headteachers worked harder than the regular teachers, maintaining an "open door policy" when it came to dealing with day-to-day issues brought up by teaching staff.

> *"….it is like a London school, it tends to be longer hours and harder than other schools in the UK. It's rewarding, the kids are good, the mental stimulation is good, the staff all work hard so you don't feel like you're being put upon because everyone does their bit".* (Justine)

Justine described staff as highly competent and also willing to listen to ideas and discuss changes.

Although the students' examination results at the school were impressive, the impression was not generally one of a 'results factory' or one in which conservatism applied to teaching and learning practices. Indeed, many commented on how "giving something a try" was very much approved of. Teaching to the younger age groups was seen as about producing 'rounded individuals' and focusing on learning, however by year 11, this shifted to a greater concern with examination preparation for several months of the academic year.

Another particularly strong feature of the staff was that many (according to one teacher around 50%) had come to the school as career changers and had qualified through school-based teacher training schemes, such as the Graduate Teacher Programme (GTP) or Teach First:

> *"And I think what that does is it means there are quite a lot of teachers in the staff who have a clearer idea of who they are and what they want. And in terms of fitting into a particular mode of teaching, possibly less malleable, but in terms of bringing creativity, potentially have more to offer".* (Neal)

The school's research engagement characteristics

At Ashbury school, there was strong agreement that there was an "overall culture of challenge and learning" (statement 16 in the survey) and also that there was a

"collaborative ethos of professional learning among members of staff" (statement 17). However, when surveyed about specifically being encouraged to engage in or with research, agreement was among the weakest of the schools surveyed.

Another teacher commented that trainee teachers had to carry out research but that the type of research was dictated by the requirements of the course, rather than by the school. Within departments there were apparently wide variations in how research was accessed, shared or discussed in daily practice. For example, within the Mathematics department, they had implemented a process of sharing good practice and research, based on the Japanese model of lesson study (e.g. Lewis, C., Perry, R., & Murata, A. 2006).

Survey respondents had commented that little time was made available to engage in research (relative to the average in the other schools); few felt that they had access to mentoring or expertise for research. Overall, only around a fifth of the staff felt there was a system for encouraging engagement in research (see **Figure 20** below).
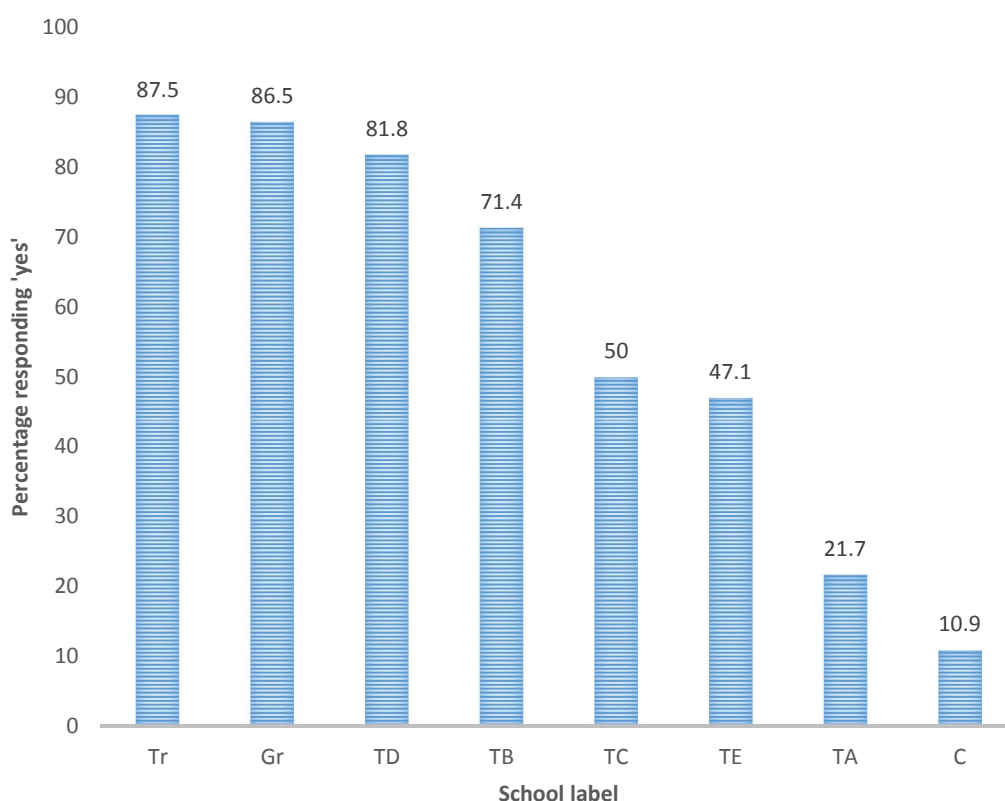
Figure 20 There is a system for encouraging staff engagement in research/ enquiry (n=347)

One comment from Rhys seems to reflect this lack of a system to encourage research activity:

"It's not as if the management of the school is coming to you and saying, 'We think you should be doing research.' Or, 'We'd like you to do research.' Or, 'We're encouraging you to do research'. It's more I really want to do research. I find that for me it's very, very interesting, in terms of improving my ability to teach, but also just improving my mind. But it has come from me, I think.

Although just over 50% of staff had been *involved in* school-based research, and 45% had carried out their own research, only a little more than a third felt that the school based some of its decisions on research (see **Figure 21** below).

The overall perception though, is that research engagement was not systematically promoted, shared or encouraged. Some departments appeared to be particularly actively promoting a research culture, but this was not the case throughout. There were signs that at least some staff were hoping for this aspect to develop at the school:

"It seems that many people conduct informal research and respond appropriately to its findings. However, so many excellent ideas and observations are not shared. Many are relevant beyond the individual/department." (Survey respondent)
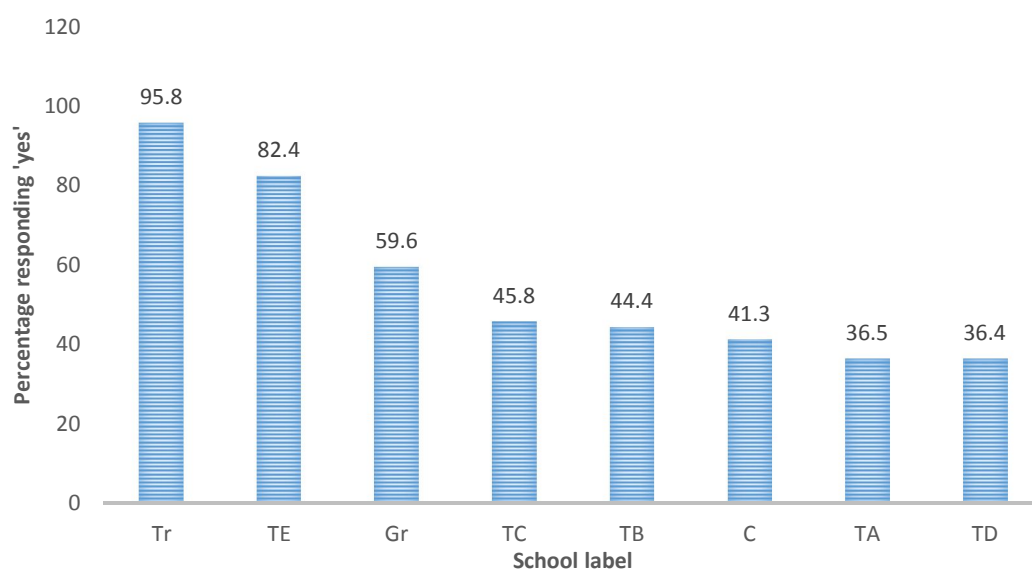
Figure 21 The school bases some of its decisions on research evidence (at any level - individual, departmental, whole-school) (n=351)

A relatively high percentage of those who had carried out research said that their research had been externally accredited (36.5%, the second highest among the surveyed schools) which perhaps reflects the volume of teachers coming through teacher training that included research element. Indeed, most of the examples given of accredited research were those required for Teach First, the GTP or a PGCE. There were also several who had done or were doing research for the National Professional Qualification for Headship (NPQH). The fact that many staff were going through training programmes at the school meant that existing, qualified staff felt the pressure to keep up with their levels of expertise.

Responses from interviewees about the isolated nature of departmental working was echoed in the way that research activity was seen not to be shared across the school generally in the survey. Although the school was not sharing much research beyond its gates either, there was a slightly stronger view that it was involved in research-related partnerships and networks (see **Table 13** below).

Table 13 Ashbury School's responses to statements regarding research-sharing compared to overall results

Items 29-31 on the survey: Percentage responding 'yes' at school vs. overall percentage across all schools	The school is committed to sharing the results of its research within the organisation	The school is committed to sharing the results of its research beyond the organisation	The school has contributed to external research-related partnerships, networks, events or publications
Ashbury (%)	38.3	33.0	38.3
Overall (%)	55.1	42.7	39.0

As one respondent put it:

"I am sure there are teachers in the school engaging in research I just don't know necessarily who they are and what they are doing!" (Survey respondent)

A rich variety of examples was given here of contributions to national research projects, an Ofsted project on APP, many links with local secondary and primary schools, some AST-led projects, such as one on Mathematics teaching at a local primary school and another one on performing arts (reflecting the school specialisms). In spite of this, agreement that the school based decisions on research was the lowest of the case study schools.

There appeared to be no member(s) of staff in charge of coordinating research activity at the school, or at least very low awareness of such a role. A few mentioned the Deputy Head, who himself did not describe his role as such to me. During the interviews, Lisa, the Assistant Head teacher, overall responsible for Teacher Training, mentioned that it might be a useful one to incorporate into her role. It became clear during the interview that this was a very new consideration. Since then, Lisa is one of the two names mentioned as particularly responsible for research activity on their TSA website. Neal, from the Mathematics department, has also been given specific responsibility for coordinating research and encouraging research activity within the school, including use of the lesson study approach that had been pioneered in his department.

As to whether the school has a culture of research engagement, one survey respondent suggested that the high turnover was a barrier:

> *No I don't think there is one [a culture of research engagement] at all. I suppose one of the characteristics of this school which might work against having a common framework is that people tend not to stay here very long, we have quite a high staff turnover. Whether that's because we're in central London and that's partly it and partly we employ people very young so they start building up their career here and then they're, you know, off to other places, I don't know. But there is a high staff turnover and perhaps if there were more settled staff it might be something that could have been developed more. I don't know, I don't know if that's got any impact on it, it's just an idea that strikes me.*

Teaching and learning at Ashbury

Responses to the question at interview about the school's shared ethos of teaching and learning uncovered a primary tension at the heart of the work of teachers in their school community. In Activity Theory terms, this discourse is a search for the 'object' of their activity and reflected a contradiction at the secondary level between teachers and leadership. Among those interviewed at Ashbury were some teachers who clearly enjoyed rich professional discussions about the nature of their practice, and in some departments they reported engaging with published research and using this to challenge each other's

practice. However, even here one respondent suggests the external, top-down influences still held strong:

> *"I think the shared idea of learning comes from what is dictated to us by Ofsted and what's dictated by the national curriculum. I think that's where people will go to. And I think it's a fallacious idea that learning goes in steps like that, where you go from a level two, to a level three, four, five, up through key stage three. Because I personally think learning's quite a chaotic process. But, again, I think it brings up a larger question of whether this is to do with the school, or the system in general. But I certainly would say that we worship the god of Ofsted. So that's where our shared belief comes from. And it's very much senior management will discuss Ofsted, and how to hit targets, and how to make sure we're doing the right things. And Ofsted and recent governments have all been about accountability and making progress. So I think that's where education is in general. And I think that's where our school is."* (Rhys)

Further restrictions to professional autonomy were expressed with regard to an externally imposed change to curriculum: the so-called Personal, Learning and Thinking Skill (PLTS) 'agenda'.

> *"It [PLTS] was, I think it's now probably [sic] not the top of the national agenda and I should say it must be four or five years ago now but I think there are six elements to it. There's investigative, independence, collaborative. There are six titles, six headings, and I think the school year is divided into one heading for each of the six terms. And it's kind of been quite well embedded with students because they have to find evidence that they've performed in each of those six areas and I think they note them down in their plans. And then there's a celebration at the end of the year. Yes, and there's quite a lot of publicity about it."* (Lisa)

Lisa's description of PLTS as 'embedded' appears to rely on pupils demonstrating explicit evidence in their planners. Lisa evokes the idea of 'performing' to the 'six key areas' (publicity), presumably by pupils to their teachers, teachers to school leaders and the school to the outside world. However, Justine describes a rather different reality:

> *"There is no teaching and learning policy. Every department has their own but there is no overarching teaching and learning policy, but this year we've tried to develop one. So I've been working alongside [name of staff member] just to see what's going on. Every department, I think almost every teacher quoted the fact that they wanted students to be more independent enquirers. They wanted them to be – and that was really interesting to see, that was the one thread that went through every single department, they want them to be more independently enquiring about life and about what's going on. And I think that's what people pinpoint on that, 'Aha!' moment, 'Oh, that's really interesting, okay, let's go a little bit further into that.' And that's what teachers want from kids. So*

even though we don't have an overarching teaching and learning policy at the minute, I think that's what people want."

However, at Ashbury, there was also a contradiction between the ideal of educating widely and holistically, and keeping an eye on 'the bottom line':

"The emphasis of a lot of those things [from PLTS], was real life skills and stuff that is useful, but also a higher meta-thinking, joining up the dots and higher-level thinking. There were academic overtones or undertones about intellectual challenge in both of those things. Now one of the reasons our school has picked up on both of those agendas, is because deep down a lot of people desperately want to do this. However whatever you say about, 'We want children to be independent.' Not if it means you're A*-C drops below 85%."
(Nick)

The school as a research-engaged learning community

At Ashbury, interviewees describe how departments worked in silos and ideas about teaching practice were developed mostly in relation to the teaching of their own subject. For instance, lesson study activity was used in the mathematics department, despite the lack of a whole-school promotion of this form of JPD:

"Well people are always willing to sit down and learn from each other. So this year we've started up within the Maths department, I said, 'What about the idea of us all sitting together as a working party to do some teaching and learning, you know, looking at research, pulling things apart.' You know, getting excited about things like lesson study which is a big thing in Japan at the minute. If you're in educational research you'll know about this. So we thought about how within the constraints of what we do can we then do a little bit of lesson study, so we come together – we started in January, met three times since and we meet and discuss ideas of what we could do, we take things away, we trial them, we come back, we hash through them again and say, 'How would I have done that better? What would I have done?' Just that continual professional development, and people are very willing to do that in their free period. There's nothing that said they have to do it but we've got the whole department involved in that." (Justine)

Lisa, as the Assistant Headteacher gives a contrasting example of funded research on effective pedagogy that the school was able to take part in as one of the first cohort of Teaching Schools. This alliance-wide R&D activity, according to Lisa, took place over a relatively short period of a few months, after which findings were fed back to other Teaching Schools at a national conference. Lisa hoped that findings of this project would also benefit teacher trainees in the

Alliance. However, the extent to which learning from this exercise penetrated the school was unclear.

A strong feature of research-informed practice came in relation to comments about working with trainee teachers. Justine reflected deeply on the nature of knowledge transfer in her mentoring role:

> *"But also the intricacies of how you learn, so going back when I did my AST I then taught in primary school so going right back to basics. I then had to go away and read research papers on, well, why does 1 + 1 = 2 and – not that I can remember who wrote those anymore, but having to go out and seek that information to be able to understand how I learn to then pass on that information to others means that I had to understand how I learnt rather than the fact that, 'Oh, I'm just good at this so therefore everyone else should be.'"*

Examples of researchers, lecturers or other university staff being directly involved in working with school staff were infrequent. Louise felt that the dispassionate eye of a researcher would raise the level of their enquiries to 'research'. Furthermore, she felt that effective research methods may help to establish the best way to intervene to help students who were anxious about mathematics, in a project they were embarking on.

Breaking down the academia/practice divide was a feature of Neal's interview. He mentioned the advantage of having a contract that had enough flexibility (as a legacy AST) to visit the IOE library to read research articles and books. His role as a mathematics consultant enabled him to visit other schools and lent him the flexibility to take a research engagement approach to his work. This was built thus far out of personal enthusiasm, but shortly after this interview, Neal was appointed officially as a research coordinator for the school and the TSA. Neal showed an aversion to simplistic ways of understanding pedagogy. He made numerous esoteric references to writers and thinkers and explained how this influenced the way he thought of teaching. He bemoaned the idea of the so-called 'three part lesson' that was prescribed for teachers and was keen to develop a better theoretical understanding for the teaching and learning process.

Lisa, an Assistant Headteacher, had thought about a specific research role (and subsequently also became appointed as an alliance-wide research lead); however, she had her reservations about the extent to which she could be effective:

"You know, I think it's something that I feel I've never really done very much about in my professional career. Quite why – I suppose it's probably because there's been no specific encouragement to do so, lack of time, commitments of the job and things like that. But, yes, I'd like to do more. And David Hargreaves speaks obviously very eloquently about it and I think, as a school that is outstanding and given the character of the school, perhaps it's an area that we haven't addressed enough."

Lisa elaborates further on the challenges:

"You know, I've got quite a large teaching commitment. We have PGCE students for the first time in a number of years because of our teaching schools status so we've had two cohorts of about seven PGCE students. We've got lots of duties. There's been the R&D programme liaison with other schools, the teaching school, there's an awful lot to be doing and one always has the feeling that getting involved in research would involve quite a lot of academic study which is time consuming. But, you know, maybe I have the wrong take on what research means but, to me, it always has this sort of academic atmosphere attached to it which is lots and lots of reading and assimilating."

Lisa's reservations appear to mix an anxiety about the nature of academic work and also the workload that would need to be prioritised above it.

Louise, as Head of Social Inclusion, was able to articulate an approach to work across the school and across the alliance, that involved boundary-crossing of the sort Engeström (Tuomi-Grohn and Engeström, 2003) has described, including finding out the views of psychologists, teachers and parents. She wanted to ensure her department was built around the needs of the students and this involved all aspects of their physical, mental and material lives that may have an impact on their learning. The way that team members worked in her department, was a good example of this:

"And then I have got under me at the moment two part-time psychotherapists but that is going out to full-time equivalents, in fact three, were started at Easter. And two learning mentors, and we will have a third in September. Now the learning mentors are changing the way they work; they are going to be starting to work on a six-week programme with specific targets, obviously the counselling and the family work that I do, and what therapists do with a much longer term. And then we feed back in, we communicate with Heads of Years, we sometimes go into classrooms if students are having particular trouble with a particular teacher we mediate between teachers and students. And we liaise with the National Health school nurse as well as our own school nurse."

Louise was also interested in pursuing research into the effect of affective factors on the learning of mathematics. She describes how, anecdotally, she had seen

students' work suffer and she could trace this to family upheaval, sexual abuse or drug addiction, for instance. She was interested in involving an external researcher to elevate the quality of this work and to add a degree of impartiality and objectivity that she clearly *valued.*

Summary of extant and potential activity sytems in Ashbury School

Department meetings, INSET days, teacher training tasks and materials, observations (Ofsted style)

Tools

Teachers have a degree of autonomy, some department level discussion. Focus on examination results

Subject

Object

Outcome

Teachers and school leaders

Teaching students to make fast progress

Rules

Community

Division of labour

Research fits in but according to individuals' motivation. Accountability system and outstanding progress still the bottom line

Students, parents, teachers, support staff, leadership, university staff supporting teacher training

Staff timetabling requires most to work alone or in departmental groups

Figure 22 Old/Extant Activity System at Ashbury School

Collaborative research groups; lesson study; journal clubs

Research-informed pedagogy, students as co-enquirers

School takes system leader role in TSA through research hub role. Richer idea of pedagogy

Tools

Subject

Object

Outcome

Teachers as researchers. Leaders facilitating knowledge creation

Rules

Community

Division of labour

Leaders build capacity for research; teachers take leadership through research

University links for research; more staff with dual research/practice roles; collaborative research across TSA; support staff and other professionals working closely with teachers

Enquiry-focused CPD or R&D sessions enabling cross-departmental work. Research leaders with whole-school remit

Figure 23 New/Potential Activity system at Ashbury School

The context for Ashbury School was a dynamic one. The core business of being an excellent school was now 'complicated' by new Teaching School responsibilities. The new activity system was a more complex one, containing new and parallel 'objects'. As one of the new cohort of Teaching Schools, research-engagement was, of the six 'priorities' one that had thus far received the least attention. The transition towards a new Headteacher and the appointment of a Head of the Teaching School, added to this dynamism. The school was confident of itself, had a strong reputation in the community and with Ofsted and there existed staff who were ambitious and who showed a strong interest in engagement with research evidence.

Those interviewees leading and mentoring teacher trainees emphasised the need to keep abreast of new developments in subject pedagogy. Research engagement was thus less about using research-based approaches to teacher training; rather it was seen as a way to make explicit mentors' own tacit knowledge when working with trainees.

At Ashbury School, I gave a seminar to the Head of Teaching School, Neal (who later became a research coordinator) and a small group of interested teachers about the school's culture of research engagement as shown from their survey. A later discussion with Neal became an informal sharing of ideas and experiences about how to expand research engagement at Ashbury in which I tried to use my previous experience in such a role to advise him. Neal later set up a regular journal club and was keen to spread the use of lesson study as a way to engage in collaborative enquiry across the TSA. A feature of Ashbury was its strong pockets of collaboration and research-engagement that were confined to departments. This was reinforced by the layout of the school with departmental staff rooms. The English and Mathematics departments were particularly leading the way in this regard it appears. However, wider structures to engage across curricular areas within the school and beyond, in the TSA, still were not in place. Growing awareness of the need for such structures, partly embodied in the creation of Neal's new role, meant that opportunities for further expansion of research-engagement appeared strong. This type of research engagement provided the potential for a new object for the activity system, in which research-informed practices led to new ideas about pedagogy and education, as defined by a wider community and working to assist pupils with multiple needs.

The biggest threat to these ambitions seemed to be workload issues, as the 'core business' of the school still had to operate at a high level while also tackling new Teaching School work. The activity theory lens highlights this as both tertiary (tensions between the old and new) and quaternary contradictions (incompatibility of new activity system elements with extant ones). These are shown in conflicts and dilemmas experienced by the interviewees. The continued focus on 'the bottom-line' – excellent examination results – was present. This was about maintaining reputation. Therefore, while not always interfering with innovation or the more open target to enrich the school's ideas about pedagogy (through engaging with research), there was a sense that teachers, and

especially school leaders, had one eye looking over their shoulder at Ofsted. The traditional divisions of labour that prioritised the 'core-school' were in contradiction with new ones, dictated by the needs of wider 'Teaching School' activity systems – those of teacher training, school to school collaboration. Research engagement was beginning to become the mode of working in this parallel 'virtual' school (the Teaching School) although in terms of resources and time, participants in these activities were still stretched.

Chapter 6c – Carlton High school (establishing). An Ofsted outstanding school

Background and details:

Carlton High School is an 11-16 all boys' community school with an intake of approximately 800 students. One of twelve secondary schools in a large town outside of London, next door to the school there is a girls' school that operates entirely independently from Carlton. Two of the local secondary schools are Academies, one is a Catholic Faith School and all these state sector schools have a comprehensive admissions policy. Seven other Independent schools also take students of the same age range, and five of these are faith-based. The school has a leadership structure which includes an Executive Principal who is the overall leader of two schools and a separate Principal for Carlton High. It is a specialist school for Mathematics and Science since 2006 and a Leading Edge School since 2003, in recognition of its work with local schools to raise standards. Although technically the partner school was not awarded Teaching School status, they work closely together as a hub of a cross-phase TSA, having become one of the first one hundred schools to be designated a National Teaching School in 2011. Prior to this they had been a Training School since 2004. They play an active part in a range of wider networks, including the Schools Students and Teachers (SSAT) network, a local group of 17 schools that form the school-centred initial teacher training (SCITT) partnership and are members of 'Challenge Partners'; a group of schools that use peer review arrangements to raise standards. The Executive Principal is one of the senior managers of the latter programme whose founder was also instrumental in establishing the model for National Teaching Schools.

According to the latest Ofsted report in 2007, the proportion of pupils eligible for FSM was high, as was the proportion of pupils from minority ethnic groups. The percentage of pupils with learning difficulties and disabilities was lower than that found nationally. However, attainment on entry was well below the national average with a large number of pupils joining the school after Year 7. The same report mentions an ethos of high expectations for all students and a refusal to

accept problems with English-language proficiency as an excuse for under achievement. The examination attainment of students on leaving the school was well above the national average, despite the low starting point. Ofsted's 'dashboard' data, shows the school's examination results for 2011 and 2012 to be above the national average for mathematics, where results put it in the highest quintile for similar schools and the second for all schools. For English, results were in the second quintile for similar schools and all schools, despite 86% of students having EAL. For science, results were in the highest quintile for all schools. Both disadvantaged and other students at the school achieve higher than the national average examination attainment and the difference between these two groups is very small.

Initial contact with the school and first impressions:

Having emailed the Executive Principal in October 2011, I was contacted shortly afterward by Kathy, Assistant Head of Professional Development and SCITT Quality Manager. The survey was completed entirely online in February 2012, and followed up by six interviews at the school in April the same year. Kathy behaved as if involvement in this project was a natural part of her professional role and the business of the school. She helped to organise the distribution of the survey and also offered herself as an interviewee for the study.

Characteristics of the survey respondents:

31% (24 out of 78) teaching staff responded to the survey. Survey respondents were a little more senior within the school than average and nearly two thirds of the respondents had more than 10 years of teaching experience, compared to the 40% survey average. Despite that, the level of postgraduate qualifications among participants was actually a little lower than average.

Characteristics of interviewees:

> **Kathy:** The Assistant Headteacher at Carlton, Kathy had been working at the school for fifteen years. Originally she had trained as a teacher in the group of schools in the SCITT, then, after working as an NQT in London for two years, returned to be Assistant Head of Languages at Carlton High. After moving up in seniority to Head of Languages and then completing a Masters, she worked

with the local university to help develop a Masters programme in Subject Leadership in conjunction with the school. As a result of this and other programmes run by the school, and its teacher training, Carlton became a Training school. Kathy was promoted to the Leadership team about six years ago, where she was involved in self-evaluation, performance management, CPD and the Training School. Four years ago, having worked with SCITT as a mentor, and a professional tutor, she took on a Quality Assurance role with the SCITT Training Group, alongside the leadership role in the school and the teaching role. At the time of the interview, she worked three days a week for the SCITT and two days a week in the school.

Jane: Head of History at the school. Her fourth year at Carlton, she had completed her NQT year here in the first year, having completed her PGCE. Her only other experience was at a community school in Leicester, which she described as very informal by contrast, with no uniforms and first names.

Julie: Head of Food Technology and Head of Year Nine. Julie had worked at Carlton for nine years and had been here as a trainee in the SCITT group and also did her NQT year at Carlton.

Maria: Religious Education teacher. This was only her second year and the previous year had been as an NQT having gained her teaching qualification in Wales.

Mike: Science teacher. Mike had worked at Carlton for four years, having worked previously at two other schools in the same town. The previous schools were mixed and he described Carlton as the 'most organised' of the schools he had worked at so far.

Nora: Head of Religious Education and Citizenship and course coordinator for Religious Education in the SCITT group. She was also the teacher representative for the local RE subject organisation. This was Nora's fifth year at the school, having also trained as a teacher here. She was doing the 'Teaching Leaders'' programme at the time of the interview too, which was accredited to Master's level by Warwick University and run by the now National College for Teaching and Leadership. This two-year course was partly funded by the school and partly centrally by the programme.

How interviewees described working at the school:

Interviewees described the school as hard-working and quite formal; staff were expected to be 'professionally dressed' and the leadership structure was quite hierarchical in nature. Similar expectations were communicated to the boys. Students were described as being quite ambitious and driven on the whole and high expectations were communicated clearly to the boys by the school.

Maria felt that the school was very 'results-driven', sometimes to the detriment of other educational priorities. Nora echoed this view:

> "… the vision of the school is high aspirations. So to challenge them, challenging them to achieve more so. But that naturally is linked to results, because schools are almost like businesses as well, so there's that linked to results. But I think with me, the problem now is we're getting the results and that's fantastic, but do we actually allow kids to creatively explore other areas of the hidden curriculum? Not so much, I do believe."

This emphasis on high performance extended to teachers, who were steered towards professional development in order to progress in areas in which they were deficient:

> "Yes, we have a very thorough CPD programme which Kathy collaborates with (partner school). So there's opportunities available for everybody. But equally, I think they're also tailored as well. I think some people are pushed to some courses more so than others based on their performance management or their training needs. So there's options available to everybody but then I think some people are, rightly so, targeted to do some things." (Nora)

The school's research engagement characteristics:

In the survey, support for the statement, 'The school's culture encourages challenge and learning' at Carlton High was strong (1.4), the most frequent response being 'strongly agree'. Fewer agreed that there was a collaborative ethos of professional learning (1.1), with the most common response being to 'agree' with this statement. Responses in the interviews tended to belie this 'average' rating though, with examples of sharing practice in departments, across the whole school, and even with professionals from other schools:

"We have these professional pathways, which are Thursday twilights, everybody signs up to a certain number. We have made it part of directed time, and it is… They have moved from being delivery models, delivered by senior members of staff, with expertise in it. So we would have started, six or seven years ago it was the one I described to you, the leadership and management course, and a teaching and learning course, and a coaching course. They have evolved into now being more forums, and discussion, very much led by the participants, facilitated rather than delivered." (Kathy)

Many of the interviewees mentioned the schools so-called 'Papillon practice', whereby members of staff at any level of seniority, including NQTs were encouraged to stand up in front of the whole teaching staff to explain an example of good practice they had learned recently. Opportunities for whole-department development came with regular peer reviews from within or from outside, via the school's membership of the Challenge Partners scheme. Regular 'learning-walks' occurred at Carlton, too. These were where teachers could go into classes for short periods of time, to pick up examples of good teaching. These could be peer-to-peer or sometimes more senior managers would go in and feed back the strengths and weaknesses to the teacher. Lisa gives examples of five to six of these learning walks, including some outside her subject area.

For Kathy, the focus on externally-driven innovations or reforms that might impact on the school was somewhat an obsession. This was described as a kind of 'research' in itself:

"So rather than waiting for it to become government policy, and then suddenly everybody follows suit, it was about, what is being researched, what is being said? What kind of things were coming up? We used to scrutinise so many Ofsted reports to see the emerging issues, before they became the emerging issues. To see if we could pinpoint what was going on, so in terms of researching education and what was already happening. Where we could see gaps that needed to be addressed, but also that fitted with our own developments." (Kathy)

Nora voiced the opinion that research engagement was perhaps more relevant for experienced staff wishing to become more senior in the organisation:

"I know, I'm just way too much. I don't know. I couldn't say. I think what it is, is the younger the teacher and the more... if you're more established and you're not in a high position, then maybe your outlook might be slightly different. But if you are more established and you're in a higher position, then research is inevitable. And if you want to progress on further, then you'd be naïve to assume that research isn't part of your job."

Part of the drive to be research-aware, was the need to lead sessions on the school's postgraduate courses:

"Because we are delivering a postgraduate course, if you are delivering sessions, subject sessions to trainees, knowing your own subject very well, and knowing what the developments are and reading the latest research becomes part of that work." (Kathy)

In terms of having support systems for engaging *in* and *with* research, Carlton's survey responses were in line with the average in the sample of schools. One respondent explained potential reasons more staff did not engage in research:

"Lack confidence to do effective research. Don't really know how to make research effective and if the results are significant or just a statistical fluke. Don't have training to analyse data effectively." (Survey respondent)

Two of the interviewees gave examples of support shown by senior leaders at the school for research activity. One example was for time off to work on coursework for postgraduate programmes and the other was significant financial commitment towards a middle leaders' course.

Eleven respondents named the local university with which Carlton is linked for professional development and research. Examples of accredited research related to the middle leaders' course, one on JPD and one Master's in Education at the local university. Several examples of specific research projects were mentioned in the survey and interviews:

- The transition of the boys from here to (the local) sixth form
- Assessment policies in the Design and Technology curriculum
- The school was training students in how to become researchers, particularly in lesson observations and how to feed back.
- Trialling a new computer system for online tracking of students' progress
- A project as part of the 'middle leaders' programme on raising the attainment at A* and A grades of students in the RE Department
- Assessing the impact of the school's behavioural management on progress, as part of an MA in Educational Leadership
- One respondent mentioned having been a survey participant for one of the Royal Society's projects.

45% of respondents felt that the school based some of its decisions on research evidence (49% survey average).

There was a sense from interviewees that evidence-informed approaches were not uncommon at the school but that these were not explicitly addressed as such:

"Whether, is it [evidence use] really explicit? I don't know. But I hope any decision that is made that is calculated and it's [based on] some sort of evidence. What that evidence is, I don't know. This hasn't been made explicit to me. But then I assume it doesn't need to be. You know, you assume that anybody that's making that decision on the school and the welfare of the school is doing it with some ideas in mind." (Nora)

Mike outlined a project involving the science department at Carlton working together with their counterparts at other schools. This followed a research-informed process:

"Something called the Triple Science Support Project, where we got a group of science teachers from local schools together, made a small network, and we did some very simple research into the areas of the content that's delivered, about which teachers actually struggle to deliver"

He describes how they explored misconceptions and brought in a physics lecturer based on these and discussed new ways of teaching on the basis of this session. While the research behind the innovations in the science department may not have been overtly discussed, Mike had a feeling that these were, nevertheless, well-grounded ideas:

"I think a lot of it happens without actually realising it happens. New things that we're sort of asked to do, asked to try. Especially in our department, we're quite an innovative department with teaching methods and things that go on. I think most things have been trialled before and they're not necessarily things that people have made up themselves, but they're things that people have read about which they must have done some sort of research into doing it, whether it's just by trialling it in different areas".

The school had a higher than average involvement in networks and partnerships (50% compared to 39% average in sample). Survey respondents cited, for instance:

- The TSA
- An NFER language project 2011
- An SSAT Science development project
- Links with the NCSL
- Involvement in a national project on literacy and behaviour
- The Headteacher was involved in sharing and learning from work with the Government and also in international visits

Carlton was able to take advantage of its links with other schools, including its partner school in the federation, to undertake joint research:

"So it started with the two maths departments, and it was picking up similar issues that they were facing, because they have a similar intake of children. Similar issues, 'What is the issue, how do we… What do we think might be the outcomes if we implement this kind of curriculum or this kind of assessment regime, or this kind of policy? Well let's do some research on that across the two schools, let's work together.' So we are having joint meetings, we are going in and doing joint observations, questioning the pupils, all the kind of things that you would do as research. Surveys, and then putting it all together and seeing if there is any commonality, any areas where they could develop?"

There was a feeling that senior leadership did take research activity seriously and were concerned that impact could be shown from this:

"The school does want to know and of course they do. They're investing money into this programme so there has to be a tangible outcome." (Nora)

Twelve respondents name Kathy as the person in charge of promoting research engagement. Three other names of senior managers were mentioned once each. It was not clear from my school visit whethere anyone had a specific research champion role, however Kathy was in charge of professional development and the TSA. She seemed aware that the school was now at a stage where it needed to be more active in carrying out its own research and setting its own agenda. However, she felt that this would be a long evolutionary process:

"You can't force it, and you have got allow time for people to become familiar with it. It may well be you always work with those who are least resistant first, and actually it does spread. As new people come into the school, you induct them into it, so they don't know any different, which then means that they accept it as part of the culture of the school. But it has also got to sit within the other systems in place. So if you have got a sound evaluation system, and a sound improvement system, and sound performance management systems, actually it is part of the whole cycle of what is going on. But again, they have got be embedded and they have got to be really well structured."

Kathy talked about the influence of JPD on the way they worked and collaborated. She described a shift from modelling good practice or one off courses to one in which practitioners came together to collaborate, and out of that, new practice emerging.

The Ofsted influence:

At Carlton, Maria uses highly *conflicted* language about the influence of Ofsted on the school. On the one hand, she remarks about the school:

> *"…it's a really good school, because you learn so much, like, they're so Ofsted driven".*

However, later, she comments that,

> *"…sometimes the kids don't get the sort of, the social skills, sometimes I think that they need to move on. I think that's sometimes where our school lacks but they get the grades and it's fantastic in that respect."*

In this impoverished professional dialogue, there was an acceptance that Ofsted measures were not a sufficient view of the educational process, but respondents such as Maria were unclear about what other features were, or should be, in their place or in addition to them. Maria also echoed concerns by Jade that 'outstanding' lessons were generally quite rare, and she felt that she rarely saw one. This created an anxiety about what to expect from her own teaching and about how she could learn to improve it.

> *"Yeah, I feel like I learn from...I think sometimes that...we always say that...obviously, it's really frustrating sometimes in this school, because you say, everyone always wants to be outstanding and...that's such an outstanding school but nobody's, I've never really felt like I've seen an outstanding lesson. So, I can say, go and observe people, and we do go and observe those lessons and they are always good but I've never really seen an outstanding lesson."* (Maria)

Maria, when asked about the professional development opportunities open to staff, mentions courses directed at teachers to move from 'satisfactory to good' or 'good to outstanding'. Even the plentiful 'learning walks' that in theory were to enable all staff to learn from each other but in practice were often the subject of Ofsted-style lesson grading. Their membership of an established peer review network also used the Ofsted framework to base judgements on their school's work.

Researching and collaborating

Research and enquiry projects and activities also led to increased collaboration with staff outside of the school, particularly neighbouring or partner schools. Kathy, at Carlton saw their research as:

"…coming up with our own hypotheses and then testing them out, and then sharing them. So that we actually, without making too insular, actually looking at our own needs. And then seeing, 'Well is there anything here that can be shared?'"

Despite the examples of alliance or cross-school research activities the impact of research at school level appeared less discernible both in interviews and from the survey. This may have been due to the expectations of how particular members of staff may or may not have an influence on policy, perhaps partly due to seniority. For instance, Jane mentioned coming into contact with a teacher from the neighbouring sixth form college, having done her own research on transition from the school to sixth form. However, she also admitted that her own school leaders had shown little more than a passing interest in her project.

Collaboration between Carlton and other schools was considered tricky. Kathy expressed concerns about sensitivities working with their partner school in the Teaching Alliance, the latter having been turned down for designation as a Teaching School, due to a 'good' for Teaching and learning in the last Ofsted inspection:

"What came out of that [CPD leadership project with the Training and Development Agency for Schools (TDA)], what I found out of that, was that you couldn't just have a model of CPD, of research, or whatever you were trying to do, and just say, 'This works, here you go, here is the package, just run with that.' Because even across the two schools, when we started running some of these programs four years ago, the resistance we got between two sets of staff coming together, 'We don't want to travel over to that school on a Thursday, we want to stay here. We want one of our leaders to lead it and we want to be in our comfort zone over here.'

Despite the proximity of the schools, and the shared Executive Principal, the need to build trust over time in collaborative research relationships was seen as paramount.

Summary of extant and potential activity sytems in Carlton High School

Plentiful CPD, cross-dept working, school alliance work including peer review. Ofsted focus to most of this. Numerous examples of school partnership research

Sharp focus on what Ofsted require and were likely to require in the near future.

Teachers and school leaders who 'push students'. Senior leaders with TSA roles.

'Pushing students', being 'outstanding'

Good research activity but that led by teaching staff did not inform or challenge whole school decisions

Multiple memberships in alliances, mostly based on teacher training roles.

Hierarchical leadership roles. Partner school with different professional culture

Figure 24   Old/Extant Activity System at Carlton High School

Collaboration through new research projects (?)

Curriculum less focused on measuring progress and pressuring pupils. Wider education valued

Richer conception of the school's wider educational values

Teachers as researchers. Leaders coordinating wider school involvement in research

Tools

Subject

Object

Outcome

Rules

Community

Division of labour

Decisions informed by research at all levels. A discourse of research that enables wider discussion about education and learning

University links for research to add expertise to school collaborative partnerships (more examples like the Triple Science Support Project)

Less hierarchical. Building on 'papillon practice' so that there is more collective leadership through enquiry

Figure 25 New/Potential Activity system at Carlton High School

Interviewees at Carlton High tended to see the school as a place where teachers were under pressure to perform and to become 'outstanding'. The Teaching School status seemed well embedded and there were numerous alliances and structures to collaborate. Nevertheless the new context meant that there were tensions with their partner school and also between existing structures for school based teacher training alongside new ones created by the TSA and new legislation. In the existing activity system, research seemed to play a role, such as the example given by Mike on the Triple Science Project.

However, in most cases awareness of research was not high. Rather, interviewees sometimes expressed an 'assumption' that decisions taken by senior leaders were based on the best 'evidence'. In many cases, examples of collaboration sounded a bit 'like research' but were not classed as such. Therefore, there was not evidently a discourse about research that permeated the school, nor clear structures for promoting it widely, including the lack of a senior leader clearly in charge of this. Ofsted dominated the professional learning activity system – many participants equated the standards of their teaching or leadership (or research projects) to the former. Research was about 'anticipating' what could be next by looking at Ofsted reports and professional learning was about 'becoming outstanding'. These created double-binds for one early career teacher who wanted to become outstanding but never understood this in tangible terms. The potential for research to become more innovative, and unconstrained by these standards seemed to lie in two places: first, by adopting a narrative dominated more by enquiry than by Ofsted and secondly by forming partnerships based on enquiry where the object of these collaborations would become about creating new knowledge. The latter aim was hinted at as the next step by Kathy, however it was unclear how the culture and structures were going to change to enable such a development.

Chapter 6d Barnfield Community School (Established). Research-engaged professional development. No longer 'Outstanding' ?

Background and details:

Barnfield Community School is a large inner-London school with over 1400 students, significantly more of whom are boys than girls. It has its own sixth form which has expanded its intake over the last few years, partly enabled by its extensive building programme to improve the school site. The school has specialist status for sport. It is also an accredited provider for teacher training. In 2011, it became one of the first 100 National Teaching Schools, having previously been a Training School since 2001. In 2009, an Ofsted inspection of its Training School described its employment-based initial teacher education as outstanding, including a "h*igh quality of leadership and management with a constant focus on excellence*".

Barnfield has well-established links with a local university and has been the subject of publications and research interest, especially with regard to its professional development practices.

Many of Barnfield's students come from deprived backgrounds. In 2011, 36% of students were eligible for FSMs, while in 2012 this rose to 56% with the new methodology for calculating this level (compared to 26% nationally). A very high number of students have learning difficulties or disabilities; in 2012, 28.6 % of pupils were supported by School Action Plus or with a statement of SEN (compared to 8.1% nationally) according to Ofsted figures. The majority of Barnfield's students are from a range of minority ethnic groups who speak over seventy languages. Over a third of students come from homes where English is not their first language. As well as falling within an area where levels of deprivation are very high, many of the local schools operate a policy of selection.

Ofsted reports prior to the survey and interviews had consistently described the school as 'outstanding' since 2007, having improved on the 2001 'good' judgement. In particular, the 2007 report described the school as one in which, "*staff expect students to succeed. Strong relationships support a culture of self-belief.*" The leadership was described as 'no-nonsense' in the drive to improve

the school and the environment was one in which high performance was expected of all staff. Despite the challenging intake, most students made very good progress. Ofsted's 'dashboard' data show that, although overall examination performance by its students was below the national average, Barnfield's students came in the second quintile when compared to similar schools (top 40%). Disadvantaged pupils at the school, as measured by Ofsted data, perform about as well or better than other pupils for English and Mathematics.

In the 2010 Ofsted interim assessment, the school was judged not to need a re-inspection any earlier than September 2011, due to the maintenance of its high standards. In September 2013, the school was subject to a full Ofsted Inspection under the new inspection framework. The school has now been downgraded to 'good' (two) overall, which includes grade twos for each of the categories inspected, i.e. the quality of teaching, the achievement of pupils, the behaviour and safety of pupils and leadership and management.

Initial contact and details of building research capacity

As with all the schools surveyed, initial contact was by email to the Headteacher. In the case of Barnfield, this was forwarded to Tanya the Senior Deputy Headteacher. Despite her very busy workload, Tanya made herself available for one initial interview in November 2011 and again, as part of the July 2012 interviews, which she and a colleague helped to organise. I was subsequently invited to observe two staff development meetings (an ALS and an EPD session, see below) and an end of year 'celebration event' where staff described the outcomes of their research activities.

Tanya was herself taking a doctorate in education (EdD) at the time, and was an advocate of school research engagement. She was in charge of staff development activities at the school and had determined that a researching stance to this would be central to her approach. When she took over the GTP, Tanya made it the norm to ask staff to look at some externally published research

to inform their practice. Since about half of Barnfield's teachers came into the school through this programme, she saw this as a way of influencing the overall professional culture. She was keen that this approach was not abandoned after the initial training year, so, developing this approach further, in the second year, staff then moved on to the EPD programme. In the first term of EPD, teachers had to do some collaborative lesson planning and observations, in the second term, some pupil voice work and in the third term, a six-week piece of action research. This has been running since 2007. At the end of this process, there is a celebration event in the summer term, where staff presented their findings; these were also published in an internal booklet called EPD reports.

Having been graded an 'outstanding' school since 2007 by Ofsted, Tanya was concerned that they should focus on the professional learning activities which promoted continuous improvement and avoided complacency. She was also clear that staff at the school could learn a lot to learn from colleagues elsewhere and wanted to avoid being too inward looking.

Since 2008, the school had been running ALSs. This approach had been written up in a publication for the National College. About 50 teachers took part in these ALSs, all apart from NQTs and EPDs or teachers taking Master's programmes. There were a variety of Master's courses, including some doing Master's in Teaching and Learning (MTL) with a nearby university. Tanya had been inspired to set up PLCs where collaborative discussion about practice combined with an enquiry approach to learning could help to raise standards. During her doctoral course, she had hear about Nonaka and Takeuchi's (1995) 4 stage model of knowledge creation, and this inspired her to set up the ALS programme with these stages in mind.

For each group, there was one learning leader and usually seven or eight participants. They started as four twilight sessions, run twice a year and then, based on an internal evaluation in 2010 of this process, they switched it so that some ran all year, over eight sessions of about one hour each. These sessions were created by using one of the five full days of INSET sessions per year allowed to the school, and combining into what are now four sessions run over the course of a whole academic year. The ALSs get a mixed reception from teachers based on Tanya's own evaluation; some teachers were really keen while others worried that other priorities, such as report writing, should come first. Tanya felt it was

also difficult to know exactly what impact research engagement had on measurable outcomes such as student attainment.

The ALSs ensured engagement with research, since teachers had to bring externally published literature to the session. A lot of this was routinely sifted by Tanya and passed on to colleagues. Tanya kept a close eye out for research and subscribed to a number of magazines; including the Teaching Times library and other email alerts, such as the (now defunct) Research of the Month. Many teachers also got their information from a website devoted to ideas to promote independent thinking where they could join as 'associates', which helped to put them in touch with researchers in the field. Tanya also liked forwarding links to relevant TED (Technology, Education, Design) lectures[18].

Tanya had helped put together the school's Teaching School Action Plan, which focused on Initial Teacher Training and greater collaboration with HEIs. Tanya had also put in two bids worth around £20,000 each to the National College, one for 'Behaviour and phonics' and another for 'outstanding teachers and ITT'. As part of this, she had also set up a group to evaluate these activities. In 2008, Tanya bid for 'effective practices in CPD' and was awarded this twice. Her efforts also led to the school being nominated for Times Educational Supplement (TES) awards for outstanding CPD.

In addition, the school was due to be visited by lecturers from The Open University (OU), who were going to run the 'vital professional' course , and would be giving some input in the ALS sessions in November and December 2011 on practitioner research and evaluating impact which were open to all staff. Another NTS nearby was a 'Challenge Partner' to Barnfield, with whom they could share expertise.

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[18] https://www.ted.com/talks

Characteristics of the survey respondents:

Sixty three teaching staff responded to the survey which was completed online in one day. This represented 52% of the entire teaching staff at the school including TAs. Due to the way the survey was distributed, TAs took no part in the survey and nearly 60% of respondents classified themselves as teachers, without additional TLR posts. 38% had less than 4 years teaching experience (28% overall in survey) and only 24% had more than ten years' experience (40% overall); 67% of the sample had no postgraduate teaching qualification other than their first teaching qualification, compared to 55% overall.

Characteristics of interviewees:

Tanya: Senior Deputy Headteacher. Tanya had worked at the school since 1998 (14 years). She came in initially as the Head of the Geography department. Barnfield is an employment-based initial teacher training (EBITT) provider and Tanya was made manager for this aspect in 2005, when she became Deputy Head. Since 2008, a colleague took over this role. She subsequently became responsible for teaching and learning, self-evaluation and Ofsted, literacy and CPD at the school.

Faith: Acting Special Needs Coordinator. Faith had worked at three other schools in three different Local Authorities. This was her eighth year at the school in the very busy Special Needs department. Although the school was part of the London-wide Special Educational Needs Joint Initiative for Training (SENJIT), Faith felt that the training provided in this area was less extensive than her experience elsewhere and that as a Training School (now Teaching School), Barnfield tended to lead this activity rather than attend it.

Faye: Drama Teacher. Faye had been at the school for three years, having qualified on the GTP at the school. Prior to that she had been a TA for three and a half years at Special Needs schools, which she said prepared her well for the type and demands of students at Barnfield.

Jade: History teacher and responsible for NQTs and PGCEs. This was her sixth year at the school, having qualified under the GTP scheme at Barnfield.

Jordan: Head of Business and Economics. Jordan had worked at the school for seven and a half years, qualified at the school through the GTP, having previously worked as an accountant and trader in the City of London for several years.

Katherine: Science Teacher in charge of key stage 4 GCSE within the department. This was her fourth year, having trained at the school through the GTP.

Lauren: Business and Economics teacher and Head of Post 16 Progression. Her fifth year at the school, Lauren had qualified under the GTP and was currently completing a Master's in Education.

Ted: Information and Communications Technology (ICT) teacher at the school, Ted had been teaching at Barnfield for seven years. He was planning to lead the new Computing GCSE and A Level courses for the coming academic year, as a new part of the curriculum offer. Ted had qualified years earlier with a PGCE and had worked at another, very different London school for a short time. Despite having a less deprived and diverse cohort than Barnfield, his previous school closed, having gone into special measures. He described the support for disciplinary issues at Barnfield as being very strong.

How interviewees described the school

There was strong agreement that the culture was one of professional collaboration at Barnfield. Some support came from the interviews in this regard too:

> *"And I'd say that most people are very open to being observed, giving ways forward, celebrating success; it's not like everyone holds on to what they know and it becomes private and theirs."* (Faye)

As with Carlton, 'learning-walks' were quite commonplace at Barnfield. Senior managers encouraged these frequent mini-observations by focusing on what they had learned from the teacher and thanking the teacher, rather than giving critical feedback.

Faye felt that the school was, nevertheless, one in which the senior management were constantly pushing for improvement from the staff; she describe the ethos as 'intimidating' sometimes, the message was,

> *"Be the best at everything, not at one thing, do everything to the very, very best standard that you possibly can."*

A very strong impression was given of a welcoming and inclusive school. Staff perceived students to be particularly needy at Barnfield. While there were tangible

issues to deal with regarding levels of literacy, which was a whole-school focus, other problems were to do with students' confidence, self-esteem and other behavioural problems.

The large proportion of teaching staff who came through the GTP scheme meant that they had learned to work together in a particular way that was needed in a school were students had such a range of needs. While Faith, expressed concern that those who had come through different routes may not be getting the support they needed to adapt to the special Barnfield culture. Katherine described a strong camaraderie generated by this intense working environment, with plenty of young, highly motivated staff. The systems to cope with disciplinary issues appeared to have worked to create a school environment that was safe for staff and students.

> *"That has definitely changed. Because 10 years ago, no one wanted to send their kids here. Because of all the infighting with the gangs, and stuff like that. I mean my Head of Department when he first started here about nine years ago, [name], he was told not to go out in the playground alone. And it is just a completely different atmosphere."* (Lauren)

However, the previous heavy use of ASTs (now defunct) to help staff in dealing with classroom teaching issues was no longer possible, with funding constraints limiting numbers from sixteen previously to just three or four now.

The school's research engagement characteristics:

The survey showed that staff felt that there was a strong ethos of collaborative professional learning and that the culture encouraged challenge and learning. Specific encouragement to engage *in* and *with* research was high for teachers' own development as well as departmental and whole-school development. Many mentioned ALS, EPD and MA (Master's) programmes in support of these points.

Several comments on the survey described how these groups encouraged research engagement, particularly mentioning action research as the methodology, one teacher did point out that:

"Action research is actively encouraged throughout all levels of progression in the school. I think the EPD and ALS programmes are extremely effective models (when followed correctly.)" (Survey respondent)

Although less than half of respondents' agreed that time was made available to engage in research, the majority did agree that they had access to research-based resources, mentoring and other research expertise. Overall, 71% of teachers at Barnfield agreed that there was a system for encouraging staff engagement in research *and enquiry*. The larger agreement to the latter statement may reflect that some teachers prefer the latter description for the ALS and EPD groups. The above comment about these groups was supported by other statements from staff who had led these sessions. These suggested that the depth of engagement with published research varied from group to group, as did the rigour of their enquiries. It is interesting to note that my own efforts to observe follow-up meetings of the ALS and EPD sessions failed due to last minute cancellations. Other work priorities had apparently taken precedence. The fact that no new date for the meeting was forthcoming seemed to suggest that this time was never recovered.

Faith's comment about the ALS groups further supports this time issue:

"… it would be a very privileged teacher who had hours to spend researching. Which is why we have these action learning sets, because they are very quick and snappy, and sharing what other people are doing." (Faith)

On the survey, several members of staff commented that more dedicated time would be needed to carry out research in sufficient depth, and one example was given of a teacher who gave up trying his/her Master's due to this challenge. For Ted, the time issue was crucial and senior leader support for professional development through time release, was highly valued:

"Oh yes, if somebody said to me, 'We'd like you to do this bit of research and we will give you time to do it.' Then I would happily do so. I was asked to do an Outstanding Teachers programme last year, which was quite a commitment; I think there was seven or eight days of different sorts of sessions and a little bit of homework for that which I was happy to do. I was given time to do it, I was given cover when I wasn't in my classes and that's fine. So I could certainly see the value in it."

Nevertheless, around 62% of staff had carried out their own school-based research/enquiry while working at the school and 71% had been to some degree

involved in school-based research, including participating in research or contributing data. Examples of accreditation included a number of MA courses.

Despite the large amount of research activity at Barnfield, less than half (44%) felt that the school based some of its decisions on research evidence. Nevertheless, examples of research-/evidence-informed decisions made at the school from the survey were plentiful and specific (see appendix 17). Looking at these examples, the mismatch here most likely represents the inclusion of the conduct of research and the accessing of external research.

Nearly 70% of staff who responded to the survey felt that the school was committed to sharing the results of its research within the organisation. The ALS and EPD groups were commonly cited as examples of sharing practice within the organisation. The cross-departmental membership of these groups meant that this was a particularly significant and unique aspect of professional life at Barnfield.

However, only a third agreed that Barnfield was committed to sharing research beyond its boundaries. This was reflected in the perception that the school did not contribute much to external research-related partnerships, networks, events or publications (22% agreed with this statement). Nevertheless, numerous examples of contributions to external research partnerships, networks, events or publications were cited on the survey.

62% of staff who responded to the survey were aware of the existence of a designated member of staff who was responsible for promoting research engagement. 35 out of the 39 who named someone in this role mentioned Tanya, who was clearly the school's research champion. Comments about Tanya from the survey and interviews supported that her role included encouragement to take a lead of and through research activity, distributing research articles and reports to targeted members of staff and encouraging staff to read and engage with research. She was also known to have published and generated a high external profile. Overall, she was perceived to be committed to research-informed practice:

> *"One of our Deputy Headteachers is incredibly committed - Tanya to improving T&L or systems and methods through research-based learning."*

However, one teacher on the survey commented that:

"Tanya is always supportive and encouraging but maybe there needs to be other members of SLT directly involved." (Survey respondent)

Given this last comment, the sustainability of research activity at Barnfield may be under some threat, since Tanya has since moved on, to a promotion at another school. Asked to reflect on what 'stage' of research engagement the school had achieved, Tanya said:

"In a weird way we're, sort of, where I thought we would be now. I don't know much more about where we should go. Five years ago I had a vision of where we are. We're sort of there. But I don't know whether we can push the staff any harder to get them engaging in research any more."

Impending Ofsted inspection

A recent looming threat, mentioned by a number of staff in the interviews was the forthcoming inspection under the new Ofsted framework:

"Well I think it's started that we have to now because we got outstanding I don't know how many years back, five years now, and I think that actually led to quite a lot of complacency and that led to us not actually questioning or challenging ourselves but a lot of back patting. I think we've now realised, over the last few months, that maybe we're not anymore, maybe never were outstanding and obviously that kind of for us has a lot of implications and obviously an Ofsted is looming, there's a new framework, it's all much harsher, etc." (Jade)

Jade's comments above, can be retrospectively seen in the context of an Ofsted visit in June 2013 which designated the school as 'good' in all categories. One issue of particular concern in the new framework, was the extent to which pupils were meant to be pushed by teachers to make progress:

"I think with our students you've got to be realistic; yes, they should definitely be challenged, they should definitely be progressing, but you've got to be realistic. If you've got your foot up their backside for the entire lesson then you're going to lose them." (Faith)

Faith, explains the potential disruption to the school, which has committed to its Teaching School status and activities but because of a change to Ofsted inspection criteria, now may no longer be able to continue in its role:

> Interviewer: *"As a teaching school, you're supposed to be outstanding. So what happens if they come and then you're told you're not outstanding?"*
>
> Faith: *"The word is they just take it away overnight, which is nonsense."*

Jade at Barnfield mentions how the Ofsted 'drive' was deeply demoralising to some staff, previously judged by peers to be excellent teachers:

> *"So I mean we'll have to change but it's not a very nice way of changing. It's quite, I guess, demoralising. And the people that I've seen go through, people who thought of themselves they were solid teachers and some of them, I know, are solid teachers because I've seen them plenty of times and then they come out with threes and fours, that's not…"*

This shifting of the goalposts by Ofsted was echoed by all the interviewees, as Jordan says:

> *"I think the whole landscape is always changing, I think that's part of the problem we're finding as a school at the minute. And [what] we judged to be good or outstanding last year is now satisfactory this year"*

Jade saw this as having had a detrimental effect on staff morale:

> *"And I think that has led to some very serious questioning but in a negative way again which is quite sad because it's moved from this complacent, 'We're amazing' to this 'Oh, we're all scared now.' Whereas what you'd rather want is, I guess, a culture where there's a continuous questioning in a kind of quite positive "I'm good, how can I get even better?" kind of thing."*

Tanya, in her senior leadership role had a unique insight into this new way of measuring Barnfield's successes. She was closely involved with the recent peer reviews conducted under 'Challenge Partners', and received training to use the new Ofsted framework. The 'reality-check' that Ofsted priorities competed with the more open-ended professional learning sessions was clear:

> *"And it has to be we're doing it for ourselves and the students, but the political pressures for doing it for Ofsted are really, really strong. Schools can live or die on it, we have no choice really."* (Faith)

While participants pursued research as a way to discover ways of meeting ends that were concordant with their own wider values as teachers, Ofsted was seen to impose its own criteria for progress that was overtaking these efforts. Jordan describes the effect of the new Ofsted framework:

"I think the school's always trying to improve and do things better, and I think the change we're going through at the moment is not necessarily down to us wanting to become better. It's us having to change what we do to fit into new guidelines set by Ofsted which doesn't necessarily make education in any way better. It's just a question of we need to learn as a school how to jump through those hoops, so that when an Ofsted inspector or someone comes they are greeted with what they perceive to be a good educational experience."

Jordan nevertheless reflected on having worked outside of education, and noted that meeting external regulatory demands was seen as necessary in other professions, such as in finance. Jade reflected this ambivalence. Her own view, partly determined by the use of Ofsted judgements – was that the standard of teaching was not all that they had come to assume. Thus, she concluded that the impending inspection could be used to weed out complacency among staff. However, she then shows cynicism about the process:

"And then I think, if I was in charge, there would be two - so as a school yourself you define what is good teaching, what do we want, and then you play the Ofsted game. I think that's probably the realistic way forward."

Responses from interviewees revealed a series of dilemmas and double-binds, that surface in relation to the contradictory pulls of conflicting values. In particular, Ofsted criteria were seen as potentially destructive of their existing and carefully-cultivated culture of nurturing pupils with complex and challenging needs.

"I think our expectations are often totally based on context; the context of that student, the context of that lesson, and the context of what they have done before. I mean there is a lot of celebration of success and individual success; so if you've got students who you know are not strong at the academic work, I think this school is extremely good at offering them the opportunity to succeed perhaps on the sports team or in a play or something." (Faye)

However, as Faye herself then goes on to say:

"Sometimes I think it's only a certain area which we have the high standards for them in and we kind of go, 'Right, given the context of you as a student, we'll still keep trying at this but we're going to focus more on how you're doing at the thing which you're great at in the hope that perhaps your confidence then builds in other subjects.'"

Her qualification raises doubts as to whether the school, or perhaps Ofsted are right in seeking to 'ignore' context.

For Jade, the lack of clarity by Ofsted leads to her rejecting this standard and suggesting a need for greater 'internal accountability' (Rallis and MacMullen, 2000).

> *"Because I'm not sure whether Ofsted at the moment – the impression I get – have any idea what the kind of daily practice of a teacher looks like and that kind of stuff that came up is not realistic for anyone to fulfil, make happen. So then that means we, as a school ourselves, need to define what makes us good teachers and a good school and for our kids."*

Katherine, also suggests that that pull of the context was greater (at the moment) than the pull of Ofsted:

> *"But I do think that the culture of telling the kids and encouraging the kids to just try things and help them realise that it's okay to be wrong sometimes, that will continue. That's always going to be there. Because we're dealing with children who just would rather not do anything than do something and fail at it."*

The school as a research-engaged learning organisation

Interviewees' responses showed a complex variety of strategies for research, development, enquiry and collaborative learning that came together. Jade described her research on an ALS:

> *"So we went to the [name of university], went to the library – only once unfortunately – kind of did some reading, did some background research and then designed a workshop actually as a – kind of tried out stuff in our lessons, videoed ourselves and then used kind of some of the stuff that came out of that to design a workshop, seminar or something, that we've kind of been delivering since in a way."*

The presence of a 'laboratory' classroom at the school, with a video camera and a one-way mirror helped facilitate this group's observations and sharing of questioning practices. Jade was interested in bringing theory from academia together with practice, in order for there to be mutual learning:

> *"So it's something that I wanted to address and it's also something that I genuinely enjoy and I always like the idea – I never know whether I'll realise it – of being kind of – because I think there's a lot of theory out there, there's a lot of practice out there, but there's very little of the two meeting and feeding*

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from each other, learning from each other, and I've always liked the thought of being able to be at that point in the middle."

Jordan, reflected on the way that R&D overlapped at the school level:

"I guess I see research as a finding out new stuff, and in this case finding out new stuff was about looking into the government papers, the Wolf report[19], changes to the specifications and how that come about. That was research. But then showing best practice, if you're finding out new stuff, then that could also, I guess be seen as research. I wouldn't necessarily really label it like that in my own brain. But that's as you say, professional development, showing best practice, a bit of everything all combined isn't it?"

Lauren describes how the most useful research was often about engaging in dialogue in order to improve practice:

"Yes completely [agreeing that ALSs could be seen as low quality research], but it seems more useful because of the discussion that you are engaged in with people. Whereas when you are doing the research for an essay or something, it is just your thinking and how you are perceiving that information at the time. Whereas sometimes, a lot of the time when you discuss it with someone else, the ideas that we get from reading the same bit of information totally informs what you are going to do next."

Lauren's example seems to show what Tanya was trying to achieve, through Nonaka and Takeuchi's (1995) knowledge transfer model. Thus, knowledge combination (explicit to explicit) that leads to individuals being able to transfer ideas into action (explicit to tacit). This was partly achieved by relating the explicit knowledge of the article to the contextual features in which teachers were operating.

Interviewees were enthusiastic about the ALS and EPD sessions, particularly enjoying the opportunity this gave to share ideas about teaching and learning. Tanya recognised the difficult balancing act between ensuring participation in these groups and allowing for an element of opting-in. Generally, teachers were told they had to take part but were allowed to choose which group to join, or in some cases, decide which area that they would like to set up and lead as a focus.

Senior leaders modelled an open, collaborative approach to learning and even put themselves up for direct scrutiny of their own teaching during INSET days:

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[19] Alison Wolf's 2011 report on vocational education:
https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/180504/DFE-00031-2011.pdf

"We have had several INSETs learning how students learn, and what a good lesson would look like. So for example, it was last year, we had an INSET day, and they made up these mock classrooms and there were chairs etc. And two members of the SLT took turns to teach the lesson to kids, there were about 15 kids to come in, and they taught the same lesson to the kids in different ways. Like brief, about 20 min…" (Lauren)

Tanya was proud of the amount of cross-departmental collaboration and sharing of practice, much of which she admitted was 'contrived' by her. She saw this as important, not least as a way of reducing within-school variation in teaching quality. For example:

"So if this is a really high performance department and this one is not, you would hook them up for the year. And then you'd give them an outline of activities. So you two work together on how you approach homework. You two work together on how you might tackle behaviour. You two work together on high order thinking or something. And so there is quite a lot of cross-department work at that level too."

Jade mentions how some teachers cited the type of students at Barnfield as a barrier against more innovative or experimental approaches to learning, or though she disagreed herself:

"actually I think you have to be more experimental because you can't just give them a textbook and get them to get on with it because, yes, then they'll run riot and rightly so, whereas maybe in a nicer school the kids will just do it"

Tanya, who led the research at Barnfield, expressed her own fears that the scope for developing a researching culture was limited by the restraints of its context and the demands of the day-to-day job.

"But I don't know whether we can push the staff any harder to get them engaging in research any more. Given what I said about the school, the staff work ridiculously hard. And I know all schools do. But I know some schools don't. And to divert some of their energies away even further. I know that sounds a bit short sighted possibly because I will talk myself into the other way as well. I would talk myself into saying that there is more out there that we can learn that will help our learners without a doubt. But I also think that sometimes there is more we could do in school to help our learners such as mark stuff. And sometimes our teachers don't always mark very well." (Tanya)

The suggestion here, is that research takes teachers away from the central activities and development of competencies that are needed to really help their pupils. Despite her own previous enthusiasm towards using research for professional development, her frustration was clear. Perhaps research was seen as providing innovations, new ideas, changes, but was not used in ways to help

teachers master the basic skills of their trade. Despite being a champion for research-informed practice, Tanya makes a comment about the need for teachers to do the simple day-to-day aspects well:

When seen alongside the comment on a key area to improve from the September 2013 Ofsted inspection, Tanya's remark was prescient:

> *"Teachers' marking and feedback do not always show students how they can improve their work. Students are not given enough time to respond to teachers' comments."*

Research and teacher leadership

Research activities were often linked to the exercise of leadership. For Faye, her involvement in an ALS had clear implications for the school:

> *"I would say, 'Yes.' [it will have impact beyond her department] I think it would be really important for some of the stuff we have done to be involved in whole-school training. And if that isn't – I suppose if it's not even discussed, I do feel like, 'Well why are we being asked to take part in something which asks you to put forward changes to whole-school practice?' And then it's gone, 'Oh, that's a nice idea.'"*

For Jade, the ALSs provided an opportunity to take leadership of the group based on her nascent interest and expertise in an area of relevance to the school (questioning). She was then encouraged to lead an ALS with a more senior colleague. Lauren describes how, in her ALS, the process was collaborative and this joint venture led to school-wide changes in the curriculum.

> *"And then I literally just, I started it [the action learning set] and then I just took a back seat. Because I am more interested in hearing what other people have to say about how we are doing it. And what I do for her every session is, for example, Alice ran that session that you came to, and we read an article and decided that that was the topic we wanted to discuss. And that is how we came up with the idea of making all the year 10's who had IEP [Individual Education Plan] in year 9, to be interviewed as if you were applying for a job. So that is what we ended up doing instead."*

She goes on to explain how the group fed back its recommendations to governors and the whole of the SLT at the school.

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Jordan, the mathematics teacher, mentioned how a survey he conducted with the children at Barnfield, about how the Building Schools for the Future (BSF) money should be spent, was presented to the local authority. Subsequently, this influenced decisions regarding aspects of the proposed new building works. The fact that Jordan was not on the senior management team, gave a clear example of 'distributed leadership' in action.

However, a further example reveals how the exercise of this leadership may not be consistent:

> *"I think if there was Vertical Tutor Groups, a house system; yes it would take time to re-implement and change in to but I think that would be to the benefit of all. And during the course of the two or three sessions we discussed a few things and I think we as a group thought it was a good idea, but we weren't powerful enough to change the whole-school."* (Ted)

Ted may be expressing a lack of real drive to influence such a decision; an acceptance that senior managers would ultimately decide what to do about this. Equally, he might be suggesting the lack of evidence made his position insufficiently supported. Other experiences from the interviews suggested that the membership of a senior member of staff on the ALS or EPD group had an influence on how the findings were seen and whether they were implemented.

Other systemic barriers to organisational learning

Incoherence and incongruity were exemplified when Faye describes how the need for the school to get students through examinations or curriculum milestones, meant that the personal qualities they were hoping to engender through R&D were left out:

> *"I would like to see more scope for students failing, or at least small failures that they can come back from. I think it's because there's a lot of focus on results and you justifying why your class has that result at that time. It means I certainly do a lot of chasing, chasing, chasing, reminding, reminding, reminding for my Key Stage four and five students. I mean I'd like to go, 'Actually you've got this amount of time, you can use me as a resource, if the work is not in by this date, it's not in. And we'll have to set a fresh deadline for that and you are essentially failing if you have not done said work.' I think that frustrates me sometimes because I'm not sure it's excellent practice for them in the future because I don't think at any other point in their life will they have this many people helping them out."*

Faye reflects on the type of work-based skills that they were trying to cultivate through their own ALS collaborative project and the demands placed on them from the rigid curriculum requirements.

Faith summed up this incongruity between policies/systems and practice as being a tension between the use of innovative teaching and the existence of assessments that dictated more conservative approaches, holding such practices back.

Whole school, Cross-departmental research structures (ALS and EPD).

Tools

Caring professionalism. Results judged as excellent by Ofsted according to contextual-value-added

Subject

Outcome

Object

Teachers trained through ALS groups and lead change from the beginning. School leaders join in/lead groups

Educating according to needs of local intake

Rules

Community

Division of labour

ALS are obligatory but staff join groups focus of choice. Groups adopt own criteria for improvement areas. SLT help enable change. Inward-looking?

Research community led by champion from senior leadership. Links with universities to support this

Distributed and collective leadership model. CPD organised for action research based learning

Figure 26   Old/Extant Activity System at Barnfield Community School
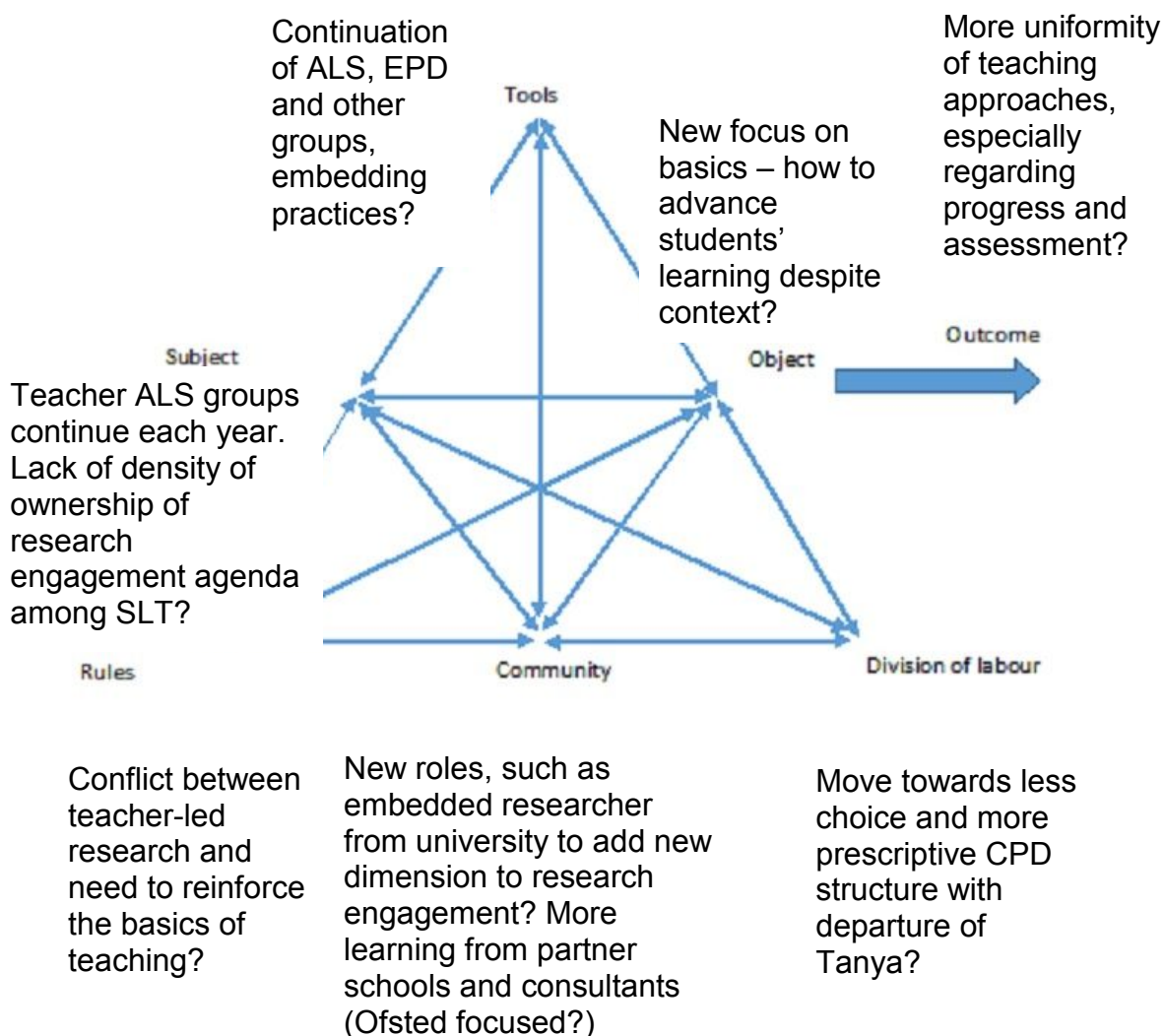
Figure 27 New/Potential Activity System at Barnfield Community School

The context at Barnfield was that of a highly energised, challenging professional environment. Tanya had established a learning culture, reinforced the action learning set CPD model with successive waves of new teachers who were often encouraged to stay on after completing their training. Tanya had thought this through carefully and introduced the system in phased steps, evaluating before continuing. As such, the existing activity system was characterised by a high level

of research activity and cross-curricular teams were encouraged to lead change. Those with leadership roles were often facilitators for the ALS groups but equally those with a particular enthusiasm or academic expertise often led too. Interviewees tended to reflect very positively on these groups, valuing the collaboration, albeit some not recognising these as 'high quality' research. The context for this was a change in the way Ofsted were to view the standards of the school and thus a revisiting of the extent to which students were progressing to the levels required to remain an 'outstanding' school. Ironically, while apparently highly 'ready' to undertake all their Teaching School duties, including having the most advanced researching culture among the Teaching School cases, they were under the greatest existential threat. Thus, there were several examples of conflicts, dilemmas and double-binds as the new Ofsted activity system infiltrated itself into the existing one (tertiary contradiction). Ofsted trained consultants were now judging teaching as 'good' and interviewees struggled to understand whether they were indeed 'outstanding' or whether they needed to change. The role of research to innovate and to empower was thus threatened as SLT begain to think about 'the basics' needing to be strengthened. Tanya, who has now left the school, was already wondering where to take things next with the research culture as a result of this. While acknowledging the potential for new avenues, such as using embedded doctoral researchers in TSA work, she also reflected on the time challenges to extending the culture any further. Given the extent to which these structures were driven by her enthusiasm, coupled with the subsequent removal of 'outstanding' status for the school, the school's development looks unclear. There is the potential for a new senior leader to extend the school's work with their TSA and university partners, equally there is a possibility the school's culture may become more conservative and focus on narrower outcomes for teachers and learners.

Chapter 6e – Trinity Green school (embedded) Research engagement built into activities, structures and culture

Background and details

A mixed, state comprehensive school, Trinity Green is quite large, with just under 1300 students. Located about 30 miles from the centre of London, the school is situated in a market town with a population of about 30,000. Trinity Green was formed by the amalgamation of two schools, Trinity and Green school in 1997. Both Trinity and Green schools had struggled with poor attainment and falling rolls for a number of years. A new Headteacher was appointed to lead the new school 'Trinity Green' and she brought staff at these two schools together very successfully by instilling a culture of professional collaboration and enquiry-/research-based learning. When she passed away in 2006, she was succeeded by the Deputy Headteacher. In August 2013, the school was granted permission by the government to open its own sixth form to start from September 2014.

Most pupils at Trinity Green are of white British heritage, with only a few students coming from minority ethnic backgrounds. A relatively low number of students are eligible for FSM (14.3%) and a higher number than average percentage of pupils is supported by School Action Plus or with a statement of SEN (11.6%). Trinity Green is a Specialist Science School and a Leading Edge School since 2003 and has been the recipient of a number of awards, including: Artsmark Gold Award; Investors in Excellence; International School Award; Investors in People Award and School Curriculum Award. These awards, as well as its commitment to research engagement, are all prominently stated on the school website.

Ofsted 'dashboard' data shows the examination results to be in the second quintile for Mathematics, Science and English for all schools and for similar schools, with the exception of Mathematics, in which it is placed in the third quintile for similar schools. Progress data for 2011 and 2012 shows that students from disadvantaged backgrounds appear to do worse than their counterparts at the same school: in English 57% of disadvantaged students achieved expected progress compared to 83% of other students, while in Mathematics the same statistics show a difference of 63% and 82% respectively. Trinity Green's most

recent Ofsted inspection report described the school as 'Outstanding' overall, however only 'Good' for the quality of teaching, including the use of assessment to support learning. Under the new Ofsted framework, schools that do not achieve the top grade for teaching and learning are no longer judged to be 'outstanding' overall. This also means that Trinity Green is not currently eligible to become a National Teaching School, despite having, as a Training School since 2003, many of the necessary structures, characteristics and practices of one. Trinity Green has been a member of a number of research-based links with external agencies, including two prestigious universities. It has also been the subject of a number of publications, featuring in a book on research engagement in schools.

Initial contact with the school and first impressions

Trinity Green was the last school to be contacted to take part in the survey and also in the interviews. Initially a conscious decision had been taken by the researcher to leave out this school, as it had been the subject of some other fairly detailed case studies. Camilla had also herself been involved in many national educational conferences and publications, through her work alongside the TLA, the NTRP and other educational consultants at two prestigious universities. Her publications and conferences had included work on practitioner research, continual professional development and pupil voice. However, the school provided also a potential opportunity for understanding what might be the most advanced research-engaged school in the sample. My own supervisor's contacts with the school and their own willingness to take part meant that I was able to complete the survey in March 2012 (mostly online) and eight interviews that were conducted over one day in early July of the same year.

Alan, the Headteacher, put me in touch with Camilla, the school's research coordinator, who enthusiastically arranged the researcher's visit to the school and a series of interviews. The visit to the school started with an informal talk with the Headteacher and later with Camilla (Lead AST – see below) and then seven other members of staff. Camilla was happy for me to pick out names of interviewees,

who, from the initial survey research, reflected a range of seniority and experience of research engagement. I was anxious to get a balanced view of the school and to counteract any suspicions I had that the survey had been selectively completed by the school 'research enthusiasts'.

Alan gave me an overview of the history of the school since its amalgamation in 1997 and his appointment to the Headteacher position in 2006 after the death of the previous Head. His commitment to the use of research to underpin the school's activities was very strong and he made it clear that the principle of collaborative professional learning, started by the previous Head, was one that he was committed to continuing. His own particular enthusiasm was for developing a 'Thinking School', in which all members of the school community engaged actively in independent and creative learning. Alan said that the school had a particularly low staff turnover and he was sure that the research engagement and commitment to staff development and collaboration contributed very strongly to this, although it would be hard to prove.

He commented that the school would like to have put in a bid to become a National Teaching School, having been a Training School since 2003, however the 'good' grade from their last Ofsted inspection in teaching and learning had prevented them from applying. He talked about the pressures that this inspection could potentially have placed on the school to take short-term measures but he resisted, confident that improvement would come about as a result of the approaches they were taking.

Characteristics of the survey respondents:

Of the 129 teaching staff at Trinity Green, 24 replied to the survey, giving a completion rate of 19%. Of these, only 29% described themselves as teachers, 37.5% as Management/TLR and 33.4% were from the SLT (Headteacher, Assistant or Deputy Headteachers|). The surveyed teachers were also very experienced, with only 1 person in the survey having less than four years of experience and over 45% having 20 years of more of teaching experience. Despite this, over 58% of this sample had no postgraduate qualification other than their first teaching qualification; a figure slightly higher than the average across the survey (54.5%).

Characteristics of interviewees

Camilla: Lead AST for Mathematics and for Research, the latter involved *"driving it forward and overseeing it and so on."* For a number of years Camilla had been in the training team, firstly responsible for PGCE teachers and later for NQTs. She was also qualified as a TLA Leader and verifier for their TLA centre. She was responsible for organising TLA research activity and accreditation and supporting people through the process of getting TLA certificates at various levels. One of Camilla's roles, she saw as a filter for research-based sources, some of which she would pass on to teaching staff or the Headteacher.

Sasha: Deputy Headteacher for pupil learning over the last two years and previously for staff development, Sasha had been at the school for eleven years having worked as a Mathematics teacher, a Head of Department and Assistant Headteacher at several other schools around the country before coming to Trinity Green.

Carl: Science Teacher, Head of Key Stage Four Science and in charge of pupil voice for the last two years. Carl had been teaching at the school for five years, having taught at the school initially for his PGCE teaching placement.

Daniel: Geography Teacher, Assistant Head of year nine. Daniel had worked at the school for around four years, including his PGCE placement at Trinity Green.

Lee: In charge of literacy, a French teacher and sometimes English too. Had worked at the school for eight years, having trained at the school through the GTP. Prior to this, Lee had worked in London as a TEFL teacher and also as an English Assistant in a Sixth Form College.

Madelyn: Geography teacher and Assistant SENCO and next year to become the Head of Geography. Madelyn had trained through SCITT at a school in Worcester and had worked at Trinity Green for five years. Compared to her experience there, she said that pupils were more respectful, interested in lessons and fun to teach. Madelyn felt that the leadership was much stronger at Trinity Green and support systems were very clear over behaviour problems with students.

Marta: Food, Textiles and Resistant Materials teacher, i.e. Design and Technology as a whole. She specialised in Textiles at GCSE. She had worked at the school for five years including her training year through the GTP.

Patrick: Head of ICT and Teacher Training for ICT. Patrick had worked at the school for twenty eight years, and therefore had experience working at the old Trinity school, before it combined with Green school to become Trinity Green.

Working atmosphere in general

A number of teachers mentioned how much they enjoyed working at the school, which seemed to back up the Headteacher's claims about low staff turnover and high staff satisfaction. Camilla sums up a number of these 'ingredients' at Trinity Green:

"I think there's a very strong sense of loyalty and belonging to the school. A lot of people have been here a long time. We all know each other very well. We have a very strong ethos of respect, which is what we share with the children. Rather than a list of rules we have that they respect each other, they respect themselves, they respect the environment. And I think really that works for the staff as well. There is a lot of respect that goes on. There is [sic] also opportunities to just take risks, I think, which I've found here. People are not watching their backs so much. People don't mind admitting that they don't know something or they've tried something and it didn't work." (Camilla)

By chance, one of the interviewees, Carl, had experience in his teaching placement at Greenmead Grammar school which was also surveyed for this thesis. While Greenmead also came out as highly research-engaged, Carl describes two very different working environments:

"I mean there was a difference in the ability of children so here is obviously very mixed ability whereas that was the top 3% of boys in [county]. But there was – and actually both schools offered me a job and I picked here because it just felt like a much nicer culture and a much better sort of – Greenmead was very sort of set in its ways, that's what it felt like. And it felt very much, 'This is how we do things,' whereas here it felt a lot more sort of inclusive but also everyone seemed to help each other, there was a lot more going on, there was a lot more ideas and people try this and try that."

Lee commented also on the range of services offered to students and to the wider community, after the school day, including a gym, sports' hall and swimming pool. All commented on the excellent culture of collaboration and professional learning. Sasha described this culture as very open and supportive, as well as very positive. Neither was this just about socialising, but a deep sense of collegiality and purposeful working relationships. This seemed to include an understanding that the Headteacher wanted to promote an academic culture among staff, thinking deeply about the issues surrounding their work. Management was perceived to be very clear, well organised and the use of data was well integrated into work according to interviewees. Opportunities for development and learning were plentiful and examples showed this in interviews as well as the survey responses.

Students were generally described as respectful, well-behaved, although often lacking in academic self-confidence; ambitious, but not in an academic way. Although the number of students claiming FSMs was low, pupils were not generally very well off, and some had to be convinced to claim their FSMs. Most students were white British and literacy levels were also said to be generally rather low. Sasha, the Deputy Headteacher felt it important to try to convince more students to apply to the top universities. There was also an acceptance that the worldview of the students should also be respected, a recognition that there were other routes to success than university. Although there are grammar schools nearby, Camilla claimed that some students actually chose to come to Trinity Green anyway, due to the Thinking School philosophy.

The school's research engagement characteristics

Trinity Green survey respondents showed the highest levels of agreement on each of the five sections of the survey. There was very strong agreement to the statement "There is a collaborative ethos of professional learning among members of staff" (mean of 1.75, where 2 = Strongly Agree and 1=Agree). Agreement to the statement "The school's culture encourages challenge and learning" was even stronger, with all survey respondents strongly agreeing (mean of 2). These responses were in accordance with interviewees' comments about the working ethos of the school under the strong leadership team.

Particularly striking responses were given to statements about time being made available to engage in research (see **Figure 28**); access to research-based resources (see **Figure 29**) and the presence of designated member(s) of staff for coordinating research (see **Figure 30**). Qualitative survey responses and interviews further clarified these areas.
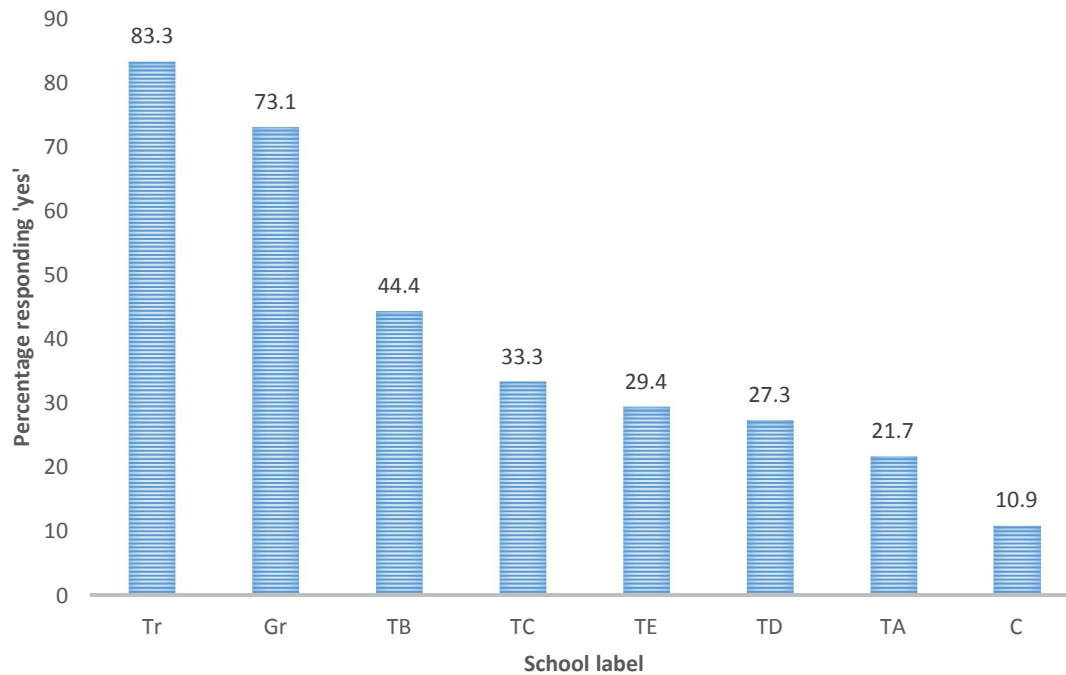
Figure 28 Time is made available to engage *in* research (n=350)
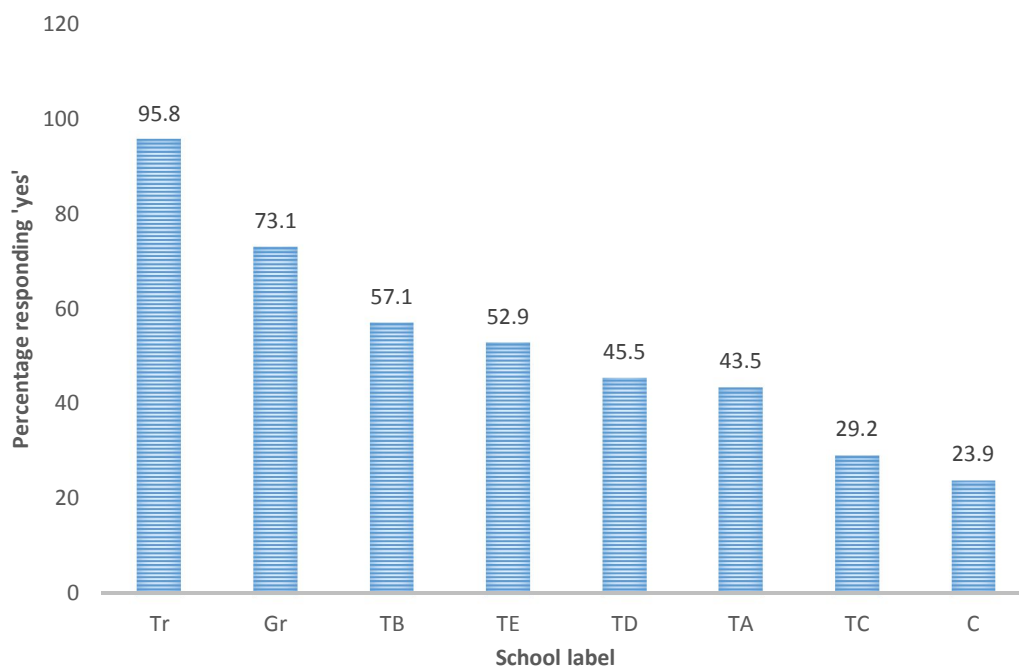
Figure 29 We have access to research-based resources (n=352)
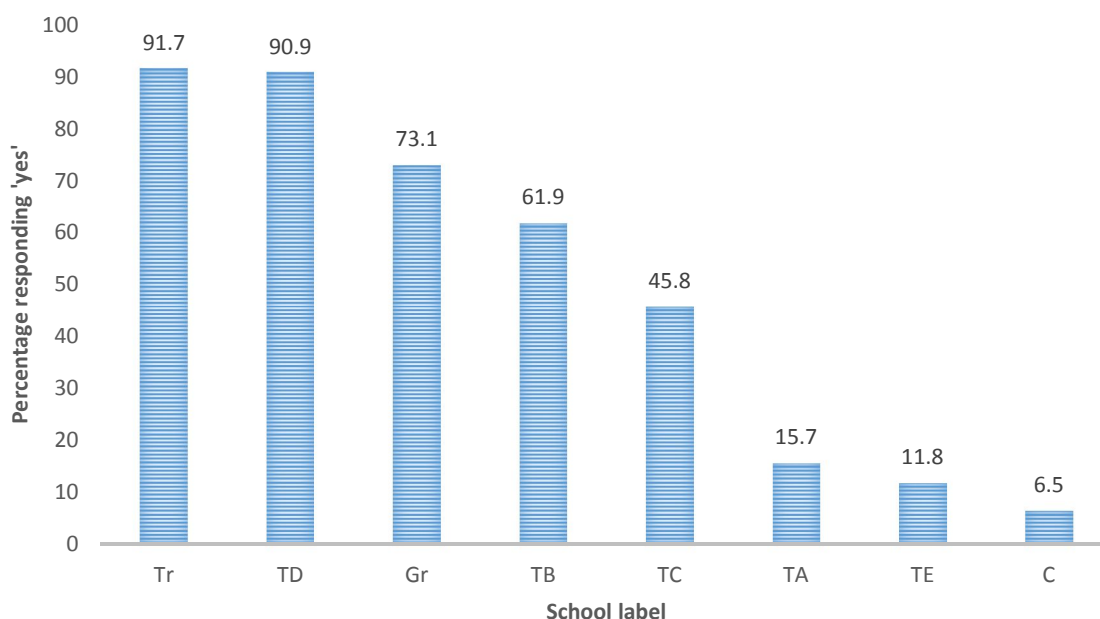
Figure 30 There is a designated member of staff (or members of staff) who is/are responsible for promoting research engagement (n=350)

Also, they had a high degree of access to 'mentoring support' (see appendix 14). Time for research seemed to be made possible in a number of ways. Camilla had built up a structure for NQTs to take TLA enquiry projects as part of their learning experience. These provided a structure to carry out mainly small-scale professional development focused projects. Having several members of staff trained as mentors and assessors meant that Level 1 and 2 research could be carried out within the school itself. The school was able to require all staff to complete at least Level 1 as part of the NQT year and then others could go on to further research as part of one of the school's own R&D groups. The possibility also existed to gain enough credits on this scheme to count towards MA courses. The sheer number of staff who had completed or were trained with the TLA structure meant that there was ample support to anyone who wanted to do their research.

An R&D group met weekly, on Mondays. Some senior leadership and middle leaders were required to go; otherwise others were able to attend voluntarily if they felt they could contribute to the group or if they were interested. These were usually cross-curricular, encouraging wide membership. Members of the SLT started their R&D groups by referring to published research. It was then up to the group to make sense of this for their school context, in a process of reading,

trialling and adapting that clearly involved engaging both *in* and *with* research. At departmental level, research was routinely discussed in weekly Thursday meetings. One example in the interviews was of a teacher sharing some learning from her MA course.

A smaller but significant cohort of teachers had taken MA qualifications, with a visiting lecturer coming from a nearby university to teach a small group. Due to funding cuts this arrangement was no longer available and teachers would have to go in to the university to do these courses in future.

Specific encouragement to access research was given by Camilla in her role as Lead AST for research. She looked for suitable resources, some were passed on to the Headteacher and others went to teaching staff. Camilla had been involved in one of the school's first initiatives, which was to incorporate the use of research lesson study in the Mathematics Department. She describes her engagement with outside academics on the project and a clear, academically-grounded focus to enable students to engage in more effective learning dialogue. When asked about the existence of a member(s) of staff responsible for coordinating research, 91.7% responded in the affirmative. Trinity Green was unique among the surveyed schools in that a range of members of the senior management team, the Head and also Camilla, the AST lead for research, were all named. It became clear from the interviews that all members of the senior management team felt they had a role to play in research engagement.

The regular inclusion of research consultants in work at the school, was also a notable feature of Trinity Green. They came in to provide critical friendship on projects, to advise on background research and also conducted data collection, such as interviewing students about student voice issues. The school also welcomed outside speakers; the Thinking School aim provided a focus for a number of such initiatives.

Trinity Green has long been keen to learn from involvement as the participant of research projects too, including the 'learning how to learn' project led from the University of Cambridge.

The level of research activity among respondents was very high. Over 90% of those surveyed had been involved in research activity at the school, over 70% had carried out their own research. The sampling bias in the survey towards more

senior staff may have had something to do with this. Over a third of those surveyed had completed TLA levels, four mentioned MA programmes, including a Master of Business Administration (MBA) and an MA in Science Education and one in Educational Audiology, two others mentioned a particular university, without stipulating the type of course.

The overwhelming majority of surveyed staff agreed that the school based some of its decisions on research evidence (95.8%). Examples of research-informed decisions given to support this assertion included:

- *Developing a Thinking School based on research around Costa's 'Habits of Mind' and others such as 'Thinking Hats' (de Bono)*
- *Revision strategies*
- *Acoustic improvements in the school*
- *Using Bloom's taxonomy to promote higher order questioning and thinking skills has also been used as a steer*
- *Rewards policy for pupils*
- *KS3 pupil feedback on ICT use inside and outside of school*
- *Engagement of particular cohorts e.g. boys or Gifted and Talented (G&T);*
- *Staffing and timetable considerations based on needs of pupils*

Research literacy and skills were evident among a number of staff surveyed and interviewed. For instance, Patrick described his involvement in two national research projects which included writing a bid for funding. Other surveyed teachers cited overseeing projects, organising and developing activities and resources, conducting research sharing workshops and working with a research consultant. Eight teachers mentioned their involvement as participants in research looking at ways to encourage pupils to study physics and science post-16.

A number of universities were mentioned be survey respondents and many of these appeared to be collaborations on specific initiatives. The interview with Camilla, revealed a history of links with different Higher Education Institutions (HEIs), including one on learning how to learn, taking ITT trainees from another university, and taught MA programmes at the school. Some survey respondents mentioned a partnership with a university that involved working with four other schools to develop materials.

Well over 80% of respondents to the survey agreed that the school was committed to sharing the results of its research both within and beyond the school.

There were numerous references to contributions to external partnerships, networks and publications (see appendix 18). There were clearly many ways for research activity to be shared among staff, at every level of seniority. One survey respondent talked about how the Headteacher contributed to staff bulletins and often explained the research behind school decisions and policies. More junior members of staff could even share the results of small-scale research projects at INSET meetings.

The school as a research-engaged learning community

Camilla, the research coordinator at Trinity Green, had a clear idea of how the school was a PLC. Her examples resonate with some of the key characteristics of PLCs, such as collective responsibility (for students' learning); collaboration in developmental activities and reflective professional enquiry (Stoll, 2010). For her, research was seen as central to learning; it was about taking active responsibility for making sense of knowledge, rather than accepting policies thoughtlessly.

> *"I think we see ourselves as a learning community and everyone is still learning. And the way that you learn is through research. And that's what we call research anyway. As a school we've never been the sort of school that just takes an initiative or just a government file folder telling us what to do and we just go away and do it. We tend to make things our own. So if there is a recommendation that something is done we'll look at it, we'll read it, we'll try it out. But we'll try it out and see what works and then we'll adapt things."*

Responses about the culture of learning through research were consistent across the surveyed staff and by interviewees at Trinity Green. The shift towards collaborative practice and learning through enquiry created an openness to the use of research instruments and practices and the inclusion of outside researchers in the decision-making and practices of the school.

The use of 'Research Lesson Study', early in the lifecycle of the new amalgamated school, illustrated many of the features of the school as a learning community:

> *"It's like action research in that it's a cycle. You would try something and then you would learn from that… We just took that you were doing some action research. You tried something out. You focus in on the pupils…And based on what you see there you might then go and teach another lesson, maybe to another class, maybe back with that class, and develop it.*

> *"The thing is the teachers plan the lesson together. So it takes the spotlight off that teacher.*

> *"So you're not watching that teacher and how well they've planned the lesson. It's a joint effort. And then you're not watching the teacher teach it, you're going in and you're seeing the pupil's reactions to the lesson."* (Camilla)

These aspects of collaboration, enquiry and the focus on improving practice are features of what has become known as JPD (Fielding and Britain, 2005). These were clearly in line with the principles the first Headteacher was trying to inculcate in the new school. Another aspect of the school culture was the de-privatisation of practice that is a hallmark of PLCs (Kruse, Louis and Bryk, 1994):

> *"So, yes we do get observed, generally I would say quite informally quite a lot. Within the department of geography we are all quite happy to wander in and out of each other's lessons anyway. So, we do try to be as open as possible. A teacher that doesn't want you in their lesson in the department always, I think maybe they're struggling with their class or something."* (Madelyn)

Madelyn makes a point reminiscent of the teachers at Dewey's laboratory school, i.e. that the culture of openness and collaboration becomes difficult to opt-out of, because peers come to expect it as an accepted part of the professional culture. The fact that Trinity Green was a Training School, meant that staff were accustomed to being observed by both managers and trainee teachers. The inclusivity of the learning community is also exemplified in an assessment exercise in which external staff from TLA came in to assess the enquiry projects of some of the teachers at the school. In the discussion groups that formed part of this exercise, the Headteacher joined in to discuss the findings and implications of the projects alongside new members of staff, including NQTs. A feature of Trinity Green was the high level of trust by senior leaders in staff:

> *"But again once you've got permission and stuff, because it's obviously a research project, you get permission from parents and stuff like that. Once*

you've cleared that with Andy, 'Go, do what you want, it's fine, it sounds like a good idea.'" (Carl)

The use of research as a term to explain a wide range of activity

There was a sense that much of Trinity Green's school development and professional learning activities were defined by staff as 'research'.

"I think it [defining things as research rather than evaluation or another term] adds a uniqueness and also the awareness that you're going to share it more, I think. I think possibly research in isolation wouldn't be of any value but I think the possibility that you've been given that task whereas, as you say, evaluating it seems to be something that's less likely to be published, less likely to be shared, but research should. We do pick up on new areas of questioning, of thinking, and those areas – so I suppose if we're researching into any new element in pupil learning then it's going to be deemed to be researched. And, well, it helps, I think the title research probably does help." (Patrick)

Patrick implies that the label of 'research' suggests a greater obligation (compared to evaluation) to make this work public, to share it. Marta at Trinity Green, also explains the role of a research 'frame' to help 'make the familiar strange':

"[referring to something as research is better] Because if you think about yourself you always put it into your lessons and you put it in that context. Whereas if you've got to think about it as research, you just take a step back, I think."

In the interviews, staff often showed a nuanced view about whether their activities might be properly counted as research. For instance, Carl describes the school's R&D group:

"think the things we do in R&D, it's sort of a bit more interesting, I mean they are research in the way that we go and explore some ideas and get something new, but there isn't really that kind of – or I don't feel there's that grounding in the literature. There's also often – sometimes that end process is a bit fuzzy, so it doesn't necessarily come back to, 'We've concluded this; this is what we've found out."

For Carl, the R&D process produced context-based and useful information, developed around a problem of practice and the output was less formally prescribed (Gibbons et al, 1994).

However, Marta explains how her involvement in a formally produced and structured piece of research for the TLA had some advantages too:

"I think that it pushes you. Any kind of learning pushes you to come out of your comfort zone. Because you get so wrapped up and busy in day-to-day life and keeping on top of it that it makes you look at the bigger picture. Because you become quite blinkered, don't you really?" (Marta)

Sasha, at Trinity Green, gives an example of how a theoretical framework for learning helped develop a more sophisticated analysis of teaching approaches:

"So we've asked teachers to map these underlying concepts to build the children's thinking, because to learn that stuff you've got to think hard. It's not like learning that Henry VIII was on the throne, blah, blah, blah. So we've talked a lot about Bloom's taxonomy as well through The Thinking School, that there is the retention of facts but then there's the understanding, the application of them, evaluating, synthesising, being creative."

Later, Sasha explains about the school's multiple forms of research engagement and how teachers might incorporate these into practice:

"So I think that you have to have quite rigorous monitoring processes and we do have those, but not rigorous in tick list, 'Are you doing it or not?' approach, but much more, 'What is actually going on? What are the children learning?' So I suppose the model I see is, here's a good idea, you know, teachers are always keen to have good ideas. So if P4C [philosophy for children] or a thinking map, a double bubble map for comparisons, is a good idea and it fits with the concept that those teachers are trying to deliver, they will use it. But I don't want them having to do an Edward De Bono six thinking hats for some obscure reason that doesn't really fit.'

Sasha's example reveals a few points: the importance of relating external knowledge into existing knowledge of practice and also to the context. It also reveals a growing use of in-house language, some of which clearly reflect examples of knowledge that has been promoted at the school. For instance, P4C was from a recent speaker who came to the school. While this may be an example of the kind of professional language that David Hargreaves suggested was an indicator of a professionalised teacher, the extent to which these approaches were properly evaluated and tested was unclear. For instance, Madelyn commented on the use of Visual, Auditory and Kinaesthetic (VAK) approaches to

teaching, which have been discredited as neuromythologies (Geake, 2008). Such examples may point to the limitations of a school-based approach to research without adequate critical engagement.

Nevertheless, the use of a 'research as learning' lens led to a refusal to follow a 'tick box mentality', of superficially implementing ideas introduced from the government or elsewhere, such as by Ofsted. School change was about teachers having a nuanced ability to state the rationale and impact of what they were doing. Research was seen as a way of constructing knowledge and this in turn helps set the school's own direction. This very much reflects the tradition of Lawrence Stenhouse and the later CARN movement, in that idea of research was imbued strongly with the notion of agency.

The Thinking School

Importantly, researching was seen as an integral part of the teaching role at Trinity Green. This was seen to connect staff not only with each other but also with pupils, in an inclusive learning community. Central to this was the notion of a thinking school:

"It's his [the Headteacher's] absolute passion, and that influences what goes on. So when he took over as Head, that was his vision of a Thinking School, a school where children were challenged, thinking all the time, getting more confident about their ability to problem-solve, to engage with different issues…a consistent, whole-school approach to the cognitive development of children." (Sasha)

Sasha also explains how the school was encouraged to build a shared sense of what this meant to them in practice over the course of several years.

The connection between teacher enquiry and work with pupils was also evident:

*"Definitely [there is a connection], I designed the year seven and year nine enquiry work specifically to mirror their GCSE work because I do think it's an important set of skills to learn." (*Madelyn)

Lee's approach to developing literacy in his new whole-school remit, which was also a level 2 TLA enquiry project award, gives a sense of how he was using a research-informed approach. He explains how to investigate the issue he enlisted help from various departments as a development exercise. He also spoke to the

librarian and used prior knowledge gained from his training as a language teacher. His view of learning was shaped strongly by his systematic enquiry approach and led to suggestions for classes for students who needed to catch up in literacy:

> *"[But] it was six to eight pupils in a class, and I felt that the learning that had to be done was… Something in terms of the social interactions, and just learning how to… To be honest, learning to take turns, learning to listen each other's points of views. Those sorts of things were just as important as actually whether they were improving their spelling."*

Lee essentially elaborates a social pedagogical view of learning literacy (Bryderup *et al.*, 2011). His example shows how research-informed practice was deepening and helping him to construct his own theoretical model that was beginning to be shared with colleagues. The latitude he had to formulate his own, informed view of the learning process was an example of how staff were gaining ownership of the overall enriched version of teaching and learning that the Headteacher was hoping to embed.

Teacher leadership through research

At Trinity Green, they had established a research-sharing meeting where experienced staff could share their investigations on MA courses with NQTs who were taking part in TLA research modules. Camilla, the research coordinator, had set these groups up so that the NQTs were running each group, and therefore able to exercise leadership of this knowledge exchange exercise.

Lee mentions as a junior member of staff taking a whole-school role in literacy and using this to talk to people across different departments. Here, leadership and research were combined, firstly appointed on a leadership payment (TLR point) to lead developments, Lee also used his TLA research module as an exercise in how to lead change at the school. He mentions his struggles in learning how to communicate and involve different members of staff:

> *"So I remember one aspect was, it was the first time ever, having been given that job, I had to be asking people for things. I had to go up to Heads of Department, who I was on friendly terms with say, and if I wasn't asking them for a work job, I would be able to normally just chat to them, and they would*

stop and chat, and we would sit down and have lunch. Suddenly I noticed people's faces changing, and looking at me as if, 'You are interrupting my lunch talking about work, I don't like this.' I realised that I was getting blanked sometimes, and rebuffed at others, and it really shocked me. Someone with experience would say, 'It is predictable.' But I didn't expect that at all."

Lee then goes on to suggest how his TLA module, which was about leading change, spurred him to come up with strategies, such as asking departmental heads to nominate people to be involved in his initiative. He found out about pupils' reading habits from the librarian and suggestions for good textbooks to use in this whole-school literacy initiative. The research remit thus seemed to empower Lee to take up developments that went beyond his formal position at the school.

Marta describes the culture of the school as permissive to the idea that younger or inexperienced staff can, using the vehicle of research, show substantial leadership on knowledge transfer:

"GTPs, NQTs, if they want to run an INSET session because they've been doing a really interesting research task course, they're allowed to lead it to the whole staff"

Ofsted as a parallel (subordinate?) system

Madelyn at Trinity Green gives a good account of lesson observations done internally and how these are not primarily Ofsted-driven. At Trinity Green, there were signs that the accountability framework was more subordinate to the dominant culture of professional learning, where peer feedback was welcome and risks taken.

"I think we are encouraged to go outside our comfort zone with our teaching and they always say that if you are being observed try and do something which you wouldn't normally do. It doesn't matter if it goes well, 'wrong' is the wrong word."

Madelyn contrasts this approach to that of Ofsted observations:

"I think it depends who's observing you. When it was Ofsted, I think everyone obviously did want the grade one but you're not going to necessarily go outside your comfort zone. When it's an internal it is in some ways it's [sic] a good idea to try something a bit different, I think as well, because that way you get feedback on it."

Madelyn's attitude was confirmed by an informal interview with the Headteacher conducted earlier in the day, in response to my point about the school's 'good' grade for Teaching and Learning. He was aware that the requirements to become a Teaching School included the need to obtain an 'outstanding' assessment on this criteria (the school had outstanding overall from their most recent inspection but this would not be possible in the new framework where the Teaching and Learning section had to be outstanding too). His comment was that the staff were aware how they could teach in a way that would target certain borderline students, to short term gains that would have satisfied the inspectors but that this was not consistent with their overall educational philosophy. He was satisfied that inspection grades were not the most important consideration, although conceded that to achieve a 'good' as a minimum was still important. Overall, far fewer references were made to Ofsted in the Trinity Green interviews than in other schools. While this is not conclusive, given the looseness of the interview format, I was left with a clear impression that Ofsted considerations were not, at least for the moment, paramount in most people's minds.

Sustainability of research engagement

It is interesting to note that Trinity Green staff gave the greatest perception about having time available to engage *in* and *with* research. All this, despite not having formal Teaching School status (where research engagement is specified). Perhaps the freedom from the additional responsibilities of Teaching Schools allowed for more time to engage in enquiry based learning. However, it's potential for further development as a researching institution is unclear and the drivers behind it, being partly a historical one to unite two schools, needed to be consistently nurtured. The apparently low turnover of staff (according to the Headteacher) is also a factor that may help the school to retain its culture. The richness of the school's professional development, Thinking School aims, student voice, engagement with research and leadership development, all point towards its retention as a site for research-informed practice in the future. The depth of commitment to research engagement among senior leadership also bodes well for the retention of such a culture. What is less clear, is the availability of externally-supported research, in particular the universities with whom the school had enjoyed many previous fruitful relationships.

Summary of extant and potential activity sytems in Carlton High School

Multiple, whole school, Cross-departmental research structures through R&D meetings, lesson study, MA courses and TLA programme

Tools

School judged as 'good' in teaching and learning by Ofsted but setting its own agenda for excellence? Low turnover of staff

Subject

Object

Outcome

Teachers used to talking about research. Research as teacher leadership SLT all with research-engagement role

Research used to define Thinking School

Rules

Community

Division of labour

Multiple opportunities to engage reinforced by tradition of collaboration within the school. School as a 'thinking school'

Addition of H.E. consultants to teaching and leadership. Students integral to learning community

Highly distributed leadership. New teachers quickly learn to take lead if they have expertise. Highly collaborative

Figure 31 Old/Extant Activity System at Trinity Green School

Multiple, whole school, Cross-departmental research structures through R&D

Further refinement of Thinking School approach. Culture of continual learning

Continues to set its own agenda for excellence? Teaching and learning to be judged outstanding at next inspection?

Teachers used to talking about research. Research as teacher leadership SLT all with research-engagement role

Multiple opportunities to engage reinforced by tradition of collaboration within the school. School as a 'thinking school'

Addition of H.E. consultants to teaching and leadership. Students integral. **New 'critical friendship' role with university to build up rigour of research?**

Highly distributed leadership. New teachers quickly learn to take lead if they have expertise. Highly collaborative

Figure 32 New/Potential Activity System at Trinity Green School

The research culture at Trinity Green had apparently been reinforced for around a decade and was stable in the sense that two failing schools had become one outstanding one. This had been achieved by using enquiry and collaboration as the key mode of its organisational learning strategy. Teachers and leaders felt challenged but professionally satisfied. Intake to the school was healthy and

research engagement was possible through many avenues of accreditation and professional learning structures. These were reinforced by a flat hierarchy that encouraged teacher leadership through enquiry. The context for Trinity Green's activity system was perhaps the most stable of the case schools. It had found ways to be research engaged without over-reliance on expensive support. The senior leadership all appeared to take their research engagement role seriously and Camilla was able to coordinate and mobilise strategies from her unique role at the school. The schools' inability to become a Teaching School (due to 'good' grade for teaching and learning) possibly sheltered it from needing to take on significant new roles in a TSA. There was also no sign of an impending Ofsted inspection, and the Headteacher appeared calm about the school's general direction towards meeting the needs of a future one. It will be interesting to see if a future Ofsted team continue to agree with their overall status as 'outstanding'. The search for a new object of activity perhaps centred on the need to further develop the idea of a Thinking School'. The lack of rigour about the research base perhaps meant that this was at risk of being many things to different people. The lack of TSA status may make the school less interesting as a site for collaboration with a university that they had links with in the past. Nevertheless, the inclusion of students to the whole-school idea of a learning community and the quest to find a more rounded understanding of educational and learning aims gave purpose to the school's enquiry approaches. Most notably, the school's staff adopted a discourse of research and the tools of research to go about their business. This underpinned an organisational learning approach that ought to be successful in adapting to new developments and new contexts.

Chapter 7 – Organisational learning at the case study schools: Expansive learning through research engagement

This chapter concerns itself with the five case study schools as research-engaged learning organisations. Here, the intention is less to make precise comparisons between schools than to draw out the broad, shared learning about the development of organisational learning mechanisms and the process of development of a researching culture. Essentially this chapter concerns itself with research questions 2 and 3:

2. How is research engagement linked to the development of educational practices at the case studies of research engaged secondary schools? Specifically:

2.1 What is the relationship between the professional learning culture at the case study schools and its other research engagement characteristics?

2.2 How (and to what extent) does research-engagement influence organisational learning in the case study schools?

2.3 How (and to what extent) do practitioners in the case study schools influence policies and practices when they engage in and with research?

3. How have the case study schools' researching cultures developed over time and how might they develop in the future? Specifically:

3.1 What was the origin and purpose of research engagement at the case schools?

3.2 What is the potential for the growth of the schools' cultures of research-engagement (and what might this next stage look like)?

What is the relationship between the professional learning culture at the case study schools and its other research engagement characteristics?

Integrating the findings of the survey with the data from the follow up schools, allows observations about the extent to which each school exhibited signs of PLCs, i.e.:

1. shared values and vision;
2. collective responsibility (for students' learning);
3. collaboration in developmental activities;
4. the promotion of group as well as individual learning;
5. reflective professional enquiry;
6. de-privatisation of practice (Louis and Kruse, 1995) through observation, dialogue and trying out new ideas (Stoll, 2010, p. 153)

Each of the 5 case schools can be positioned in a quadrant, in terms of the strength of their professional learning community (PLC) on the one hand, and the specific research engagement characteristics on the other (RES). RES consists of high levels of research activity, structures for engaging in and with research, the presence of staff to coordinate research activity and structures for building capacity in research. Relative strength (+) or weakness (-) on each dimension is shown in the figure below:

RES+

	Low PLC/High RES Carlton	**High PLC/High RES** Trinity Green Barnfield	
PLC-	**Low PLC/Low RES** Croxham	**High PLC/Low RES** Ashbury	**PLC+**

RES-
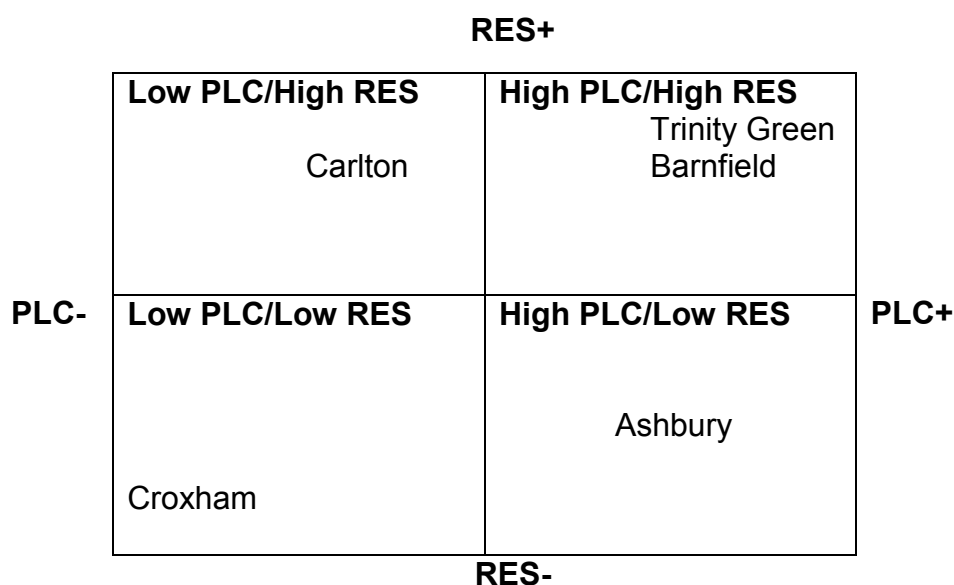
Figure 33 Professional learning community and other research-engagement characteristics (RES)

Croxham School exhibited low PLC and low RES characteristics. Margaret the Headteacher was clearly trying to change the professional culture through her research bursaries and changes in middle leadership responsibilities. These bursaries were intended to be driven from an earlier appreciative enquiry exercise to ensure whole-staff consensus, although the foci of the enquiries appeared to relate strongly to Ofsted-identified issues. Simultaneously, there was an intensified culture of performance management, in which individual accountability for results was emphasised. There was a perception that some existing members of staff, including in the senior leadership, might hold back changes that Margaret wanted to make. Therefore, the bursaries gave handpicked ambitious staff the opportunity to challenge existing practices.

As a recently appointed Teaching School, Ashbury had an underdeveloped system of research engagement but high levels of professional challenge and collaboration. Within certain departments, enthusiastic staff appeared to exercise a degree of autonomy to engage *in* and *with* research. However, this was not systematically coordinated across the school. In many other respects, the school showed qualities of a strong PLC. Two of the interviewees subsequently developed research coordination roles at the school and this area showed signs of developing within the organisation and across its TSA member schools, as a follow-up interview with Neal revealed in 2013. This augured well for a future connection between the professional activities of staff through research activity, linked to changes to school decision-making and innovation.

At Carlton, the school had a number of interesting features that superficially would make it look like a strong PLC, including peer review, learning walks and routine sharing of practice. However, the strong reputation of the school appeared to rest on its relentless focus on meeting and anticipating the demands of Ofsted. While there were some isolated examples of deep learning through research activity, there was less of a sense of collective responsibility for students learning through a shared ethos. In this sense PLC was low but research activity itself was relatively high, as well as the existence of senior leaders with a research engagement agenda (albeit not specifically recognised among staff). Research activity here appeared not to lead to innovation and the hierarchical leadership

structure dominated the professional learning environment. Individuals' research was thus not necessarily linked to changes in practice.

Barnfield Community School had developed strong systems for research engagement, driven forward by one champion who had a senior leadership position. The strong collaborative culture was linked to structures for an enquiry approach to professional development. However, while these structures and the culture were advanced and well understood, this was under threat for two reasons. The first was the impending Ofsted visit, in the knowledge that new measures of success were likely (and it turned out to be the case) to 'downgrade' the school, thus threatening its Teaching School status. Secondly, the over-reliance on one key member of staff to drive research engagement, who subsequently left, meant that these approaches were vulnerable to extinction.

At Trinity Green, there was a sense of a culture of research engagement that had been thoroughly embedded. The culture of collaboration was 'in the DNA' of a school that was created by combining two previous schools and the glue for this collaboration was research and enquiry. All senior leaders were committed to this approach, and many existing and longstanding staff in a school with an apparently low staff turnover were familiar with the structure. The TLA helped to structure an enquiry approach to learning used with NQTs and then other routine meetings were used as R&D sessions. Many of the staff had taken part in externally-funded research and the research coordinator was a useful middle layer in a school where research engagement was a known focus. The learning community focus extended beyond staff and was mirrored in the way students were encouraged to learn and take part in the 'Thinking School'.

Below, I examine the extent to which activity systems were 'expanding' through research engagement. Through this, a smooth 'development' from 'emerging' schools to 'embedded' schools is not taken for granted. Rather, systemic elements of the activity system, driven by historic contradictions are examined and the extent to which these showed potential for expansive learning is assessed. This way, there is as much a possibility of destruction of aspects of the professional culture as there is of growth of professional agency or transformation through research engagement.

How (and to what extent) does research-engagement influence organisational learning in the case study schools?

The expansion of elements of the activity system through research

The interviews revealed separate activity systems that were competing for space in the practice of 'schooling'. Research can be seen as an external activity system that added elements of greater complexity to teaching and leadership practices. In addition to research activity, there was a pervasive, parallel trajectory of practice directed at objectives translated from the external accountability framework of Ofsted. At times other activity systems were apparent too; those of teacher training and mentoring; separate disciplines of staff who supported students with special educational needs and also when management practices conflicted with teachers' aims.

According to Leont'ev (cited in Virkkunen, 2009), the 'need state' that is created when an activity system changes its context creates instability. Secondary contradictions between elements of the system push it towards a 'bifurcation point' and this leads to the search for a new object of activity (Virkkunen, 2009). Here, elements of other systems become modelled and evaluated, in the process leading to contradictions and tensions between the old and new. As the new 'germ cell' (Virkkunen, 2009, p. 150) of a new object becomes embedded into practice, these can give rise to new quaternary contradictions, in which there exists one central activity system alongside another neighbouring one. In the case study schools, the changes in context included modifications to the Ofsted framework and the knowledge that an inspection may happen soon (in the cases of Croxham and Barnfield). In the cases of Barnfield, Ashbury and Carlton, their new Teaching School status gave additional responsibilities to school staff and changes to the emphasis of various aspects of practice, such as promoting and using research. There was also the wider context, as elaborated in the introduction of this thesis, which included a focus on academisation and the onus on schools to be part of a 'self-improving system'.

In the pursuance of new 'objects' of schooling, Activity Theory provides a framework for exploring various elements of the activity system that had been or

were being modified at the case study schools, namely expansion to elements of the community, instruments, rules and division of labour.

Within a (more) research-engaged community, we can see the meaning of people's roles changing. These are sometimes existing members of staff whose role has been expanded to include a wider school remit, dealing with a range of staff beyond their immediate department. At Trinity Green in particular, the use also of outside staff brought an impartial view on decision-making and helped include student voice. The list in **Table 14** below shows some examples, using Activity Theory elements, community, actions and outcomes, and rules; while these give an idea for comparison of the cases, they are not intended to be a systematic league table through which to rank the schools.

Table 14 Activity system elements of a research-engaged school in expansive learning

School	Members of an expanded 'research-engaged school' community	Rules, Instruments and division of labour	Actions/Outcomes
Croxham	Middle leaders as researchers	Bursary aims, arising from school development plans (Ofsted focused). Reading research, conducting enquires, looking at other school practices	Wider school remit-changing practices and changing culture, to improve school, especially to pass Ofsted inspection
Ashbury	Emerging research coordinators Learning mentors (part of new social inclusion team, - includes SENCO's psychotherapists and other professionals)	Stimulating interest in research, encouraging JPD activity (lesson study). Neal used AST time to go to IOE library. Six week intervention programme for targeted students	One as champion for research (later started journal club, for instance) other coordinating across-Alliance research activity Meeting multiple needs of students with emotional, behaviour and learning difficulties
Carlton	Senior leaders coordinating alliance activity Departmental Head using outside academic support Peer reviewers from alliance schools Students	Peer review and staff development across partnership schools Enquiring into own practices and bringing in academic to advise on teaching science concepts Observing lessons, scrutiny of documents and interviews of staff and students Trained to observe lessons and give feedback	To raise performance across teachers in the alliance schools Developing practice in science teaching across the alliance schools Identified literacy as key theme for improvement ?
Barnfield	Research coordinator (Senior Leader External peer reviewers Action Learning Sets (NQTs) and Early Professional Development (2nd/3rd year teachers and others) groups Students	Encouraging research engagement, filter for reading. Observing lessons and departmental plans Developing areas of interest across the school. Twilight sessions throughout the year. Leadership open. Consultation on new building plans in survey	Enquiries written in brief reports, celebration day Advising on compliance to new Ofsted framework Increased understanding/practice in themes chosen. Personal and/or school wide Adapting building plans based on student voice
Trinity Green	Research coordinator (Middle Leader Senior leadership with research engagement roles External research consultants Librarian as literacy advisor NQTs	Encouraging research engagement, filter for reading Coordinating R&D sessions which included reference to external research Interviewing and surveying students or staff Provided information about text books to encourage literacy TLA level 1 enquiry projects	Linking enquiries to professional development. Filtering research 'up' to senior leaders Enquiry approaches encouraged in open challenging professional dialogue. Cultural champions for the Thinking School Providing research related expertise and an impartial external view, e.g. on student voice matters Cross-school advice built into new literacy guidelines Topics of choice – impact?

Table 14 does not give an exhaustive list, as there were numerous examples of the involvement of universities in research projects, of teaching on MA courses that may have been highly significant, although temporary arrangements. There were also many examples of teachers who were given leadership tasks through research, to which I will return later. The development of research engagement, presented opportunities for additional members of the community, such as external research consultants to be brought in, or existing members, such as librarians or middle leaders to adopt expanded roles. For instance, Lee at Trinity Green school, explained how part of his approach to his research was to gather information from the librarian about appropriate text books for teachers to use in developing their students' literacy. Other examples included involving Learning Mentors in a newly configured Social Inclusion team and parents being given a voice on the use of laptops to aid learning at Trinity Green and peer reviewers who identified literacy as a key area for JPD with Carlton and their partner schools.

Many of these activities adopted researching 'rules' to practice, such as collaborative ALSs, or the use of observation, peer review and reference to published external research in R&D groups. Lesson study and action research were frequently referred to in the survey and interviews. Researching rules of practice were part of the familiar parlance in Trinity Green. Thus, teachers referred to senior leaders leading R&D sessions, or TLA enquiry units being taken by NQTs.

There were also some examples of how research was used to give a voice to pupils: At Barnfield Community School, Jordan surveyed students about how they felt the new multi-million pound site should be developed and these views were incorporated into governors' decisions about the new building design. At Carlton, students were trained to become 'Learning Partners' in which they were shown how to observe lessons and give feedback to teachers. Research activity also led to increased connections between teachers in different departments and teachers at other schools, including TSA members. Cross-departmental development of practice was particularly strong at Barnfield due to its mixed professional learning groups with open membership. The same was true at Trinity Green where regular R&D meetings could be attended by any member of staff. However, at Ashbury it was more the case that departments appeared to work in

silos and ideas about teaching practice were developed mostly in relation to the teaching of their own subject.

Besides Trinity Green's use of external consultants, examples of researchers, lecturers or other university staff being directly involved in working with school staff were infrequent. When these were mentioned, they were temporary arrangements, following the funding cycle of the project and dictated more by the universities' time sensitivities in this respect. These projects were often recalled in detail and appeared to have a lasting impression on many staff nevertheless. Louise, at Ashbury School, felt that the dispassionate eye of a researcher would raise the level of their school enquiries to 'research'. Furthermore, she felt that effective research methods may help to establish the best way to intervene to help students who were anxious about mathematics. Tanya felt that the next step at Barnfield would be to employ a resident researcher, either for the school or across the alliance, specifically for such purposes.

There were also examples of teachers engaging in research and this having very little impact on wider practice. For instance, at Carlton, Jane's project on students' transition to the neighbouring sixth form college, attracted little more than a passing interest by senior leaders. Here, the opportunities for collective action seemed to be curtailed by what appeared to be a more hierarchical management structure in which research activity was dictated somewhat by senior leaders. This can be seen as an example of a secondary contradiction between the subject (teachers/teaching) and leadership priorities and division of labour.

Developing a researching culture and having a PLC appeared as two sides of the same coin. Camilla, the research coordinator at Trinity Green, had a clear idea of how the school was a professional learning community. For her, research was seen as central to learning, it was about taking active responsibility for making sense of knowledge, rather than accepting policies thoughtlessly.

> *"I think we see ourselves as a learning community and everyone is still learning. And the way that you learn is through research."*

Responses about the culture of learning through research were consistent across the surveyed staff and interviewees at Trinity Green. The shift towards

collaborative practice and learning through enquiry when the two failing schools combined, created an openness to the use of research instruments and practices too. Even the division of labour aspect was considered, with staff having researching remits across the leadership team and R&D sessions were a regular timetabled occurrence. Importantly, researching was seen as an integral purpose and object of the teaching staff which led to a connection with their own students in an inclusive learning community (The Thinking School). This appears to be the final piece of the jigsaw that other schools struggled with, i.e. they had an integrated idea for how research among staff may ultimately connect to the endeavour of educating pupils. This occurred in multiple ways:

- Students' views were taken into account through interviews and surveys led by a trusted list of external research consultants.

- Pedagogical approaches mirrored the way teachers learned, such as using enquiry-based learning; such a mirroring is resonant with the findings of the Cambridge 'learning to learn' project (Swaffield and MacBeath, 2006) .

- Students were encouraged to be independent thinkers, especially inspired by a 'philosophy for children' approach.

- Teachers shared responsibility for student learning in shared R&D and other collaborative projects and in other ways, such as through lesson study, where practice was 'de-privatised' (Kruse, Louis and Bryk, 1994) and the focus was on pupil learning.

- Social pedagogical approaches were being developed to help students develop literacy (Bryderup *et al.*, 2011). This meant that students were meant to collaborate and build knowledge as a form of social learning, in the same way that teachers were encouraged to construct their own knowledge of practice.

Among the other schools, the notion of what learning entailed was still not coherently or consistently articulated. Rather, teaching pupils to be effective learners or to pass exams in order to meet external regulatory demands or the demands of the curriculum, appeared to dominate. Trinity Green's website gives a flavour of this connection between staff learning, a research perspective and the inclusion of pupils in the learning community, boasting 'systematic procedures for consulting pupils' about the curriculum and inviting pupils to speak to the governing body about their experiences at school, for example.

There were examples of how research was seen as a way of constructing knowledge and this in turn help set the school's own direction. Thus, research can be said to have a 'cultural' use. This very much reflects the tradition of Lawrence Stenhouse and the later CARN movement, in that idea of research was imbued strongly with the notion of agency.

Research and enquiry projects and activities also led to increased collaboration with staff outside the school, particularly neighbouring or partner schools. However, within-organisational differences in the culture of learning sometimes led to resistance, for instance at Carlton High, Kathy described significant difficulties in setting up shared CPD twilight sessions with their partner school.

A key element of Trinity Green's learning community came down to relationships and trust. This seems to run throughout its history since merger between the two schools ten years earlier. Daniel describes how it was normal to share ideas with staff, including senior members of staff and Sasha describes the openness of senior staff to feedback and help on projects she might be struggling with.

We know from examples of research engagement in professional development schools in the USA (Darling-Hammond, 1994) that the way that teachers used their time was very different from that of researchers. Lack of time is also commonly cited as a barrier to research engagement in the literature (e.g. Everton, Galton and Pell, 2000; NTRP, 2011). However, there were examples of how teachers were afforded time to engage *in* and *with* research. For instance, Neal at Ashbury School was on a contract which enabled him to collaborate with other schools and also to visit the IOE library, to gain access to research articles and books. The other element of being Teaching Schools was the increased access by some members of staff, especially senior ones, to other schools in the alliance. This way, collaborative research was becoming more possible.

Tanya at Barnfield, and Camilla at Trinity Green, had the clearest roles in terms of coordinating research. Both used their time to filter research articles, pass them on to appropriate staff and to stimulate research activity. These elements were 'built in' to their job roles, although the impression was that at Barnfield, Tanya's role was driven particularly by her own enthusiasm and interests whereas at Trinity Green, this was also strongly supported by several members of the senior leadership, including the Headteacher. Lisa, at Ashbury, revealed at interview her

interest in developing a research coordination role and felt this was strongly needed as a way of underpinning their work as a new Teaching School. However, she saw this as likely to be added on to an already very full work load, in particular the teacher training aspects of the school.

Ofsted as a dominant or subordinate influence on the central activity system

In all the schools surveyed and among the majority of the interviewees, the importance of the Ofsted inspectorate system was clear, even when un-prompted. From someone familiar with the English education system, this was perhaps nothing new but as the interviews progressed, I became surprised by the extent to which the perspective of an external body had infiltrated notions of professionalism. This meant that standards of 'quality' , 'success', 'effectiveness', etc., were often ones that came from Ofsted inspection criteria (or at least how teachers correctly, or incorrectly perceived them to operate). This activity system (external accountability) manifested itself in a number of ways; as an impending threat or danger, or as a challenge to the school staff's self-perception of their own standards or as a validation of the work the school was already doing. Ofsted terminology was also evident in the nature and type of professional learning activities that staff took part in, even among teachers new to the profession. As someone who had resigned from a teaching and leadership role in a college to take up academic study, it was easier for me, I feel, to get a sense of the peculiarities of a school system where the external regulator had such a pervasive influence.

The extent to which my data analysis focused on discursive manifestations of contradictions in the activity system revealed Ofsted-based examples as a particularly dominant form of conflicts and critical conflicts, dilemmas and double-binds.

At Barnfield School, there were conflicts between new Ofsted measures and the school's own practices. Having consciously widened their curriculum to suit the needs of their students, Ofsted's new measures that relied on a narrow range of traditional academic subjects were threatening to undermine this approach.

Barnfield's current Ofsted 'drive', that used trained inspectors to conduct peer review observations of lessons, was deeply demoralising to some staff. The school had been previously regarded as 'outstanding' by Ofsted itself and many

of its experienced teachers were highly respected. However, some of these same teachers were now being observed and their lessons graded as 'good' or 'satisfactory'. This appeared to create a sense of unease, a corrosion of confidence about the nature of excellence and the quality of their colleagues. While Ofsted was setting standards, and teachers were struggling to internalise them, they gave themselves limited permission to include their own standards of excellence as professionals.

The extent to which the school was able to maintain a safe, respectful environment in which students with multiple disadvantages were nurtured also seemed to be under threat at Barnfield. The new way that Ofsted viewed progress, in particular the removal of a contextual value-added measure, meant that teachers were imagining having to be stricter with students, and were concerned that this would discourage them from even attending lessons. This sudden shifting of the rules appeared to be more than the teaching staff were ready or able to accept. While there was an acceptance that there was 'complacency' at the school, equally it was not clear what new system should replace their existing one. For many, this led to a tortuous set of dilemmas and double-binds. The key issue seemed to be the extent to which the context of deprivation should be either taken into account by the school, or ignored, in the way that Ofsted seemed to want to encourage in a new 'no excuses for failing students' culture. Thus, teachers either questioned the school's approach or were resigned to the fact that Ofsted would not be able to recognise the contextual challenges of the school. However for Jade, the lack of clarity by Ofsted leads to her rejecting their standards and suggesting a need for greater 'internal accountability' (Rallis and MacMullen, 2000). To the extent that teachers needed to use forms of pedagogy that Ofsted required was then often seen as a game that the school would need to learn to play. Thus, the new 'object' of their activity was a dual focus between teaching in a way that their students needed and teaching in a way that Ofsted appeared to require of them. Ofsted approaches were seen as unrealistic ways of working on a daily basis but teachers felt they needed to be known in order to switch to them for a short-notice inspection.

Organisational learning at Barnfield was thus subject to the push and pull of Ofsted versus the school's own decisions, many of which were informed by enquiring into practices through collaborative research. Tanya's concern, given

the high turnover at the school and the range of inexperienced teachers also meant that giving free rein to staff over what they researched may be a luxury the school could ill afford. This was particularly acute, given the threat of removal of the school's Teaching School status. It was unclear how further research engagement in this environment was going to be incorporated into a new form of expansive learning because the tertiary and quaternary contradictions introduced by Ofsted rules of practice and instruments (e.g. ways of observing lessons and defining quality) were unreconciled. The school's current status as 'good' means that it will likely be free of a new inspection for several years, may once again free it up to pursue new and expanded forms of research engagement. However, two significant threats remain; first the absence of their research champion and secondly, the potential for senior leaders to perceive the freedoms afforded by their PLC approach to be part of the problem.

At Croxham, the external inspection system created a series of 'double-binds' in teachers and school leader's activity systems that represented a key contradiction, i.e. on the one hand they led to a feeling that 'something had to be done'. On the other hand, the open professional dialogue (one of the targets) was seen to be inhibited by the performance management culture that was tied to meeting Ofsted targets. The imminent threat of what a re-visit might do to the school, especially if it was downgraded or failed to show sufficient improvement from its 'requires improvement' status underlined this point. Croxham's research projects were clearly dictated by improvement aims that came out of the previous Ofsted inspection. However, one of the outcomes was a change in the way middle leaders were trained at the school and the research bursaries enabled them to act as catalysts for change. The combination of this new leadership remit, coupled with validation from Ofsted and the school leadership, meant that these research leaders were able to exercise considerable autonomy and authority to make changes. At the same time, there was a feeling that, for the moment, in any case, the kind of open professional dialogue that would be needed to take the school further forward, would have to wait (until after the inspection). The fact that the school subsequently came through its last inspection with an improved 'good' grade, potentially frees it up to innovate and change more. Sandra's desire to focus on more pedagogically-focused research projects may come to fruition. As a member of a TSA they also have the potential to increase their collaborative

research efforts with the schools around them and this could act as an antidote to the competition that works unfavourably against them given the selective nature of many of the local schools. However, this currently depends on the culture of research engagement developing further to include a great number of members of the school community, in particular the majority of its teaching staff.

At Carlton, there was a sense that Ofsted played a pervasive role in the professional learning culture that senior leaders wished to consistently reinforce. Even research by senior leaders seemed to be motivated, at least in part, by the desire to anticipate Ofsted's needs. However, teachers felt internally conflicted about wider, social aspects of school life being underplayed in the school's 'Ofsted culture'. Furthermore, the double-bind was that being 'outstanding' was itself seen as somewhat illusory, unobtainable and rarely seen in practice. Even the school's professional learning and enquiry 'tools' of practice were sometimes mock Ofsted-style activity, such as 'learning walks' that were judgemental rather than about gathering data about learning and pedagogy. In this impoverished professional dialogue, there was an acceptance that Ofsted measures were not a sufficient view of the educational process, but respondents such as Maria were unclear about what this should entail. Thus, the school's Ofsted-based culture was the central activity system, while more transformative research activity seemed less evident. However, this is an area that Kathy may have been suggesting when she said that the school's next step was to produce its own research knowledge. The strong network links showed promise but Kathy suggested that trust would take some time to build up given some of the differences in practice and to an extent envy of Carlton's position in the alliance.

At Ashbury and Trinity Green, Ofsted considerations appeared to be less part of the immediate context and thus reserved as peripheral aspects of the school's activity systems. In the former case, research engagement appeared to offer promise to an enriched dialogue about pedagogical practice that could be opened up within and beyond the school, with its alliance members. The creation of the new research coordinator roles showed commitment by the senior leadership to connecting up research activity in a more systematic fashion. It was however, unclear, the extent to which research activity would become integrated into the activities of the Teaching School (see below).

At Trinity Green, the organisational learning culture was more explicitly driven by a shared culture of enquiry and challenge that was independent of accountability-driven criteria. For instance, lesson observations were mentioned as opportunities to try out new ideas, take risks and to gain feedback from a colleague. Senior leaders and staff were committed to the idea of a Thinking School, and concerns about needing to be 'outstanding' where not at the forefront of interviewees' thinking. Rather, research was about making sense of school life in ways that were framed by internally gathered evidence, external sources of research and professional dialogue. If new top-down guidance came to the school, from the Government, Ofsted or elsewhere, there was a sense that, more than the other four schools, staff had the self-confidence to make sense of it for themselves, or indeed to reject it.

How (and to what extent) do practitioners in the case study schools influence policies and practices when they engage in and with research?

Expansion of the rules of practice: Teachers as researchers

Interviewees showed a number of nuanced patterns of engagement *in* and *with* research. This was seen through personal reflections on the role of research in teaching and also through descriptions of participation in research or enquiry activities. Responses among participants about whether they were doing 'proper' research were at times ambivalent. Sometimes there was an acceptance that practical necessities (especially time constraints) made 'real' research impossible, while at other times, the processes that combined professional dialogue and external evidence, were highly-valued. For some, the role of research in teaching was a relatively nebulous concept:

> *"I think there's a professional responsibility to know where your subject and your profession is heading. How you obtain that knowledge is not necessarily through – like I would obtain it probably more through newspapers and through other people kind of almost doing the academic reading of the research and then giving me the headlines than actually doing it myself. Because where do you fit it in? But I am not sure if I think it's a responsibility or it's like a necessary part. I don't know."* (Sandra, Croxham).

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Sandra suggests a rather informal process of combining knowledge from a variety of sources. Some, like Neal at Ashbury were motivated to read external research as an antidote to simplistic, prescribed ways of understanding pedagogy. He made numerous esoteric references to writers and thinkers and explained how this influenced the way he thought about his own teaching. He bemoaned the idea of the so-called 'three part lesson' that was recommended for teachers at Ashbury and was keen to develop a better theoretical understanding for the teaching and learning process. For Faith, at Barnfield, published research was a starting point from which remained the challenge of *"refining that and knowing what will work and what wouldn't."* Combining knowledge from research and in dialogue with a colleague was a feature of many teachers and at Barnfield, this was a particular feature of how the CPD sessions were organised.

Given the chance at interview, some teachers expressed their frustration with the limited role that research played in the teaching profession.

> *"But perhaps in teaching in general – and this comes from my discussions with my tutor, when I was doing my GTP – teaching is the only professional – what's the word, like teachers, lawyers, doctors? … it's the only professional job where you don't need up-to-date knowledge of your field in order to operate as a professional. And it's also the only profession where people grumble … about having to pay their £30 a year to belong to their professional teaching body."* (Rhys, Ashbury)

Jade, from Barnfield School, was concerned about the under-theoretical nature of the training through GTP that the majority of teachers at her school were coming through. The school was keen to create a particular brand of teacher through a 'grow your own' policy but Jade thought that more was needed to bringing theory from academia together with practice:

> *"I think there's a lot of theory out there, there's a lot of practice out there, but there's very little of the two meeting and feeding from each other, learning from each other, and I've always liked the thought of being able to be at that point in the middle."*

Structures at Trinity Green and Barnfield reflected the way that R&D overlapped to the extent that they were generally indistinguishable. Often, the most important consideration was to engage in dialogue and collaboration in ways that led to improved practice. The research groups at these two schools in particular showed elements of Nonaka and Takeuchi's (1995) knowledge combination, where the challenge was to go from tacit knowledge to explicitly modelling the situation, and

then relating the explicit knowledge to the contextual features in which teachers were operating. For Carl, the R&D process produced useful context-based solutions, developed around a problem of practice. The outputs of R&D sessions were also less formally prescribed and thus can be seen as an example of Mode 2 knowledge (Gibbons, Limoges and Nowotny, 1997). The importance of R&D was that it led to changes in practice rather than fulfilling particular criteria of quality. Nevertheless, the dialogue that these sessions generated clearly opened up findings to scrutiny in the way that Anderson and Herr have described as democratic validity (Anderson and Herr, 1999).

While acknowledging the often-informal processes of school-based research, many teachers also accepted and acknowledged the usefulness of rigorous standards of academic research. For Ted, at Barnfield, the informality of ALSs meant that they should not be counted as 'research'. Mike at Carlton, was keen to stress that teaching methods should be properly trialled for their effectiveness, and saw this as 'scientific'. Marta, at Trinity Green, valued her formally produced and structured piece of research for the TLA in that it allowed her to view a familiar situation more impartially and also to broaden the scope of her thinking.

For many, it was clear that a theoretical framework for learning had helped develop a more sophisticated analysis of teaching approaches and this went beyond evidence of effectiveness, but rather helped to understand their own pedagogy. Trinity Green in particular showed evidence of a shared use of language around teaching and learning that the research activities had generated. While this may be an example of the kind of common language that David Hargreaves suggested was an indicator of a professionalised teacher (Hargreaves, 1996b), it may also reflect a rather esoteric use of sources of knowledge with varying degrees of rigour behind them. The extent to which these approaches derived from these sources were properly evaluated and tested was unclear however. For instance, Madelyn commented on the use of VAK approaches to teaching, which have been largely discredited by the academic community (Geake, 2008). Such examples may point to the limitations of a school-based approach that has too inclusive an idea of research without adequate critical engagement with the knowledge base from which it has come.

Alternatively, the problem may also lie with the nature of teaching as an occupation that has insufficient engagement *in* and *with* academically published

research of the kind that is seen in Finnish teachers, for instance (Burn and Mutton, 2015; Sahlberg, 2011). Thus, while schools such as Barnfield and Trinity Green may have set up relatively well-developed systems of research engagement, teachers without the right academic research grounding may struggle to take advantage of them. Judy, at Croxham, also suggested a conflict in the way that leadership teams may view what is 'research' and what teachers may be doing. As such, some existing activity may be under-utilised or ignored. This raises the question to what extent a teacher should be exercising professional autonomy and leadership in spite of the encouragement (or lack of it) from their school leaders.

Enriching the dialogue about the nature of learning and pedagogy: (A search for a new object of teaching)

Responses to the question at interview about the school's shared ethos of teaching and learning uncovered a primary tension at the heart of the work of teachers in their school community. In Activity Theory terms, this discourse is a search for the 'object' of their activity, in particular a potentially new relationship between school staff (especially teachers) and their principal 'clients', the students.

Among those interviewed at Ashbury were some teachers who clearly enjoyed rich professional discussions about the nature of their practice, and in some departments they reported engaging in published research and using this to challenge each other's practice. However, even here Rhys suggested that senior leaders "*worshipped the god of Ofsted".* The main element of this from the perspective of teachers was an oppressive feeling that they needed to 'push' students to make fast progress and that this needed to be in a particularly narrow range of favoured subjects. Rhys seemed to be exhibiting frustration with the external framework that is dictating a dominant view of education, schooling and learning and a disempowerment of professional autonomy.

In fact, one of the clearest examples of a collective search for a new 'object' of activity came not from a teacher but from Louise, the Head of Social Inclusion at

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Ashbury School. She was able to articulate an approach to work across schools in the area that enabled the department to be redesigned around the needs of students in the school and the local area experiencing mental health problems. Having this wider remit included crossing boundaries of different professionals, psychologists, teachers and parents. This necessitated a look at the views and insights from a variety of people and this made a researching approach particularly useful. The shift was towards a new way of working with students with a range of needs, including the use of learning mentors to give intensive six-week support in nurture groups. Louise exercised a degree of professional autonomy in this department that other teachers or departmental heads would probably find very difficult to emulate due to historical ways that secondary school teachers are timetabled and grouped into discipline-based departments.

Many teacher interviewees struggled to articulate such a coherent idea of the teaching and learning process at the school. Trinity Green interviewees were most able to show how their research activities were geared up towards a new approach to pedagogy. The enquiry focus, the continual reflection and challenge of practices mirrored what teachers were hoping their students would achieve as learners. The whole-school commitment to research engagement and the idea of the Thinking School were thus complementary.

Top down pressures of accountability and performance-management practices conflicted with wider views that teachers often privately held about how to educate their students. In this primary contradiction, schools can be viewed as commodities, where school choice is given primacy in a neoliberal market. In this market, Ofsted is seen as the objective arbiter of quality. Equally, teachers are 'vehicles' for implementing what is needed (delivering high results) and pupils are also commodified, so that their 'progress' is deemed to be the most important. This did not stop teachers and school leaders expressing ethical dimensions to their role; however, it was clear in many cases, that such a moral stance was not the 'bottom line'. Likewise, innovation and the 'hidden curriculum' were of peripheral importance in as much that they may or may not have direct relevance to the object of achieving fast progress for students.

Engagement *in* and *with* research had the potential to enrich the minds of those who participated. Leat *et al* (2015), referring to Hermans (2001), explain thus:

"If teachers are plugged into a research support infrastructure they are also likely to hear university researchers talk, and read books and journal articles which provide them with another view and voice, which may help them develop a more dialogic and nuanced view of their school and classrooms." (Leat, Reid and Lofthouse, 2015, p. 282)

As Leat *et al* (2015) point out, Herman's theory of the dialogic self is useful to apply here, in that it distinguishes between teachers' internal voices and the external positions they adopt. If teachers are seen to have many different internal voices then the voice that is 'brought out' can be seen to be contingent on the external context in which they are actors (ibid, p. 281). This is another aspect to the way that the tensions and contradictions inherent in the activity system can be said to reside within teachers' own minds and can explain how one organisation may lead to the same person acting and 'thinking' in a different way entirely.

The way wider aspects of the culture affect what teachers can do in their research

One area over which teachers had little autonomy was decisions about the curriculum. At Ashbury, Justine mentioned how approaches changed abruptly in response to the curriculum changes in year 11:

"[But] 7 through to 10 it's the learning, it's making sure you're a rounded individual and you take part and you're part of a community and you're part of all the other things that go on within the school. Then year 11 it's like, 'Right forget all that, let's get down to it for these four months let's do exams. And then this will get you to the next stage.' You know, they've become much more well-rounded students.

These were reflections of systemic features to do with the school's compliance with the national curriculum and high-stakes GCSE examinations. At Barnfield, Faye described how the need for the school to get students through examinations or curriculum milestones, meant that their ability to give the space for students to make their own mistakes was removed. Nick, also at Ashbury, expressed the contradiction between the ideal of 'continual change' and the keeping of a 'traditional' curriculum or approach. This was reinforced by the Headteacher and expected by parents, and the most important criterion was to achieve high GCSE pass rates for students:

"'We want children to be independent.' Not if it means you're A*-C drops below 85%." (Nick, Ashbury).

Centrally-imposed curriculum requirements, such as PLTS were thus enacted in a way that might satisfy an outside assessment but these were not embedded into pedagogy in any real sense.

These aspects are important because such prescriptive requirements to the way students are taught means that latitude for change at the school or teacher level, is limited. Thus, teacher innovations are likely to be limited and potential areas of learning and development will be ignored in favour of 'traditional' approaches, due to the way the school is judged by the outside world.

What was the origin and purpose of research engagement at the case schools?

Chapters 6a-6e dealt with this question in detail, however, it is worth a brief re-cap of these before addressing the issue of their potential for growth. At Croxham School, the Headteacher wanted to address immediate priorities for improvement and to change the culture of professional learning at the school. Research bursaries marked an emergent stage of development of a researching culture. Ashbury School had many of the elements of a Teaching School before the formal designation, i.e. an excellent reputation for teaching and learning, collaboration with other schools and strong leadership. However, while there was evidence of research and an enquiry approach to some professional development and leadership, they had yet to formally coordinate research engagement. Therefore, they needed to develop structures to enable more concerted efforts at research engagement. Carlton High School had a similar amount of research activity and in many respects very strong systems for collaborative professional development. However, they also lacked some of the shared structures and distributed leadership that might be expected from a research-engaged school. The next stage appeared to be to spread awareness of this beyond senior leadership and to use research to create knowledge and underpin collaboration with partners. However, the extent to which learning was able to go beyond narrow parameters was unclear due to their focus on standards from external accountability and this permeated the culture still. Barnfield Community Schools was at a more advanced stage than most of the schools in the sample in terms of research engagement. The origin of this was one senior member of the leadership team, who created structures that allowed for professional learning and decision making to occur in collaborative action

learning cycles. The idea was to create collaborative professional learning and to utilise knowledge from within, in order to address priorities identified by staff and co-create solutions to them. New staff would understand this from the beginning as their NQT year would involve such involvement. Finally, at Trinity Green School, research engagement began when two schools failed and in order to join around common values, collaborative enquiry became the cohesive principle that guided school development over a decade or more. All the senior leadership had become used to this and a change of headteacher did not lead to a faltering of this principle. Such origins and purposes are relevant when discussing the next, potential stages, below.

What is the potential for the growth of the schools' cultures of research-engagement (and what might this next stage look like)?

Each of the five case schools in chapters 6a-6e ended with activity theory triangles that represented the extant system and the potential for expansion to greater research engagement. The potential trajectory of growth for each school can only be a matter of speculation and supposition. This is based on ignorance of future developments in the macro and exo-system that may affect the school's ability to engage in research as a research-informed learning organisation. Nevertheless, the features that may affect such development become clearer when the elements from the above synthesis are summarised. First the relative PLC and RES characteristics can need to be taken into account. These shaped the direction, purpose and scope of the research engagement in the school to a large degree. Secondly, the external accountability orientation has emerged as a particularly strong element in the suppression or expression of the school's own educational direction. These factors then combine to provide the school's potential trajectory for research engagement (see Table below).

Table 15 Current potential for growth of research engagement at each case school

	PLC	RES	Cultural uses of research	External Accountability orientation	Potential for growth of research engagement
Croxham	Low	Low	Improvement aims limited and linked to SEF. Parallel aim to increase collaboration, trust and challenge	Threat from re-inspection. Priority to engage with Ofsted criteria	Strong immediate growth but limited in scope. Long term unclear
Ashbury	High	Low	Enhancing professionalism and greater systemic connectivity through research engagement	Low threat but Ofsted still 'bottom line'	Structures to promote research learning.
Carlton	Medium	Medium/High	To find the most effective ways of working (according to Ofsted?)	External accountability criteria strongly internalized	Potential to generate own criteria/questions
Barnfield	High	High	To underscore knowledge when training new teachers. Collaborative professional development through enquiry	High threat from Ofsted– need to show how school is satisfying new inspection criteria	Post inspection greater potential? Or potential for innovative research to be taken over by returning to reinforcing basic teaching skills
Trinity Green	High	High	Knowledge creation. Linked to the aims of the Thinking School. School staff and pupils in learning community.	No immediate need to prove anything to inspectorate. High internal accountability	Stagnation? Need for greater rigor and new direction?

In a sense, the last column approximates to the schools' Zone of Proximal Development. A strong feature was whether the external accountability framework had become a dominant or subordinate driver for development. Schools with more potential for growth in research engagement such as Ashbury had been sheltered by years of being judged outstanding in inspection reports

and secure in the reputation for excellence. The new Ofsted framework would thus protect them from the threat of further inspection in the near future. This left them open to move towards the position of Trinity Green school where practitioners had become used to setting their own criteria for success and more 'internally accountable'. However, certain aspects of the school culture also pointed to the possibility of areas of practice that would not be considered suitable to change. This was especially with regard to practices that were considered part of the tradition of the school or those that ensured that students made excellent progress in their attainment towards standardised examinations. Schools such as Carlton High had become used to internalising the external accountability framework. Therefore, while the next step might be for the school to set its own direction through research engagement, equally, research might be used to support such an agenda in the future and remain restricted in scope. At Croxham, research engagement was thus far limited to a few but had an important role to improve the school quickly while changing what was seen as an unwelcome culture. The future direction for expansion of research engagement is not clear however, especially given the school's capacity to do so. Lastly, Barnfield may be a case in point where research engagement begins to break up rather than expand. The person who appeared to drive research engagement left and Ofsted subsequently downgraded the school, threatening the research funds it would receive as a Teaching School that might help it continue with research. Barnfield may decide that as new staff come to the school, there was a greater need to train teachers to 'do the basics'. The type of research engagement that was open ended and linked to changes in practice through teacher leadership, may be deemed unsuitable.

Chapter 8 Discussion, conclusions and recommendations

This chapter addressed the three broad research questions in the introduction:

1)   What are the features of a research-engaged school?
2)   How can research–engaged schools develop educational practice?
3)   How can school researching cultures develop over time?

What are the features of a research-engaged school?

At the most research-engaged schools the great majority of practitioners agreed that their school used research findings to inform many aspects of its work or that it carried out its own research to inform many aspects of its work. This exceeded what would be expected when compared to comparable surveys. Previous research suggested research-engaged involved:

- A research rich pedagogy
- A research orientation
- The promotion of research communities
- Putting research at the heart of school policy and practice

(Handscomb and MacBeath, 2003b, p. 3).

This thesis provides an *extended* definition to include that such schools create a culture in which research provides a richer professional discourse. Leadership of change occurs through research and collaborative enquiry and research provides tools that can make this particularly effective. Research also allows for inter-professional work centred on a redefined and expanded purpose. Research-engaged schools also employ structures and roles to create cultural changes that subsequently lead to changes to the school's professional learning community. As the latter changes, this also provides ever more opportunities for deeper engagement with innovative research. A key role for school senior leaders is in the creation of the conditions that allow for time and space for professional learning through research, to contest current practices and to provide (or use external advice) to use research tools to lead to change. Overall, research activity in these schools builds stronger internal accountability and a richer appreciation and ownership of the school's own educational aims.

This enables it to go beyond questions of educational quality proposed to it by external accountability mechanisms.

Analysis of practitioners' accounts of research engagement also provided four key areas of learning that can be more widely generalised. First, there was not a clear distinction between research and other types of activities, such as professional development. This confirmed the research of others, when such work was often seen to lead to the development of Mode 2 knowledge (e.g. Furlong and Salisbury, 2005). There remains the challenge of being clear about the validity and quality aspects of such activities that cannot match the standards used in academic research. For instance, the publication of research findings, although not unknown in the case schools, would not match the standards and rigor of academic peer review.

Secondly, engaging in and with research were not separate but combined useful elements of the practitioner research culture at the case schools. As mentioned in Chapter 4, Leat, Reid and Lofthouse (2015) suggested a domain of knowing that would equate to engaging *with* research and be concerned with the acquisition of key knowledge in relation to an issue. The domain of acting would equate to engaging *in* research, and would involve using research skills, managing and acting on data, conducting surveys and so on. There would also be an additional level to engaging *in* research, which would be to do with personal growth and identity as a teacher. These ideas of a community of practice in which teachers develop critical research literacy and adopt an enquiry approach to professional learning are in line with the BERA-RSA inquiry's recommendations for the teaching profession (Furlong, 2014).

The third finding from practitioners at the case study schools was that subject disciplinary background influenced the way they viewed research. This suggests that the purpose of research would need to be clearly articulated in school-based projects, so that such expectations were matched to the efforts of those collaborating to change an aspect of practice. If not, those from a natural science background might bemoan the lack of control groups and mathematicians the lack of a large sample size, and so on. The work of those who were leading and mentoring teacher trainees emphasised the need to keep

abreast of new developments in pedagogy and subject-related matters and in understanding meta-cognition. These were needed because mentors needed to make explicit their own tacit knowledge in order to teach their mentees. Research engagement was less about using research-based approaches to teacher training than the latter driving the need to engage with the research evidence. This suggests the need for an evidence-informed approach to teacher development that aligns subject-based knowledge with educational research knowledge (e.g. Burn and Mutton, 2015).

The final finding from staff in the case studies was that while much research was clearly linked to either school improvement or personal development it rarely had a more general, or political purpose. Whether this is a good or a bad thing, is a moot point perhaps. The fact that teachers appear to very willingly engaged in school improvement activity linked to the school's (and mostly government) priorities might appear to be a very good finding. On the other hand, at a time when the policy environment has led to such sweeping changes, the lack of a strong research-informed voice from the profession may be damaging.

The issue of 'time' remains the principal barrier to research engagement by school practitioners (e.g. Everton, Galton and Pell, 2000; 2002; NTRP, 2011). The case study schools here revealed a number of interesting approaches to creating more time, in particular around the reorganisation of roles, CPD time and processes that highlighted the need to engage in published knowledge as part of the enquiry process. What is less clear, was the quality and depth of this engagement. While this point was beyond the remit of this thesis, clearly the quality of practitioner research, research and development and other enquiry approaches are an important dimension. Some of the activities described by practitioners in the case study schools might be considered 'borderline' in terms of whether they counted as research, for instance the use of action learning sets or lesson study. Therefore this research suggests the need for clear standards and processes of agreed quality in these cases. The survey responses by practitioners at the eight secondary schools also suggested that what counted as research varied from one school to another. Partly this reflected a sensitivity to particular approaches and this may have overstated any substantive differences

in research activity. Practitioners themselves had widely varying views and understandings of the meanings of research that partly reflected their own backgrounds but also may reflect similar debates in academia. At some schools, the discourse of research was more common, and this provided a language of professionalism that potentially enriched school development and the wider understanding of education. This point is explored further in the section below.

The categories in the survey, which were derived from previous research (see appendix 4), provided useful points of comparison. These dimensions, i.e. values, leadership and culture, support systems, research activity, impact and sustainability, enabled greater calibration and differentiation between schools than previous research that has looked at school researching culture (e.g. Ebbutt, 2002). However, the survey only provided the broad-brush strokes. The more detailed analysis of each case school provided by a mixed methods research design, revealed aspects of research engagement that were highly nuanced. There appears to be no particular blueprint for a researching school. Rather there was evidence of careful adoption and long term incremental development in the context of the school's leadership, professional learning environment and external context. Previous research from the school improvement field suggested that the 'growth state' of the school would be an important factor for determining the most appropriate strategy (Hopkins et al, 1997). This finding was confirmed here; the vision, purpose and scope of each school's researching culture was strongly influenced by the school's stability and stage of growth. In particular, this was determined by the Ofsted grade of the school and its position in the cycle of inspection.

The *impact* category of the survey also requires further development, as previously (e.g. Sharp *et al.*, 2006c; Wilkins, 2011b), this was seen as being essentially about sharing and disseminating the results of research, both within and beyond the school. Taking a theoretical approach to the school as a learning organisation then, it is clear that 'impact' needs to be unpacked in a variety of different ways and that 'sharing' and 'dissemination' are insufficient. For instance, at Carlton High, ostensibly there were mechanisms for sharing research and professional learning. However it was much less clear that decisions were made on the basis of research activity, particularly by more

junior level staff. A revised survey would need to address the mechanisms that allow staff to convert research into changes to practice as well as the professional learning culture present in the school. Research also had a role in changing the culture of the school; enquiry approaches could be used to provide a mechanism for greater challenge and professional learning.

How can research–engaged schools develop educational practice?

At the most research-engaged schools it was evident that research tools, practices and ways of collaborating were being added to the schools' activity systems. These helped open up possibilities for dialogue, reflection and for leadership to leverage school improvement as long as staff felt able to contest the formal leadership hierarchy. The idea that the practices of academic research and school practice had to cross a cultural divide (e.g. Darling-Hammond, 1994) was supported from work in PD schools in the US and confirmed here in these case studies. This was because the more open aims of research sometimes contradicted or conflicted with other school leadership direction or priorities. However, schools such as Trinity Green showed this was possible, for instance by employing regular academic consultants to add to the community of researchers and for R&D sessions to occur weekly.

One of the ways that the culture of schools that were highly research engaged was different was in the adoption of a discourse of research. At Trinity Green, there was a sense that much of their school development and professional learning activities were defined as 'research' where, in other schools, the same activities may not be. In Activity Theory terms this is important, as language can be seen as a moderator of action and learning. Framing activities as research appeared to create different responses and open up certain affordances, particularly in terms of leadership behaviour. Research thus had a cultural use. For instance, where actions were defined as research, there was a perceived implication that such work should be shared with other staff at the school, or with a wider audience. This resonates with Lawrence Stenhouse's definition of 'systematic enquiry made public'. Marta at Trinity Green, also explains the role of a research '*frame*' to help '*make the familiar strange*'. This language was able

to open up interesting questions that were able to lead to learning and improvement. This narrative ran counter to the culture of performativity that posed narrower targets, such as how certain pupils could make faster progress. However, in some schools, notably Carlton High, it appeared that the 'research narrative' was framed within a more dominant performativity culture, thus taming it somewhat.

For many participants in research and enquiry activities in their schools, research was inextricably linked with the exercise of leadership. This was often made easier where senior leaders were also involved, or if the research was a collaborative activity. The researching structures were part of the type of flat hierarchy that David Hargreaves suggests is necessary for a knowledge-creating school (Hargreaves, 1999a). This was exemplified at Barnfield, where junior members of staff presented findings from their research to governors and the whole of the SLT at the school.

The use of a researching discourse, added the sense of self-efficacy that was needed to make decisions by relatively junior or middle leader staff. Where this occurred successfully, it seemed to have the requirements of:

- Senior leadership backing for the project (e.g. Croxham's research bursaries)
- Collaborative involvement with a range of staff from the school
- The generation of an external evidence base on which to base initial thinking
- Testing and trialling ideas
- The personal commitment of the project leader

This type of non-positional authority is the kind that Frost has referred to as Teacher leadership (Frost, 2000; 2007a; 2007b; Frost and Durrant, 2003a; 2003b; Frost and Harris, 2003; Frost and Roberts, 2004; 2006). Seeing the discourse of research as an enabling one explains, in Activity Theory terms, how teacher leadership can work. However, the type of opportunities for collective leadership do not negate the usefulness or necessity of having senior leadership backing. Neither were decisions driven by a kind of collective group effort without significant personal investment by one leader of the process. There was also often a recognition by the project leader that this was a leadership opportunity that would be good for their career development.

The use of an activity theory perspective of expansive learning throws into sharp light the need for a conception of agency. This is because, the inherent contradictions within an extant activity system in theory motivated the search for a new object. However, while there were opportunities for change, these were not always realised. This tended to depend on cultural and structural conditions within the school. A useful explanation for this comes with the notion of 'ecological agency'; i.e. the idea that agency is achieved by an individual through 'contexts-for-action' (Biesta and Tedder, 2006). Thus, agency does not reside within an individual but in a transaction between the person and their environment. This means the ecological conditions that favour research engagement can be examined (Leat, Reid and Lofthouse, 2015). Such conditions may include the support of leaders, colleagues and external agencies (such as researchers or consultants) and access to resources and support (McLaughlin and Black-Hawkins, 2004). Thus, agency involves:

> *"…teachers' personal capacity to act in relation to the contingencies of their environments. As a result, they may exercise more or less agency at various times and in different settings because neither their personal experiences nor their individual contexts remain fixed."* (Leat, Reid and Lofthouse, 2015, p. 277)

Boreham and Morgan's 'pedagogy' of organisational learning (2004), was also confirmed in this study. They suggested OL was facilitated by:

1. opening spaces for the creation of shared meaning;
2. reconstituting power relations; and
3. providing cultural tools to mediate learning.

Each of these features were present in the case study schools, where research engagement led to: 1) the creation of R&D sessions, ALSs, TLA meetings or cross-school collaborative ventures. In terms of 2), many junior members of staff were able to take on significant whole-school roles that were defined as action research or R&D projects. However, these were not without challenges. Where middle leaders were taking on whole school roles, they sometimes encountered resistance from those with formally designated senior roles. Where junior staff were involved in changes, these were helped by the involvement of a wider group of staff in decision-making and consultation. It was hard to also escape the fact that the social and professional capital of the person involved in the leadership

role, was part of the success of this teacher-leadership through research and this confirms work by other authors in the area of school development (e.g. Hargreaves, D., 2012). In terms of 3) the researching tools used in staff enquiries (such as interviewing or conducting surveys or holding research meetings) provided an opportunity for discussion, without judgement being made of individual teachers' performance on areas of practice.

Where 'ecological' conditions for agency were apparently strong, the notion of development and growth through stages of embedding a research culture cannot be inevitably projected into the future. This is because changes in leadership or a lack of trust when ideas are scaled up beyond the school level to partnership working, can become erosive (Leat, Reid and Lofthouse, 2015, p. 279). The risks for these were shown in changes of research leadership in Barnfield and also in the alliance work such as that by school leaders at Carlton.

The concept of relational agency can also show how researching schools were able to offer opportunities for joint action. This type of agency has been defined as the,

> *"…capacity to align one's thoughts and actions with those of others to interpret aspects of ones' work and to act on and respond to those interpretations. In CHAT terms it is a capacity to work with others to expand the object that one is working on by bringing to bear the sense-making of others and to draw on the resources they offer when responding to that sense-making."* (Edwards, 2007, p. 4)

Here, Edwards (ibid) has reconciled the Vygotskian emphasis of mediation with the object-driven approach to expansive learning that Engeström focuses on. Thus, in line with ideas about distributed intelligence, Edwards makes the point that the resources available in the environment (such as concepts or tools from research) "*are loaded with intelligence which enhances our action*" (Edwards, 2007, p. 4). Rather like ecological agency, Edwards also emphasises that such agency occurs when the context allows for it, and this can occur in both formal and informal settings. Edwards' ideas about agency fit well with notions of teacher professionalism situated in organisational change efforts and driven by leadership. At Trinity School, there were the clearest examples of where collaborative research work centred on school values that were to an extent in

line with an aim to become a thinking school. Research activities were about bringing together understandings of this concept and enhance collective agency.

Below, the conditions that led to greater ecological agency and those that worked against it are summarised. These were also related to the third research question which concerns the potential for growth of the schools as research engaged organisations.

- Punitive external accountability
- Performance management
- The culture of 'pushing' students

- Strong internal accountability
- Staff with high social/professional capital
- Formal leaders create structures for collaborative research to lead to changes in practice

Depressed opportunities for joint action   Greater opportunities for joint action
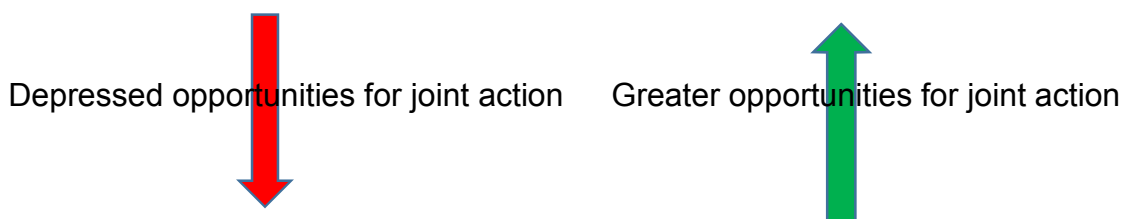
Figure 34 Ecological agentic conditions for school research engagement

In order to bring together the tools of research and practice in ways that enhance education the ecological conditions of institutions that encourage such practices need to be nurtured. These conditions are also subject to influences beyond the four walls of school buildings, including the wider macro-politics of education. The value system has a pervasive effect, through policy and expectations about practice, often creating a performativity culture that affected teachers and the type of educational experiences they created for their students. This culture was powerfully reinforced by the accountability system that at times was viewed as a dominant force, at others as a subordinate one. The agency afforded to those conducting and using research in their practices is attenuated by the extent of this accountability force, as it is perceived by school leaders and practitioners. Research can be introduced into the culture of schools as a counter-balance to the accountability force, creating greater 'internal accountability' (Rallis and MacMullen, 2000). This enabled some of the school leaders and practitioners to explore standards and values that were derived from their own enquiries rather than the Ofsted inspection standards.

However, the development of these cultures required stewardship of the ecological conditions for it to thrive. At Trinity Green, the whole senior leadership would consistently reinforce the collaborative researching approaches. This was done not only as 'lead learner' as mentioned below, but also by supporting the structures and division of labour that allowed for research to flourish among many staff.

The conceptualisation of a research-engaged school contained here is one that is about enriching and informing professional judgement. There was little evidence, at least in the most developed schools, of an attempt to reduce teaching to the kind of technical-rationale mode of professionalism decried by writers such as Schön (1983). Thus leadership of the most developed schools was concerned with ways to protect the intellectual freedoms of teachers and other school staff, in the way that Dewey proposed in his construction of the laboratory school (see appendix 20). The tensions between this aim and the pull of the school to take care of the basic competencies of teachers provides echoes of the laboratory school experience (Camp Mayhew and Camp Edwards, 1936). Thus, while schools such as Barnfield were hoping to protect school development through collaborative action research, the need for research to be more cleary linked with high quality subject pedagogy may point to the need for a more tightly focused agenda in some cases.

How can school researching cultures develop over time?

The ecological conditions needed to develop strong research engagement needed to take into account the school's context and evolve through a negotiation of the object of work. This involved a number of iterations over several years. The overall vision of the school was enriched by research and the evolution and culture of the school shaped the course of the research that took place. Ebbutt's (2002) experience working in researching partnerships with schools for many years showed that developing rich cultures takes time and that each school tended to incorporate and enact such cultures in a variety of different configurations. What these case study schools suggest is more about the shape and nature of these iterations of changes and development. Such knowledge is likely to help shorten the length of each stage of maturity, if school leaders think strategically about how research informed practices can be introduced and phased in over time.

School leaders played an essential part in setting-up and endorsing the spaces for learning and encouraging a dialogue about practice, informed by research. The kind of guidance given by NCSL to promote a research-based learning community and how to embody the idea of the 'lead learner' was strongly seen in the case studies of the more developed research engaged schools, i.e.:

- *When someone makes an assertion, ask them why they think so – what evidence do they have to support their thinking?*
- *Make space for professional dialogue, for example in staff meetings.*
- *Encourage staff to share and reflect on their practice, for example through observation and mentoring.*
- *Demonstrate that you value research yourself: refer to research findings and show that you are using evidence in your own decision-making.*
- *Make a commitment to listen to and act on the results of research, even if they challenge existing views and practices.*
 (Sharp *et al.*, 2006b, p.9)

Such a lead learner stance was most obviously seen in the case of Trinity Green School, where the Head teacher led a SLT who were all committed to this stance.

The notion of development of research engagement in this thesis, used a theoretical proposition, gained from uniting an activity theory perspective of organisational learning with the idea of the school as a professional learning community. The case studies confirmed the iterative and mutually constitutive nature of such a relationship. Figure 35, below shows how such a developmental process might occur. This is based on using the case study schools from different developmental stages and showing how increasing spirals and iterations of growth may occur over time. This builds on the quadrant analysis of the schools in Chapter 7 and adds the notions of ecological agency from the section above. Thus, the figure below shows a *potential* spiral of growth. In practice, the case studies have shown that the mechanisms for organisational growth are subject to numerous conflicts and contradictions in the system. These can lead to a variety of ways of defining the new *object* of the researching school.

Professional Learning community

School learning community includes pupils. Research not just used instrumentally; criteria evolving through research

School that begins to work across subject disciplines, connecting research learning to decision making

Professional learning culture more influenced by research language/academic discussion

Professional learning culture changed by collaborative nature of research and flat leadership structure

Research engagement characteristics

Multiple structures and spaces for learning. Research engagement embedded across senior leadership. Access to academic research expertise. Density of internal researching capacity

Increase in structures and spaces for learning through research/enquiry

Research activity increases- greater freedom

expansive learning cycles

Research with clear improvement aims/tightly directed by senior leadership

Figure 35   Potential developmental trajectory of a research engaged school

The case study schools have shown that within-organisational factors can facilitate research engagement by helping to create more time, spaces for learning and the re-orientation of structures, including making leadership more distributed and collective. This expansive cycle of organisational learning occurs through the connection of multiple activity systems, defined through culturally and historically separate practices. Research, teacher training, leadership development and the school improvement systems are all added to 'knotworking' (Fenwick, 2007) that occurs when boundaries are crossed (Tuomi-Grohn and Engeström, 2003). The opportunities for collective agency are thus potentially greater as new, expanded activity systems are temporally and spatially created in search of new objects of activity (and practice).

Taking cultural-historical contradictions as a driver of expansive development, we can see how these manifested themselves in terms of expressions of conflict, dilemmas, double-binds and incongruence. The primary contradictions were those that defined teaching through accountability and performance management requirements, versus the broader desires of teachers to educate their students as independent learners, and with broad social and work skills. The negotiation of these tensions, provided insights into the extent to which shifts occurred in elements of the activity system. In all of the schools, interviews with staff identified 'need states', in which the primary object of schooling was contested. The extent to which these contradictions were subordinate or dominant, shared or disputed, determined the nature and type of reconfiguration of the activity system towards a new object.

As the context shifted for each school, the search for a new object of schooling has shifted to include further elements. However, the extent to which the external accountability shadow cast itself over the business of teachers, school leaders and other practitioners, tended to determine the scope and reach of teacher's professional learning. Learning and developing through research was thus sometimes seen as a desire, handicapped by school practices, community rules and restrictions to the way teachers operated in the schools. Even when time to practice research was given, it was sometimes evident that the outcomes of this activity would not easily lead to changes in policy or practice. The practice of 'research' in the schools sometimes embodied these conflicting aims, setting

performance standards and targets that emphasised students' progress and attainment above other priorities.

Limitations of an Activity Theory approach to understanding organisational learning and development through research engagement

The complexity and ambiguity of Engeström's expansive learning cycle (1987) made it difficult to attribute interviewees' conflicted reports as definitive examples of a primary or secondary, tertiary or quaternary contradiction. That is to say, it was difficult to know whether references to Ofsted criteria were an internal 'struggle', representing a primary contradiction in the object of teaching or whether this was at the level of coming to terms with the introduction of a new activity system (e.g. a new Ofsted framework) that had to be incorporated into ways of acting and working (a tertiary contradiction). In terms of Engeström's proposed cycle of transformation, the secondary level also seemed to occur less frequently, i.e. contradictions between the elements of an activity system. Rather, the object or subject had to be redefined with the introduction of an external activity system or changes to the school context, e.g. research or Ofsted procedures. In other words, it was more apparent that interviewees were discussing the contradictions between their ways of working and externally-introduced ones than it was to say how their own community was in contradiction with the object or the division of labour. This partly depended on the interpretation of leadership as a separate activity system or part of the same activity system (within schooling). At times it made sense for school leaders, who often taught, to be seen within the same activity system as teachers, and at times to see leadership as operating within different rules, with different objects, and separate outcomes.

Part of the problem of charting shifts in an expansive cycle was that my interviews only captured a snapshot in time and, while many interviewees were able to recount the school's developments retrospectively, Activity Theory analyses may be better suited to longitudinal developments and consistent analysis of observations of dialogue in meetings and direct observations of practice. Indeed, this research was unable to confirm the connection between those ideas perceived by school leaders, teachers and other staff, and the ultimate micro-level experiences of pupils.

A further aspect refers to the implication of much Activity Theory analysis that the researcher intervenes in the system as a consultant, to help participants see the opportunities for collaborative change. My attempt to initiate this process on a return visit to Ashbury School failed. The new research coordinator, Neal, told me that he felt that he needed to make a mark in this role and that a collaborative group of the nature I was describing might make it seem that he was relying on external help or that he needed a group of senior staff to help do what was his job. It may be that Engeström's Change Laboratory methods would have more success in collectivist cultures where such collaboration is more highly valued. Other writers have recognised the complexity of organisational change methods derived from Activity Theory, in which social scientists need to engage at a deep, academic and 'immersed' level and helping to structure the involvement of practitioners (Blackler, 2009). Nevertheless, more recently, work has been trialled to form a series of stages for a research-to-practice 'intervention' that might appeal to school leaders, based on Engeström and Sannino's (2010) epistemic actions (Sheard and Sharples, 2015). Such approaches may be needed to make more explicit to practitioners the processes and purposes of organisational change methods based on the notion of expansive learning.

However, in the way that Activity Theory has been used to compare organisational cultures, there is also a danger that individuals and their histories and backgrounds have been underplayed too. This downplaying of the individual in socio-cultural theories from the Russian, object-oriented approach, as opposed to the USA and Western European social-psychological orientation, has been identified by others (Edwards, 2007). The issue is partly one of an emphasis on either *internalisation*, i.e. the incorporation of the surrounding culture into individuals' minds, or *externalisation*, i.e. the way that individuals then act on and shape their environment. The former approach need not deny the role of individuals; however, in an organisational analysis, this may tend to be described in ways that reveal an agreed, 'collective' view of the culture.

However, there is a further problem if it is assumed that the lives of individuals are bound up too closely in their contexts – in this case the school system they work in – and that all of their learning is explained in this environment. This is because the life-histories of individuals will also have a major impact on the way

they act and are able to shape the world around them; this will include issues of gender, class, sexuality and other issues of power. For this, the work of Bourdieu (cited in Brown, 2013) has been identified as important when assessing the extent to which change through research is achieved. Thus, when actors enter a 'field' they bring their own 'feel for the game' and set of dispositions (habitus) which are, "*the result of a long process of inculcation, beginning in childhood, which becomes a 'second sense' or a second nature*" (Bourdieu and Johnson, 1993, p. 5, in Brown, 2013, p. 5). The accounts of individuals in these case study schools show how the motivations of some were stronger towards influencing their environments. Their potential to have impact on their school practices through research is likely to have been as much a function of social capital as it was to do with affordances in their working culture. The extent to which individuals had the confidence to traverse the fields of academia and school practices will also have been influenced by their own past experiences of education and its emancipatory effect on them.

A related issue emerges when using Activity Theory as the theoretical lens for the scaling of the meso-level of an ecosystem view of school researching practices. This issue has been critically examined in terms of the analogy of different scales of maps:

> "*Imagine a map to show the position of a classroom. A large-scale map might show the layout of the school and the position of this room within it. A smaller scale might show the position of the school in the town. A smaller scale again might show the position of the town in the region or even, if the scale was small enough, in the nation. Each time the subject is the same, but what we can see on the map is different. If we envisage differentially scaled maps of learning, the same should be true. The largest scale might focus on the learning of one individual. The next scale down might focus on the site where the person learns – which might be a community of practice in Wenger's (1998) sense, but might not be. Decrease the scale again, and perhaps the whole organisation or activity system is the focus. Decrease it further, and we can look at learning in relation to wider social or economic structures and power-relations, including globalisation.*" (Hodkinson, Biesta and James, 2008, pp. 32-33).

The issue of using Activity Theory in this way then, is that by focusing at the meso-level, the individual's habitus and agency can easily be overlooked or excluded from an overall 'theory of learning'. Where Activity Theory is nevertheless useful is in its shared recognition with Bourdieu's stance that the

macro-elements of power interpenetrate the social world. Just as actors operate within overlapping 'fields', they can be seen to operate within overlapping activity systems. Equally, as Bourdieu talks of the 'rules of a game', Activity Theory shows how actions operate through informal or formally accepted (and negotiated) rules, albeit with the latter focusing more on those bound-up in institutional and historical 'practices'.

To some extent, the adoption of any theoretical stance will tend to filter out certain viewpoints and emphasise others. Nevertheless, some concrete implications have emerged as a result of this socio-cultural analysis of organisational learning through research engagement. A powerful one is to see how the elements of an activity system can expand and change and coalesce around the idea of a new shared object. The need to reach some consensus on the new object may determine the extent to which the system reaches this 'bifurcation point', and to an expanded system.

Chapter 9 Conclusions, implications and recommendations

The case study schools had researching cultures that were at four stages of development. Detailed analysis also showed patterns of engaging in and with research that were unique to the context and growth state of each school. Teachers in the case schools had highly nuanced views about what counted as research and what high quality research would consist of. The majority of staff involved in research wanted to promote changes to their own pedagogy and to support school improvement. The introduction of a researching culture led to expansive learning, with changes in the community, rules of practice and division of labour. Practitioners in these schools also became accustomed to a discourse of research. This, in particular, opened up new possibilities for transforming practice. The new context led to a search for a redefined object of the activity of practitioners in the schools. Contradictions within activity systems were revealed through conflicts and dilemmas that had to be negotiated. Where the ecological conditions were in place through the right structures, spaces and cultures to contest and challenge power relations, research activity was able to lead to changes to practice, particularly through teacher leadership. Development through spirals of change is proposed as a model for school change through research engagement. Iterations of changes to the research engagement characteristics combine with changes to the professional learning culture in a dialectic relationship of growth. The accountability dimension was a particularly strong influence; the extent to which expansive organisational growth occurred depended on the extent to which the external accountability dominated or was subordinate to internal accountability.

The findings of this research have implications for school leaders and teachers, academy chains and teaching schools as well as policy makers, academics and inspectors. Potential future directions for research are also discussed.

Implications for school leaders

Senior leaders have a key role in setting the conditions that allow for collaborative research to be possible. The most research-engaged schools also had stability of leadership vision and a high density of research leadership, at senior, middle

and teacher (and (other) support staff) level. This allowed for years of development of a culture that all staff understood. In such schools, the departure of a Headteacher need not threaten this culture, as was the case at Trinity Green School. Leadership of change through research at the most developed schools, happened at many levels. What this research shows is that it is worth analysing the conditions that are needed to be in place in research-engaged schools for leadership of change through research to flourish. As such, leadership can be viewed as an emergent property of systems (Wielkiewicz and Stelzner, 2005) rather than merely the actions of particular individuals or formal positions.

The important role of research coordinators/champions was also shown in these case studies as has been shown in the experience of Networked Learning Communities in England (Katz and Earl, 2010). The case study schools benefitted from appointing a formal research coordinator in a number of ways: this person acted as a catalyst for school research activity, they provided on-going focus and support to practitioners and helped to act as mobilisers of research knowledge among school staff. The seniority of this person also affected the extent to which they were able to influence structures and cultures, particularly with respect to CPD and also the extent to which cross-departmental groups were able to lead change. There is still immense potential to look further at the role of such research champions and the links between formal and informal ways of influencing school researching cultures[20].

The present Conservative Government is clearly committed to Academisation and wants schools to join Academy Trusts (DfE, 2016). Some of these Multi-Academy Trusts have network-wide coordinators of research, although in some cases, very conservative (small c) ideas about education and potentially prescriptions for 'effective practice' are being promoted (see Christodoulou, 2014). Such ideas, if they gain prominence in the professional outlook across the academy trust schools, are likely to depress innovation in the curriculum and support a narrow understanding of education or the role that research has in enriching teachers' own judgements.

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[20] See: https://educationendowmentfoundation.org.uk/evaluation/projects/research-learning-communities

Implications for networks of schools

Leadership of research-informed practices also needs to be applied to the ecological scalings: whole system, network level, school level and across-levels. As schools in England increasingly work in networks such as TSAs and Federations or Multi-Academy Trusts, it will be necessary to have network-wide coordinator positions. While these have existed on time-limited projects in England before, such as the NLC programme (Worrall and Noden, 2006), it has been less common to see permanent roles. These may have the potential to coordinate the growth of researching cultures and also may provide a link with HEIs that can help support this process. There is also a need to look how research engagement relates to system leadership, for instance through the role of consultants (Close, 2016). The role of researchers and consultants is particularly interesting in that they are among the rare actors in the system that traverse – horizontally and vertically – the levels of the ecosystem.

In the case of the Teaching Schools, an Activity Theory perspective helped to develop an understanding of how the 'Big Six' priorities could be viewed as separate activity systems. These were subordinate to the central activity system of teaching students. This study confirms the notion of research as underpinning the other five priorities (rather than being one itself) and also begins to explain in what way it underpins them. For instance, research was partly inspired by teacher training relationships, and as a way of engaging in cross-school professional collaborations. However, cross-alliance work between teachers did not always penetrate the cultures of individual schools in the way intended. Therefore, the cycle of expansive learning appeared to be still at an early stage, where the Teaching School was generally seen as a parallel construct of the school's (main) business. Given the punitive accountability system – such as was seen with Barnfield Community School's experience of removal of outstanding status – schools may choose to continue to compartmentalise in this way. For Teaching Schools to become hubs of truly research-informed practice, they will need to develop a much clearer vision for how research is meant to improve practice. In

other words, they will need to articulate the processes, mechanisms, structures and proposed cultures of research that they wish to promote.

Learning in networks of schools can be seen as an essential part of the definition of PLCs and research-engaged schools. There were examples in the case study schools of how a research focus can usefully serve as the mode and medium of collaboration where trust is (and needs to be) built up, around an agreed enquiry focus. However; while membership of networks is important for iterative learning about practice in collaboration with other professionals, others have noted that the real locus of learning and change to practice is *within the school itself (Katz and Earl, 2010).* This represents one of many tensions in an ecosystem; the need to focus on the local and the need to be connected to the wider system. The strength of the activity system framework was that it allowed such an analysis. The notion of 'joint work' to improve practice also comes from activity theory (e.g. Katz and Earl, 2010; Little, 1990) and is a promising mode for researching collaborative work in future research. Collaborations as examples of joint work can take into account various degrees of loose or tight alliances that can cope with the temporal and spatial dislocations of collaborative enquiry.

The issue of collaboration for one's own school improvement becomes less of a defining requirement (of a Teaching School) if the improvement occurs at least somewhere 'systemically'. In terms of an ecosystem, this might include teacher-to-teacher transfer of knowledge within a wider network, such as the TSA. This also suggest the need for a shift in the understanding of the 'unit' of learning as less within the four walls of the school as an organisation; rather, the (Teaching) school as an institutional concept (Glatter, 2015). This is complementary to the notion of a research-engaged school that is embedded within a wider ecosystem of self-improving schools with multiple vertical and horizontal levels of connection (Godfrey, 2014). The aim for research-engaged schools would thus be to facilitate alignment in a nested system that allows for research-informed improvements to practice to be generated in collaborative PLCs within and beyond the organisation (Dimmock, 2014).

An institutional framework can also have some advantages in terms of promoting a wider role for schools in society, including in terms of maintaining and promoting civic values and in resisting structural changes that may be counter-productive or wasteful of resources. There may also exist a tension in that organisational frameworks, when relating to 'organisms' and ecosystems may present a more dynamic picture of change and adaptation. Successful organisms within ecosystems can be judged in terms of their ability to adapt to the environment, and for this they need to be inter-connected in order to learn and grow. In Activity Theory terms, these connections provide the potential for expansive learning through the combinations of activity systems in the search for a shared object. The question remains about what new 'objects' are emerging in a self-improving system and the extent to which these are imposed by an ideology of the free market, stripping back the role of the state, school autonomy, choice and accountability.

Implications for the teaching profession

Focusing on research-engaged schools from an institutional perspective implies a need to understand that teachers – the most important aspect of children's educational experience – form an essential part of such an institution's sense of purpose and continuity. It is therefore important to recognise, as the case study schools affirm, that staff mobility and turnover is an important factor. If we focus on the school as an individual organisational unit, this will be under-emphasised. School leaders can only do so much to influence school institutions across a country and teachers will pick up on different organisational cultures as they move from place to place.

Therefore, the concept of a research-engaged school also needs to have a strong occupational dimension (Dimmock, 2014). This would be greatly enhanced by having core teaching standards that make the place of research explicit. The BERA-RSA enquiry has formulated just such an idea that would help create such a consistent understanding. This has concluded that teacher professionalism can be seen to derive from: i) subject and pedagogical knowledge, ii) practical experience, and iii) research literacy – the last of these involving both: research-based knowledge, theory and scholarship; and research related skills and enquiry

(Furlong, 2014, p. 10). At present, the lack of a strong, independent, professional body to set standards for teaching also weakens the current sense of wider educational and community responsibility for teachers. These aspects have been neglected and are only now being refocused on in a context of massive changes to a school-led system, which includes expansion of school-based ITT. With the plethora of routes into teaching, the challenge now would appear to be in promoting the growth of the College of Teaching[21], in order to provide a constant and independent voice to the profession. The extent to which these different routes into teaching afford effective research-informed practices and the need for longitudinal research that links these routes to pupil outcomes is also an area of neglect in the research (Burn and Mutton, 2015).

A detailed examination of the Government's White Paper, '*Educational Evidence Everywhere' (DfE, 2016*) gives some clues as to the direction for at least the next few years for schools and research-informed practice. For instance, regarding the underpinning of CPD with research the Government has committed to:

> *"examine the feasibility of incentivising teaching schools to publish their research and CPD materials on an 'open-source' basis"* (DfE, 2016, p. 13)

The white paper also commits to supporting the new College of Teaching in the publication of an education journal for England, designed to emulate the British Medical Journal in medicine and to help teachers implement effective practices through the publication of international research in accessible formats. The report further commits to the set-up of a portal for teachers to access education journals (ibid, p.39).

There is also a less threatening position towards a teacher education process enriched by the role of universities, vis-à-vis the role of universities in the provision of ITT:

> *"We want the best universities to establish 'centres of excellence' in ITT, drawing on their world-leading subject knowledge and research."* (ibid, p. 31)

However, while the same White paper admits that,*"it is not yet as easy as it should be for teachers to find and use evidence to improve their teaching practice"*, and

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[21] http://www.claimyourcollege.org/

that *"too little research is directly driven by the priorities of teachers and schools."* (ibid, p.39), it goes on to state the well-rehearsed reason that:

> *"…the evidence base is patchy, difficult to access or to translate into action"* and *"too little is sufficiently robust in quality."* (ibid, p.39).

Such comments appear not to have advanced the arguments since Hargreaves' comments at the TTA lecture in 1996 and fail to address how the Government will support educational practitioners to engage *in* and *with* research in ways that would inform their own (freely chosen) judgements about 'effective' pedagogy. Indeed, the Government admonishes educators in the white paper for failing to teach 'correctly':

> *"Despite decades of research showing its positive effects, systematic synthetic phonics had been disregarded by many schools, local authorities, and university education faculties."* (ibid, p 38)

Rather than promoting professional autonomy, the Government boasts that it has (imposed) a phonic reading check (p.38). Such remarks make it clear that educators are not to be trusted to implement the solutions that the evidence base apparently demands they should. Other references to research suggest a continued reliance on seeing educational interventions as treatments through RCTs; for instance that schools should regularly evaluate their spending of pupil premium money in light of the EEF's (RCT model) research findings (DfE, 2016). The medically inspired evidence-based practitioner role for teaching is also clear in a reference to Goldacre's assertion about the need to collect,

> *"better evidence about what works best."* (ibid, p.38)

The Government policy document makes selective use of research evidence from cognitive science to dictate their proposed knowledge-base for the core curriculum (ibid, p.89). Their position about the under-emphasis on learning knowledge, erects a straw man argument against 'progressive educators' that has been used elsewhere (Christodoulou, 2014). It also runs counter to the assertions about the need to increase professional autonomy in schools.

If a more empowering version of research-informed practice is to be driven from the profession and within 'research-rich' schools then, at least for the duration of the present incumbents, this will need to occur despite government policy and not

because of it. Although the idea of researching schools may survive in the work of Teaching Schools and their alliances, it will need a stronger independent professional voice to withstand the current policy environment.

For teachers to come into their school organisation with some commonalities and consistent expectations about research-informed practice there are a number of implications that the empirical research here supports. Among these is the need to look at structural aspects of teachers' 'division of labour' (in Activity Theory terms). This means re-evaluating how (at least some) teachers and researchers are paid and incentivised both by the school and by their respective professions. The establishment of a career path for teachers based on research engagement would be an interesting development to explore.

Edwards (2007, p. 14) suggests that a key capacity for teachers to develop to enhance professional agency will be the "*capacity to work with others and to negotiate meanings*", the consequence of which would also "*reduce the current emphasis on learning to comply*". My research suggests that the use of research and enquiry clearly plays an important role in sense-making and collaborating in this process. Research can also provide the tools to help leverage change in ways that may enable professionals to act outside of the 'shelter of their institutions' (Edwards, 2004). Allowing teachers to develop this form of collaborative expertise may be one that ultimately can only benefit both school leaders and the education system as a whole (Hattie, 2015). A focus on *connectivity* in the system may also be more useful than *collaboration*; teachers connect to others via subject meetings or through electronic means, or other ad hoc conferences and meetings (such as Teach Meets[22] or ResearchEd[23]). Connectivity with other professionals, such as educational psychologists can also be fruitful ways to engage in research, particularly when such professionals operate against a particular disciplinary research base. The skills of teachers in incorporating such evidence into practice is an area of interest in the literature that also looks a promising avenue for further work (Burn and Mutton, 2015).

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[22] http://teachmeet.pbworks.com/w/page/19975349/FrontPage

[23] http://www.workingoutwhatworks.com/

Implications for academics working with schools

For researchers, greater weight will need to be afforded to collaborative work with schools to narrow the cultural and structural divides. Examples of the latter in England include the use of embedded doctoral researchers in schools in roles partly funded by The University of Manchester (McGinity and Gunter, 2012; McGinity and Salokangas, 2012; 2014; Rowley, 2014). Since bringing together distinct activity systems can lead to expansive learning, more roles that combine both practice and research would logically be useful and reflect the experience of some other professions such as medicine, where this type of arrangement is more common. Academics can contribute much to developing the rigour of research evidence that the school is basing its decisions on, both in critical friendship of practitioner research and also in the interpretation, filtering and selecting of high quality external research that the school may wish to refer to.

The case study schools highlight the potential for understanding the role of research 'tools' within school contexts (Cordingley, 2015). The survey used in this study is a good example of such a tool. This has been developed for use in my work at the London Centre for Leadership in Learning at UCL, working with middle and senior leaders in schools. A revised version now acts as an audit of the skills and experience of existing staff, a survey of the perceived culture of professional learning and a checklist of current and ongoing research projects and structures that support research. This research supports a broad and inclusive definition of research, to include examples of what might be considered 'enquiry' or JPD for instance. This is due to the evidence in the case study schools that a shift in culture towards greater focus on the cultural tools of research, including its language, can help change the professional learning culture of the school in ways that can be very helpful. The point about sharing the word 'research' with academia, also helps to break down power barriers between the worlds or research and practice.

One of the propositions of this thesis is that we should base our understanding of schools as researching institutions on a socio-cultural history of such practices. This has brought to light the structural and cultural issues that challenge these developments. I would contend that much can be learned from adopting a

pragmatic position to truth and knowledge, as this provides a practical epistemology that is relevant to the work of school practitioners. In particular, Dewey's context-based, transactional realism opens up possibilities (rather than certainties) and the potential for good, wise action. The temporal nature of Dewey's ontology requires us to re-evaluate ideas derived from academic research and is congruent with Stenhouse's proposition that research provides hypotheses to be tested in action, in the laboratory of the classroom.

Implications for school accountability

In Chapter 8, many accounts from teachers and school leaders revealed the tensions between the goals of a researching agenda and those derived from a view of education that focused on performativity. This need to prove 'effectiveness' was most powerfully driven by demands of the accountability system, embodied by reference to Ofsted. The 'threat' of an inspection was determined to a large degree by the previous grade awarded to the school, the school's own perception of how they would likely be judged by another inspection and the likely proximity of the next inspection. However, it is also important to see how the judgements about what determines good teaching and a good education were internalised by practitioners. It was striking to me, as an outsider, how much of the dialogue was taken up by references to the accountability framework. Within an Activity Theory approach, the accountability system 'competed' for space with the world of teaching practice and that of a researching agenda. In some schools the Ofsted view appeared to dominate in a way suggestive of Perryman's idea of inspection as 'Panoptican', reinforcing notions of performativity in all aspects of school life (Perryman, 2006). This research suggests a need to examine how the accountability system ought to align with the promotion of a research engagement agenda in schools.

To an extent the co-existence of research engagement and an external inspection agenda reflects some of the work around the relationship between school self-evaluation and inspection (Ferguson *et al.*, 2000; Janssens and van Amelsvoort, 2008; Plowright, 2007; Webb, 1998). The debate centres around the extent to which each should be involved in accountability and how to support the process of school improvement by finding the most appropriate balance between the two

(e.g. Nevo and Nevo, 1995). The most powerful indicator from practitioners' accounts in this research was the dominance of the external accountability agenda; thus few teachers interviewed had a strong idea of learning or education beyond Ofsted adjectives or the general aim to have high expectations for students or to get excellent results in examinations. In Biesta's terms, this reflects a dominance of the idea of education for 'qualification', as opposed to subjectification (individual growth) and socialisation (Biesta, 2009).

Research-engaged schools like Trinity Green were more able to develop their own language to describe education. This may be seen as the hallmark of a professionalised teaching workforce (Hargreaves, 1996b). Teachers rarely expressed a theoretical basis for learning or pedagogy and many were institutionalised to think about learning in the way that the performance management agenda demanded it (aimed at teaching to get good results). Curriculum development was largely ignored by the interviewees. While partly discussed at Trinity Green, the differences are stark when compared with the curriculum innovations afforded to laboratory schools and Stenhouse's teachers in England in the 1970s. While schools (especially Academies) technically now have more freedom to innovate in the curriculum these powers have not been taken up in any radical sense (Cirin, 2014). This may be the ongoing suspicion that the accountability system will still judge schools in ways that make innovative changes to the curriculum too risky. The most obvious conclusion from this is that the accountability system, in whatever form it takes, needs to be far less punitive.

For Teaching Schools, an important facet of the English 'self-improving system', the accountability system may also need to look more widely, systemically and intelligently in order for it not to become a strong inhibitory element to more open cultures of professional learning conducive to research engagement. The example of PDSs in the USA, suggests that Teaching Schools will need to lobby for changes to the accountability structure, so that wider, collaborative and devolved responsibilities can be taken into account. While research engagement may provide the underpinning for this broader role to educate teachers, to improve other schools, and to reduce inequalities in pupil experiences, the extent to which it can provide a catalyst for change will still be determined by other factors. An accountability framework that judges schools as individual units is not

fit for purpose in this respect, as it will lead to an inward-looking and protective school culture, averse to cooperation, to proving rather than improving, and to conservatism in the curriculum rather than innovation.

A legitimate question is, if formal top-down accountability is weakened, what takes its place? One is the idea that the profession, and school institutions, need to set more of their own agenda, i.e. internal accountability (Rallis and MacMullen, 2000). This was seen most obviously in the way that Trinity Green School had developed their mission around the idea of a Thinking School. Horizontal accountability, such as through peer review (Munby and Fullan, 2016) could be supported by research tools and overseen by academics working in a JPD model (NCSL, 2012).

A further shift could see school leaders, and to an extent inspectors, holding people accountable for processes instead of outcomes. While such an approach may have certain advantages, such as being less likely to inhibit innovation and lead to greater participation and quality of learning (Wielkiewicz and Stelzner, 2005), it also raises other questions. For instance, if processes for decision-making are to be judged, which are the most appropriate processes and what weight should be given to different people and elements in this process (De Langhe, van Osselaer and Wierenga, 2011)? Researching schools can evaluate such processes; in addition, research can propose 'evidence-informed' approaches to implementation and change management (Hall, 2013). The case study schools show the importance of processes, such as forms of PLCs that appear essential to creating the cultural conditions for research to take place in schools. However, these can easily be implemented in superficial ways and promote only surface collegiality (Hargreaves, 2000). The development of processes that enable research to inform and improve teaching and leadership judgments thus become a line for future empirical testing.

Implications for policy-makers

If the research-engaged school is a meso-system institutional concept that underpins systemic reform and innovation rather than a series of isolated organisations seeking to improve and transform themselves, policy-makers will need to be sensitive to the interconnections of levels of the educational

ecosystem. One attempt at such a model has been proposed on the context of the Singapore education system (see **Figure 36** below).

Systems Thinking
of collectivist belief to create opportunities for successes to cascade to other schools in the wider system

Converge
of vision and goal to achieve self-referentiality and contextualised process trajectories to achieve pedagogical change

Macrosystems
National Policies
Global Trends
Society
Culture
History
Values

Exosystems
Commercial and research partners, Consortium Schools

Mesosystems
Organizational attributes
Institutional culture
Structural affordances

Microsystem
Classroom culture
Group dynamics
Teachers' beliefs/knowledge

Individual
Teacher
Head of Dept
Principal

Emerge
of synergistic interactions amongst actors to produce new capacities to balance centralised prescription and decentralised autonomy as well as competencies to adapt and level up innovations at all levels of subsystems.

Leverage
of haressing social capital and physical resources emanating from any level of the subsystem to diffuse innovations within and across schools.

Align
of mitigating tensions through learning focus, collaborative learning culture, pedagogocial capacity building, technological ubiquity and other enabling conditions across the ecology to powerfully enable change

Chronosystem
Interactions of layers of ecology across a trajectory of time

Figure 36 Diffusion of innovations across an education system (Source: Toh et al., 2014, p.846)

While it is beyond the scope of this thesis to comment on reform of the school system in detail, it is this kind of 'systems thinking' that has been called for by some experts in the field of organisational learning (e.g. Senge, Hamilton and Kania, 2015). Research can clearly play a role at each and any level of scale on this map, including building an understanding of the system as a whole, identifying trends and patterns, evaluating innovations and providing feedback loops. When focusing at the meso-level, Toh and colleagues' (2014) model clearly supports many of the arguments presented here about the importance of

institutional culture and its affordances. Research has also been shown in the school case studies to be a cultural tool that can leverage change.

Another issue brought to light when viewing the meso-system in the overall cycle of change, is the need to respect different rates of development, refinement and growth. Schools with strong researching cultures take years to develop to fruition. This contrasts with the often frantic pace of policy initiatives in England, such as school academisation, Teaching Schools, changes to inspection frameworks, teacher training and so on. If schools are operating in entirely fragmented ways, these changes are likely also to spread unevenly across the system. However, if teachers already come equipped with an established idea of their profession as a research-informed one, then it will be a much easier task to establish institutional practices and a surrounding infrastructure that support this. Therefore, policy should be designed to support and encourage this position and to strengthen the role of the teaching profession.

Future research

Much of the suggestions for further research have already been mentioned above, i.e. further studies that look at:

- The roles of research coordinators and how these work both within schools and across school alliances, particularly within MATs and TSAs.
- The role of research and researchers in system leadership
- The role that research can play in various activities of teacher development and practice, particularly in the context of Teaching Schools
- The development of research-based tools that can be constructed or co-constructed by researchers and practitioners to enrich practice and lead to school improvement
- The joint work conducted by teachers with other professionals, where research collaboration enables practice to be built around the needs of students
- The use of research to promote greater internal and lateral accountability, for instance by introducing a more explicit research base into peer-review practices

- Effective, research-informed processes that lead to school development, particularly ones that encourage and support teacher leadership
- The importance of trust in effective research-engaged schools, building on emerging work (Brown, Daly and Liou, 2016; Leat, Reid and Lofthouse, 2015).

Moreover there is the potential to adopt system theories to understand how schools inter-connect and support a research-enriched eco-system. Previous research has focused on high skills, and high innovation ecosystems (Finegold, 1999; Hall and Lansbury, 2006; Hodgson and Spours, 2015; Mercan and Göktaş, 2011; Spours, 2015). Future research could look at how a high-research school eco-system might look and be achieved. This would address the point about a need for an 'architecture' for research-informed (or evidence-based) teaching practice (e.g. Goldacre, 2013).

References

Addams, J. and Seigfried, C. H. (2002). *Democracy and social ethics*: University of Illinois Press.

Allen, R., Burgess, S. and Mayo, J. (2012). *The teacher labour market, teacher turnover and disadvantaged schools: new evidence for England*: Department of Quantitative Social Science-Institute of Education, University of London.

Anderson, G., Wahlberg, M. and Barton, S. (2003). 'Reflections and experiences of further education research in practice'. *Journal of Vocational Education and Training,* 55 (4)*,* 499-516.

Anderson, G. L. and Herr, K. (1999). 'The New Paradigm Wars: Is There Room for Rigorous Practitioner Knowledge in Schools and Universities?'. *Educational Researcher,* 28 (5)*,* 12-40.

Argyris, C. and Schön, D. A. (1978). *Organizational learning: A theory of action perspective*. (Vol. 173): Addison-Wesley Reading, MA.

Argyris, C. S. and Schön, D. A. (1996). 'Organizational learning II: Theory, method and practice'. *Reading*.

Ashcraft, K. and Mumby, D. K. (2003). *Reworking gender: A feminist communicology of organization*: Sage Publications.

Atkinson, E. (2000). 'In Defence of Ideas, or Why 'What Works' is Not Enough'. *British Journal of Sociology of Education,* 21 (3)*,* 317-330.

Avis, J. (2007). 'Engeström's version of Activity Theory: a conservative praxis?'. *Journal of education and work,* 20 (3)*,* 161-177.

Ball, S. J. (2013). *The education debate*: Policy Press.

Barnett, R. and Coate, K. (2004). *Engaging the curriculum*: McGraw-Hill Education (UK).

Bassett, D., Lyon, G., Tanner, W. and Watkin, B. (2012). Plan A+ Unleashing the potential of academies: The Schools Network/Reform.

Beardsworth, R. and Lee, M. (2004). 'Developing Training Schools: An Evaluation of the Initiative'. *Journal of In-service Education,* 30 (3)*,* 361-370.

Bell, M., Cordingley, P., Isham, C. and Davis, R. (2010). 'Report of professional practitioner use of research review: Practitioner engagement in and/or with research'. [Online]. Available at: http://www.curee-paccts.com/node/2303.

BERA. (2011). Ethical guidelines for educational research: British Educational Research Association.

Biesta, G. J. J. (2004). 'Education, accountability, and the ethical demand: Can the democratic potential of accountability be regained?'. *Educational Theory,* 54 (3)*,* 233-250.

Biesta, G. (2006). *Beyond Learning: Democratic Education for a Human Future*: Paradigm Publishers, PO Box 605, Herndon, VA 20172-0605. Tel: 800-887-1591 (Toll Free); Fax: 703-661-1501.

Biesta, G. (2007). 'Why What Works Won't Work: Evidence-based Practice and the Democratic Deficit in Educational Research'. *Educational Theory,* 57 (1)*,* 1-22.

Biesta, G. (2009). 'Good education in an age of measurement: On the need to reconnect with the question of purpose in education'. *Educational Assessment, Evaluation and Accountability (formerly: Journal of Personnel Evaluation in Education),* 21 (1)*,* 33-46.

Biesta, G. (2010a). 'Pragmatism and the philosophical foundations of mixed methods research'. *Sage handbook of mixed methods in social and behavioral research. Second edition.,* 95-118.

Biesta, G. J. (2010b). 'Why 'what works' still won't work: From evidence-based education to value-based education'. *Studies in Philosophy and Education,* 29 (5)*,* 491-503.

Biesta, G. (2015a). 'How Does a Competent Teacher Become a Good Teacher?'. *Philosophical Perspectives on Teacher Education,* 1-22.

Biesta, G. (2015b). 'Improving education through research? From effectiveness, causality and technology to purpose, complexity and culture'. *Policy Futures in Education,* 1478210315613900.

Biesta, G. (2015c). 'On the two cultures of educational research, and how we might move ahead: Reconsidering the ontology, axiology and praxeology of education'. *European Educational Research Journal,* 14 (1)*,* 11-22.

Biesta, G. and Burbules, N. C. (2003). *Pragmatism and educational research*: Rowman & Littlefield Pub Inc.

Biesta, G. and Tedder, M. (2006). 'How is agency possible? Towards an ecological understanding of agency-as-achievement'. *Learning Lives: Learning, Identity, and Agency in the Life Course*.

Binder, M. (2012). 'Teacher as Researcher: Teaching as Lived Research'. *Childhood Education,* 88 (2)*,* 118-120.

Birenbaum, M., Kimron, H., Shilton, H. and Shahaf-Barzilay, R. (2009). 'Cycles of Inquiry: Formative Assessment in Service of Learning in Classrooms and in School-Based Professional Communities'. *Studies in Educational Evaluation,* 35 (4)*,* 130-149.

Black-Hawkins, K. and McIntyre, D. (2006a). 'Reflections on schools-university research partnerships'. In C. McLaughlin, K. Black-Hawkins, S. Brindley, D. McIntyre and K. S. Taber (Eds), *Researching Schools: Stories from a schools-university partnership for educational research*: Routledge.

Black-Hawkins, K. and McIntyre, D. (2006b). 'The SUPER partnership: A case study'. In C. McLaughlin, K. Black-Hawkins, S. Brindley, D. McIntyre and K. S. Taber (Eds), *Researching Schools: Stories from a schools-university partnership for educational research*: Routledge.

Black-Hawkins, K., Richards, J., Gill, A., Garbett, P. and Clemence, J. (2006). 'Sharnbrook Upper School: Stories of research'. In C. McLaughlin, K. Black-Hawkins, S. Brindley, D. McIntyre and K. S. Taber (Eds), *Researching Schools: Stories from a schools-university partnership for educational research*: Routledge.

Blackler, F. (2009). 'Cultural-Historical Activity Theory and Organisational Studies'. In A. Sannino, H. Daniels and K. D. Gutiérrez (Eds), *Learning and expanding with Activity Theory*. New York: Cambridge University Press.

Bonneau, C. (2013). Contradictions and their concrete manifestations: an activity-theoretical analysis of the intra-organizational co-configuration of open source software: Sub-theme.

Boreham, N. and Morgan, C. (2004). 'A Sociocultural Analysis of Organisational Learning'. *Oxford Review of Education,* 30 (3)*,* 307-325.

Boreham, N. and Reeves, J. (2008). 'Diagnosing and supporting a culture of organizational learning in Scottish schools'. *Zeitschrift für Pädagogik,* 54 (5)*,* 637-649.

Borg, S. (2010). 'Language teacher research engagement'. *Language Teaching,* 43 (04)*,* 391-429.

Bourdieu, P. and Johnson, R. (1993). *The field of cultural production: Essays on art and literature*: Columbia University Press.

Brandt, R. (2003). 'Is This School a Learning Organization? 10 Ways to Tell'. *Journal of Staff Development,* 24 (1)*,* 10-12.

Braun, V. and Clarke, V. (2006). 'Using thematic analysis in psychology'. *Qualitative research in psychology,* 3 (2)*,* 77-101.

Brindley, R., Lessen, E. and Field, B. E. (2008). 'Toward a common understanding: identifying the essentials of a professional development school'. *Childhood Education,* 85 (2)*,* 71-74.

Bronfenbrenner, U. (1976). 'The experimental ecology of education'. *Educational Researcher,* 5-15.

Bronfenbrenner, U. (1979). The ecology of human development: Cambridge, MA: Harvard University Press.

Bronfenbrenner, U. (1992). *Ecological systems theory*. London: Jessica Kingsley Publishers.

Bronfenbrenner, U. (1994). 'Ecological models of human development'. *Readings on the Development of Children,* 2*,* 37-43.

Brookhart, S. M., Moss, C. M. and Long, B. A. (2010). 'Teacher inquiry into formative assessment practices in remedial reading classrooms'. *Assessment in Education,* 17 (1)*,* 41-58.

Brown, C. (2013). 'Making evidence matter: A new perspective for evidence-informed policy making in education'.

Brown, C. (2015). *Leading the use of research and evidence in schools*. London: IOE press.

Brown, C., Daly, A. and Liou, Y.-H. (2016). 'Improving trust, improving schools: findings from a social network analysis of 43 primary schools in England'. *Journal of Professional Capital and Community,* 1 (1)*,* 69-91.

Brown, M. and Macatangay, A. (2002). 'The Impact of Action Research for Professional Development: case studies in two Manchester schools'. *Westminster Studies in Education,* 25 (1)*,* 35-45.

Brown, S. (2005). 'How can research-inform ideas of good practice in teaching? The contributions of some official initiatives in the UK'. *Cambridge Journal of Education,* 35 (3)*,* 383-405.

Bryderup, I., Moss, P., Cameron, C., Kleipoedszus, S., Jensen, J. J., Eichsteller, G., Petrie, P., Boddy, J., Holthoff, S. and Frorup, A. K. (2011). *Social pedagogy and working with children and young people: Where care and education meet*: Jessica Kingsley Publishers.

Brydon-Miller, M. and Maguire, P. (2009). Participatory Action Research: Contributions to the Development of Practitioner Inquiry in Education, *Educational Action Research* (Vol. 17, pp. 79-93): Routledge. , 325 Chestnut Street Suite 800, Philadelphia, PA 19106.

Bryk, A. S. and Gomez, L. (2008). 'Reinventing a research and development capacity'. In F. M. Hess (Ed.), *The future of educational entrepreneurship: Possibilities for school reform* (pp. 181-206). Cambridge MA: Harvard Educational Press.

Bubb, S. (2009). 'Southfields Community College, Becoming a Research-Engaged School'. [Online]. Available at: http://www.connecting-learning.co.uk/leadership-library-learning-case-studies/104-a-research-engaged-school.html. [Last accessed 10th May 2012].

Bubb, S. and Earley, P. (2014). 'Data and inquiry driving school improvement: developments in England'. *Journal of Educational, Cultural and Psychological Studies,* 2014 (9)*,* 163-180.

Bullough, R. V. (1997). *Professional Development Schools: Catalysts for Teacher and School Change.*

Burn, K. and Mutton, T. (2015). 'A review of 'research-informed clinical practice'in Initial Teacher Education'. *Oxford Review of Education,* 41 (2)*,* 217-233.

Cain, T. and Harris, R. (2013). 'Teachers' action research in a culture of performativity'. *Educational Action Research,* 21 (3)*,* 343-358.

Cain, T. (2015). 'Teachers' engagement with research texts: beyond instrumental, conceptual or strategic use'. *Journal of Education for Teaching,* 41 (5)*,* 478-492.

Caldwell, B. J. and Spinks, J. M. (2013a). *Leading the self-transforming school*: Centre for Strategic Education (CSE), East Melbourne Vic.

Caldwell, B. J. and Spinks, J. M. (2013b). *The self-transforming school*: Routledge, Abingdon UK.

Camp Mayhew, K. and Camp Edwards, A. (1936). The Dewey School. The laboratory school of the university of Chicago 1896-1903. New York: D. Appleton-Century Company, Inc.

Campbell, A. (2011). 'Connecting Inquiry and Professional Learning: Creating the Conditions for Authentic, Sustained Learning'. In N. Mockler and J. Sachs (Eds), *Rethinking Educational Practice Through Reflexive Inquiry: Essays in Honour of Susan Groundwater-Smith* (Vol. 7): Springer.

Campbell, A. and Groundwater-Smith, S. (2007). *An Ethical Approach to Practitioner Research*. London: Routledge.

Carr, W. (2006). 'Education without theory'. *British Journal of Educational Studies,* 54 (2)*,* 136-159.

Castells, M. (2011). *The rise of the network society: The information age: Economy, society, and culture.* (Vol. 1): John Wiley & Sons.

Castells, M. and Cardoso, G. (2006). *The network society: From knowledge to policy*: Center for Transatlantic Relations, Paul H. Nitze School of Advanced International Studies, Johns Hopkins University.

Christodoulou, D. (2014). *Seven myths about education*: Routledge.

Cibulka, J. and Nakayama, M. (2000). Practitioners' Guide to Learning Communities. Creation of High-Performance Schools through Organizational and Individual Learning (pp. 33).

Cirin, R. (2014). Do academies make use of their autonomy? In DFE (ed): www.gov.uk.

ClaimyourCollege (2015). *The Profession's new College of Teaching: A proposal for start-up support*.

Clarke, A. and Erickson, G. (2003). Teacher Inquiry: Living the Research in Everyday Practice (pp. 247): RoutledgeFalmer, 29 West 35th Street, New York, NY 10001-2200 ($29.95).

Close, P. (2016). 'System Leader consultancy development in English Schools: a long term agenda for a democratic future'. *School Leadership and Management,* 36 (2).

Cochran-Smith, M. and Lytle, S. (1998). 'Teacher reseach: the question that persists'. *Internal Journal of Leadership in Education,* 1 (1)*,* 19-36.

Cochran-Smith, M. and Lytle, S. L. (2001). 'Beyond certainty: Taking an inquiry stance on practice'. In A. Lieberman and L. Miller (Eds), *Teachers caught in the action: Professional development that matters* (pp. 45-58). New York: Teachers College Press.

Cohen, M. D. and Bacdayan, P. (1994). 'Organizational routines are stored as procedural memory: Evidence from a laboratory study'. *Organization science,* 5 (4)*,* 554-568.

Coleman, A. (2007). 'Leaders as Researchers Supporting Practitioner Enquiry through the NCSL Research Associate Programme'. *Educational Management Administration & Leadership,* 35 (4)*,* 479-497.

Coleman, A. (2012). 'The significance of trust in school-based collaborative leadership'. *International Journal of Leadership in Education,* 15 (1)*,* 79-106.

Collinson, V. and Cook, T. F. (2007). *Organizational learning: Improving learning, teaching, and leading in school systems*. London: Sage Publications, Inc.

Cordingley, P. (2002). 'Lessons from the school-based research consortia'.

Cordingley, P. (2008). 'Research and Evidence-Informed Practice: Focusing on Practice and Practitioners'. *Cambridge Journal of Education,* 38 (1)*,* 16.

Cordingley, P. (2009). *Using research and evidence as a lever for change at classroom level*. Paper presented at the Annual Meeting of the American Educational Research Association, San Diego, CA, April.

Cordingley, P. (2011). 'Extending Connections: Linking Support for teachers engaging in and using research with what is known about teacher learning and development'. In N. Mockler and J. Sachs (Eds), *Rethinking Educational Practice Through Reflexive Inquiry: Essays in Honour of Susan Groundwater-Smith* (Vol. 7). Dordrecht: Springer.

Cordingley, P. (2015). 'The contribution of research to teachers' professional learning and development'. *Oxford Review of Education,* 41 (2)*,* 234-252.

Creswell, J. W. and Clark, V. L. P. (2007). *Designing and conducting mixed methods research*: Sage Publications, Inc.

Daly, A. J. (2010). *Social Network Theory and Educational Change*: ERIC.

Dana, N. F. and Yendol-Hoppey, D. (2014). *The reflective educator's guide to classroom research: Learning to teach and teaching to learn through practitioner inquiry*: Corwin Press.

Darling-Hammond, L. (1994). 'Developing professional development schools: Early lessons, challenge, and promise'. In L. Darling-Hammond (Ed.), *Professional development schools: Schools for developing a profession* (pp. 1-27)

Davis, N. and Morrow, D. (2010). 'Synergy between information and communications technologies and educational action research and collaborative construction of our active identities'. *Educational Action Research,* 18 (1)*,* 89-101.

Dawson, K. (2006). 'Teacher Inquiry: A Vehicle to Merge Prospective Teachers' Experience and Reflection during Curriculum-Based, Technology-Enhanced Field Experiences'. *Journal of Research on Technology in Education,* 38 (3)*,* 265-292.

De Botton, O., Hare, S. and Humphreys, A. (2012). *School2School: how to make Teaching Schools a success*. Reading: CfBT.

De Langhe, B., van Osselaer, S. M. J. and Wierenga, B. (2011). 'The effects of process and outcome accountability on judgment process and performance'. *Organizational Behavior and Human Decision Processes,* 115 (2)*,* 238-252.

Dewey, J. (1997). *How we think*: Courier Corporation.

Dewey, J. (2004). *Democracy and education*: Courier Corporation.

Dewey, J. and Small, A. W. (1897). *My pedagogic creed*: EL Kellogg & co.

DfE. (2010). The Importance of Teaching (Vol. 7980): The Stationery Office.

DfE. (2011a). Available at: http://www.education.gov.uk/schools/teachingandlearning/schoolswhitep

aper/b0068570/the-importance-of-teaching/. [Last accessed 15th November 2011].

DfE. (2011b). School Workforce in England. In S. F. Release (ed). London: Department for Education.

DfE. (2014a). Available at: http://www.education.gov.uk.

DfE. (2014b). Teaching Schools eligibility criteria.

DfE. (2016). Educational excellence everywhere. In D. f. Education (ed). London.

Dimmock, C. (2011). *Leadership in Education: Concepts, Themes and Impact*. Routledge.

Dimmock, C. (2014). 'Conceptualising the research–practice–professional development nexus: mobilising schools as 'research-engaged'PLCs'. *Professional Development in Education,* (ahead-of-print)*,* 1-18.

Dimmock, C. and Walker, A. (2004). 'A new approach to strategic leadership: learning‐centredness, connectivity and cultural context in school design'. *School Leadership & Management,* 24 (1)*,* 39-56.

Dreyfus, S. E. (2004). 'The five-stage model of adult skill acquisition'. *Bulletin of science, technology & society,* 24 (3)*,* 177-181.

Drucker, P. (1998). 'From capitalism to knowledge society'. In D. Neef (Ed.), *The knowledge economy* (pp. 15-34). Boston: Butterworth-Heinemann.

Duffield, J. A. and Townsend, S. S. (1999). 'Developing Teacher Inquiry in Partner Schools through Preservice Teacher Research'. *Action in Teacher Education,* 21 (3)*,* 13-20.

Durst, A. (2005). 'The Union of Intellectual Freedom and Cooperation: Learning From the University of Chicago's Laboratory School Community, 1896-1904'. *Teachers College Record,* 107 (5)*,* 958-984.

Durst, A. (2010a). '"Venturing in Education": Teaching at the University of Chicago's Laboratory School, 1896-1904'. *History of Education,* 39 (1)*,* 55-73.

Durst, A. (2010b). *Women Educators in the Progressive Era: The Women Behind Dewey's Laboratory School*: Palgrave Macmillan.

Earl, L., Katz, S., Elgie, S., Jaafar, S. and Foster, L. (2006). 'How Networked Learning Communities Work: Volume 1–The Report'. *Report prepared for the National College of School Leadership Networked Learning Communities Programme*.

Earl, L. M. and Katz, S. (2006). *Leading schools in a data-rich world: Harnessing data for school improvement*: Corwin Press.

Ebbutt, D. (2002). 'The development of a research culture in secondary schools'. *Educational Action Research,* 10 (1)*,* 123-142.

Ebbutt, D., Robson, R. and Worrall, N. (2000). 'Educational research partnership: differences and tensions at the interface between the professional cultures of practitioners in schools and researchers in higher education'. *Teacher Development,* 4 (3)*,* 319-338.

Edwards, A. (2004). 'The new multi-agency working: collaborating to prevent the social exclusion of children and families'. *Journal of Integrated Care,* 12 (5)*,* 3-9.

Edwards, A. (2007). 'Relational agency in professional practice: A CHAT analysis'.

EGFL. (2011). 'Teaching Schools'. [Online]. Available at: http://www.egfl.org.uk/export/sites/egfl/categories/improvement/docs/lesl ey.html/Teaching_Schools_Information.pdf. [Last accessed 28th May 2012].

Engeström, Y. (1987). 'Learning by expanding. An activity-theoretical approach to developmental research'.

Engeström, Y. (1996). 'Interobjectivity, ideality, and dialectics'. *Mind, Culture, and Activity,* 3 (4)*,* 259-265.

Engeström, Y. (1999). 'Expansive Visibilization of Work: An Activity-Theoretical Perspective'. *Computer Supported Cooperative Work (CSCW),* 8 (1)*,* 63-93.

Engeström, Y. (2001). 'Expansive learning at work: Toward an Activity Theoretical reconceptualization'. *Journal of education and work,* 14 (1)*,* 133-156.

Engeström, Y. (2008). *From teams to knots: Activity-theoretical studies of collaboration and learning at work*: Cambridge Univ Pr.

Engeström, Y. (2009). 'The future of Activity Theory: A Rough Draft'. In A. Sannino, H. Daniels and K. D. Gutiérrez (Eds), *Learning and expanding with Activity Theory*. New York: Cambridge University Press.

Engeström, Y. (2010). 'Activity Theory and Learning at Work'. *The SAGE Handbook of Workplace Learning,* 86.

Engeström, Y., Engeström, R. and Vaaho, T. (1999). 'When the center does not hold: the importance of knotworking'. In S. Chaiklin, M. Hedegaard and U. J. Jensen (Eds), *Activity Theory and social practice*. Aarhus: Aarhus University Press.

Engeström, Y. and Sannino, A. (2010). 'Studies of expansive learning: Foundations, findings and future challenges'. *Educational research review,* 5 (1)*,* 1-24.

Engeström, Y. and Sannino, A. (2011). 'Discursive manifestations of contradictions in organizational change efforts: A methodological framework'. *Journal of Organizational Change Management,* 24 (3)*,* 368-387.

Engeström, Y., Virkkunen, J., Helle, M., Pihlaja, J. and Poikela, R. (1996). 'The change laboratory as a tool for transforming work'. *Lifelong Learning in Europe,* 1 (2)*,* 10-17.

Evers, C. W. and Wu, E. H. (2006). 'On generalising from single case studies: Epistemological reflections'. *Journal of Philosophy of Education,* 40 (4)*,* 511-526.

Everton, T., Galton, M. and Pell, T. (2000). 'Teachers' perspectives on educational research: Knowledge and context'. *Journal of Education for Teaching: International Research and Pedagogy,* 26 (2)*,* 167-182.

Everton, T., Galton, M. and Pell, T. (2002). 'Educational research and the teacher'. *Research Papers in Education,* 17 (4)*,* 373-401.

Ezer, H. (2007). 'Empowering the Teacher-Inquirer: Narrative Inquiry as a Vehicle of Empowerment for Teachers in a Multicultural Society'. *Teacher Education and Practice,* 20 (2)*,* 191-203.

Fauske, J. R. and Raybould, R. (2005). 'Organizational learning theory in schools'. *Journal of Educational Administration,* 43 (1)*,* 22-40.

Fenwick, T. (2007). 'Organisational learning in the 'knots': Discursive capacities emerging in a school-university collaboration'. *Journal of Educational Administration,* 45 (2)*,* 138-153.

Ferguson, N., Earley, P., Fidler, B. and Ouston, J. (2000). *Improving schools and inspection: The self-inspecting school*: Sage.

Fielding, M. (2004). ''New wave'student voice and the renewal of civic society'. *London Review of Education,* 2 (3)*,* 197-217.

Fielding, M. and Britain, G. (2005). *Factors influencing the transfer of good practice*: Department for Education and Skills.

Finegold, D. (1999). 'Creating self-sustaining, high-skill ecosystems'. *Oxford review of economic policy,* 15 (1)*,* 60-81.

Flecknoe, M. and Saeidi, S. (1999). *Teacher as Inquiring Professional: Does This Help the Children To Raise Their Game? A Theoretical and Empirical Study; Preliminary Results*.

Foot, K. and Groleau, C. (2011). 'Contradictions, transitions, and materiality in organizing processes: An Activity Theory perspective'. *First Monday,* 16 (6).

Fosnot, C. T. and Perry, R. S. (2005). 'Constructivism: A psychological theory of learning'. In C. T. Fosnot (Ed.), *Constructivism: Theory, perspectives, and practice* (pp. 8-33). New York: Teachers College Press.

Friedman, V. J., Lipshitz, R. and Popper, M. (2005). 'The mystification of organizational learning'. *Journal of Management Inquiry,* 14 (1)*,* 19-30.

Friedrich, L. and McKinney, M. (2010). 'Teacher Inquiry for Equity: Collaborating to Improve Teaching and Learning'. *Language Arts,* 87 (4)*,* 241-251.

Frost, D. (2000). *Teacher-led school improvement*: Routledge.

Frost, D. (2007a). 'Practitioner research and leadership'. In Ann R. J. Briggs and Marianne Coleman (Ed.), *Research methods in educational leadership* (2 ed.). London: Sage.

Frost, D. (2007b). 'Teacher leadership: articulating and amplifying the teacher voice'. *The Enquirer,* 15.

Frost, D. and Durrant, J. (2003a). *Teacher-led development work: Guidance and support*: David Fulton Publishers.

Frost, D. and Durrant, J. (2003b). 'Teacher leadership: Rationale, strategy and impact'. *School Leadership & Management,* 23 (2)*,* 173-186.

Frost, D. and Harris, A. (2003). 'Teacher Leadership: towards a research agenda'. *Cambridge Journal of Education,* 33 (3)*,* 479-498.

Frost, D. and Roberts, A. (2006). *Teacher leadership and knowledge building: The experience of the HertsCam Network*.

Frost, D. and Roberts, J. (2004). 'From teacher research to teacher leadership: the case of the Hertfordshire Learning Preferences Project'. *Teacher Development, 8,* 2 (3)*,* 181-199.

Frost, R. and Holden, G. (2008). 'Student voice and future schools: building partnerships for student participation'. *Improving Schools,* 11 (1)*,* 83-95.

Fullan, M. (2009). 'Large-scale reform comes of age'. *Journal of Educational Change,* 10 (2)*,* 101-113.

Furlong, J. (2014). *Research and the Teaching Profession: building capacity for a self improving education system*: BERA.

Furlong, J. and Oancea, A. (2006). 'Assessing quality in applied and practice-based educational research: A framework for discussion'. [Online]*,*

Furlong, J. and Oancea, A. (Eds) (2008), *Assessing quality in applied and practice-based research in education: continuing the debate*. Abingdon, Oxon: Routledge.

Furlong, J. and Salisbury, J. (2005). 'Best practice research scholarships: An evaluation'. *Research Papers in Education,* 20 (1)*,* 45-83.

Gage, N. L. (1985). *Hard Gains in the Soft Sciences: The Case of Pedagogy*: ERIC.

Galassi, J. P., White, K. P., Vesilind, E. M. and Bryan, M. E. (2001). 'Perceptions of Research from a Second-Year, Multisite Professional Development Schools Partnership'. *Journal of Educational Research,* 95 (2)*,* 75-83.

Geake, J. (2008). 'Neuromythologies in education'. *Educational Research,* 50 (2)*,* 123-133.

Gibbons, M., Limoges, C., Nowotny, H., Schwartzman, S., Scott, P. and Trow, M. (1994). *The new production of knowledge: The dynamics of science and research in contemporary societies*: Sage.

Glaser, B. G. and Strauss, A. L. (2009). *The discovery of grounded theory: Strategies for qualitative research*: Transaction Publishers.

Glassman, M. (2001). 'Dewey and Vygotsky: Society, experience, and inquiry in educational practice'. *Educational Researcher, 30* (4)*, 3-14.

Glatter, R. (2012). 'Persistent Preoccupations'. *Educational management administration & leadership, 40* (5)*, 559-575.

Glatter, R. (2015). 'Are schools and colleges institutions?'. *Management in Education,* 0892020615584108.

Glover, D. and Coleman, M. (2005). 'School culture, climate and ethos: interchangeable or distinctive concepts?'. *Journal of In-service Education, 31* (2)*, 251.

Glynos, J., Howarth, D., Norval, A. and Speed, E. (2009). 'Discourse Analysis: varieties and methods'.

Godfrey, D. (2009). 'How action research changed our lives'. In A. Lawson (Ed.), *Action Research. Making a difference in education* (Vol. 1, pp. 74-79). Slough: NFER. Available [Online] at: http://www.nfer.ac.uk/nfer/publications/YOY01/YOY01.pdf#p.89.

Godfrey, D. (2014). 'Leadership of schools as research-led organisations in the English educational environment cultivating a research-engaged school culture'. *Educational Management Administration & Leadership,* 1741143213508294.

Goldacre, B. (2013). 'Building evidence into education'. [Online]. Available at: https://www.gov.uk/government/news/building-evidence-into-education.

Gonçalves, A., Sousa, P. and Zacarias, M. (2013). 'Using DEMO and Activity Theory to Manage Organization Change'. *Procedia Technology, 9, 563-572.

Goswami, D., Lewis, C., Rutherford, M. and Waff, D. (2009). *On Teacher Inquiry: Approaches to Language and Literacy Research. Language & Literacy (An NCRLL Volume)*. New York: Teachers College Press.

Greany, T. (2015). 'How can evidence inform teaching and decision-making across 21,000 autonomous schools?: Learning from the journey in England'. In C. Brown (Ed.), *Leading the use of research and evidence in schools*. London: IOE press.

Greene, J. C., Caracelli, V. J. and Graham, W. F. (1989). 'Toward a conceptual framework for mixed-method evaluation designs'. *Educational Evaluation and Policy Analysis, 11* (3)*, 255.

Greene, J. C. and Caracelli, V. J. (1997). 'Defining and Describing the Paradigm Issue in Mixed-Method Evaluation'. *New Directions for Evaluation, 74* (Summer)*, 5-17.

Groundwater-Smith, S. and Hunter, J. (2000). 'Whole-school inquiry : evidence-based practice'. *Journal of In-Service Education, 26* (3)*, 583-600.

Gu, Q. (2014, 11th March). *Evaluating the Teaching Schools Policy*. Paper presented at the Teaching Schools: Assessing the landscape. London, Park Crescent Conference Centre, International Students' House, 229 Great Portland Street, W1W 5PN.

Hall, G. E. (2013). 'Evaluating change processes: Assessing extent of implementation (constructs, methods and implications)'. *Journal of Educational Administration, 51* (3)*, 264-289.

Hall, R. and Lansbury, R. D. (2006). 'Skills in Australia: Towards workforce development and sustainable skill ecosystems'. *Journal of Industrial Relations,* 48 (5)*,* 575-592.

Hammer, D. (1999). Teacher Inquiry. Center for the Development of Teaching Paper Series (pp. 25): Education Development Center, 55 Chapel Street, Newton, MA 02138.

Hammerman, J. K. (1997). *Leadership in Collaborative Teacher Inquiry Groups*.

Hammersley, M. (2002). *Educational research, policymaking and practice*: Sage.

Hammersley, M. (2004). 'Some questions about evidence-based practice in education'. *Evidence-based practice in education,* 133-149.

Hammersley, M. (2005). 'The Myth of Research‐based Practice: The Critical Case of Educational Inquiry'. *International Journal of Social Research Methodology,* 8 (4)*,* 317-330.

Handscomb, G. and MacBeath, J. (2003a). 'Professional development through teacher enquiry'. In A. Lawson (Ed.), *Action research: Making a difference in education* (pp. 1-12). Slough: NFER.

Handscomb, G. and MacBeath, J. (2003b). The research-engaged school, *Essex County Council*.

Hargreaves, A. (1996a). 'Transforming knowledge: Blurring the boundaries between research, policy, and practice'. *Educational Evaluation and Policy Analysis,* 18 (2)*,* 105-122.

Hargreaves, A. (2000). 'Four ages of professionalism and professional learning'. *Teachers and Teaching: theory and practice,* 6 (2)*,* 151-182.

Hargreaves, A. (2009). *The learning mosaic: A multiple perspectives review of the Alberta Initiative for School Improvement (AISI)*: Alberta Education.

Hargreaves, A. and Shirley, D. (2009). *The fourth way: The inspiring future for educational change*. California: Corwin Pr.

Hargreaves, D. (1996b). 'Teaching as a research-based profession: possibilities and prospects (The Teacher Training Agency Lecture 1996)'. [Online]. Available   at: http://eppi.ioe.ac.uk/cms/Portals/0/PDF%20reviews%20and%20summari es/TTA%20Hargreaves%20lecture.pdf. [Last accessed March 2014].

Hargreaves, D. H. (1999a). 'The Knowledge-Creating School'. *British Journal of Educational Studies,* 47 (2)*,* 122-144.

Hargreaves, D. H. (1999b). 'Revitalising educational research: lessons from the past and proposals for the future'. *Cambridge Journal of Education,* 29 (2)*,* 239-249.

Hargreaves, D. H. (2003). *Education epidemic: Transforming secondary schools through innovation networks*. London: Demos.

Hargreaves, D. H. (2010). 'Creating a self-improving school system'.

Hargreaves, D., H,. (2011). Leading a Self Improving School System. Nottingham: National College for School Leadership.

Hargreaves, D. H. (2012). 'A self-improving school system: towards maturity'.

Hargreaves, D. H. and Hopkins, D. (2005). *The Empowered School: the management and practice of development planning*: Continuum Intl Pub Group.

Harrison, A. (2013). 'Dozens of 'outstanding' schools downgraded'. *BBC News*

Hattie, J. (2015). What works best in education: The politics of collaborative expertise: London: Pearson.

Hausfather, S. (2001). *Laboratory schools to PDSs: The fall and rise of field experiences in teacher education*. Paper presented at the The Educational Forum.

Heong, Y. L. (2012). 'Lesson study as professional development of science teachers in professional learning community schools'. *SCIOS,* 48 (1)*,* 21-24.

Hermans, H. J. M. (2001). 'The dialogical self: Toward a theory of personal and cultural positioning'. *Culture & Psychology,* 7 (3)*,* 243-281.

Hillage, J., Pearson, R., Anderson, A. and Tamkin, P. (1998). 'Excellence in Research on Schools: Research Report RR74'. *London: Department of Education and Employment*.

Hodgson, A. and Spours, K. (2015). 'An ecological analysis of the dynamics of localities: a 14+ low opportunity progression equilibrium in action'. *Journal of Education and Work,* 28 (1)*,* 24-43.

Hodkinson, P., Biesta, G. and James, D. (2008). 'Understanding learning culturally: Overcoming the dualism between social and individual views of learning'. *Vocations and Learning,* 1 (1)*,* 27-47.

Holling, C. S. (1986). 'The resilience of terrestrial ecosystems: local surprise and global change'. *Sustainable development of the biosphere,* 292-317.

Hood, C. (1989). Public Administration and Public Policy: Intellectual Challenges for the 1990s1. *Australian Journal of Public Administration*, 48(4), 346-358.

Hopkins, D. (2007). *Every School a Great School–Realising the Potential of System Leadership*. New York: McGraw- Hill Education.

Hopkins, D., Harris, A. and Jackson, D. (1997). 'Understanding the School's Capacity for Development: Growth states and strategies'. *School Leadership & Management,* 17 (3)*,* 401-412.

Hopkins, D. and Rudduck, J. (1985). *Research as a basis for teaching: Readings from the work of Lawrence Stenhouse*. London: Heinemann.

Hord, S. M. (2008). 'Evolution of the Professional Learning Community: Revolutionary Concept Is Based on Intentional Collegial Learning'. *Journal of Staff Development,* 29 (3)*,* 4.

Hoyle, E. (1974). 'Professionality, professionalism and control in teaching'. *London Educational Review,* 3 (2)*,* 13-19.

Hubbard, R. S. and Power, B. M. (2003). *The Art of Classroom Inquiry: A Handbook for Teacher-Researchers. Revised Edition*. Portsmouth, NH: Heinemann.

Husbands, C. (2014, 11th March). *Teaching Schools within the broader context of teacher education*. Paper presented at the Teaching Schools: Assessing the landscape. London, Park Crescent Conference Centre, International Students' House, 229 Great Portland Street, W1W 5PN.

Janssens, F. J. and van Amelsvoort, G. H. (2008). 'School Self-Evaluations and School Inspections in Europe: An Exploratory Study'. *Studies in Educational Evaluation,* 34 (1)*,* 15-23.

Jenkins, J. J. (1974). 'Remember that old theory of memory? Well, forget it'. *American Psychologist,* 29 (11)*,* 785.

Jennifer L, S.-G. (2005). 'Professional development in a culture of inquiry: PDS teachers identify the benefits of PLCs'. *Teaching and Teacher Education,* 21 (3)*,* 241-256.

Johnson, R. B. and Onwuegbuzie, A. J. (2004). 'Mixed Methods Research: A Research Paradigm Whose Time Has Come'. *Educational Researcher,* 33 (7)*,* 14-26.

Johnston, C. and Caldwell, B. (2001). 'Leadership and organisational learning in the quest for world class schools'. *International Journal of Educational Management,* 15 (2)*,* 94-103.

Joyce, B. R. (1991). 'The Doors to School Improvement'. *Educational Leadership,* 48 (8)*,* 59-62.

Katch, J. A. (1990). *Discord at Dewey's school: on the actual experiment compared to the ideal*

Katz, S. and Earl, L. (2010). 'Learning about Networked Learning Communities'. *School Effectiveness and School Improvement,* 21 (1)*,* 27-51.

Keat, J. B. (2005). 'Theory to Practice through Teacher Inquiry Courses in a Graduate Program: Two Teachers' Perspectives'. *Journal of Early Childhood Teacher Education,* 26 (3)*,* 207-223.

King, M. B. (2002). 'Professional development to promote schoolwide inquiry'. *Teaching and teacher education,* 18 (3)*,* 243-257.

Kiss, K. L. and Townsend, J. S. (2012). 'Teacher Inquiry from Knowledge to Knowledges'. *Issues in Teacher Education,* 21 (2)*,* 23-41.

Klein, J. (2000). 'Conditions that accelerate learning in schools'. *Studies in Educational Organization and Administration,* 24*,* 57-72.

Kochanek, J. R. (2005). *Building Trust for Better Schools: Research-Based Practices*: Corwin Press, A SAGE Publications Company. 2455 Teller Road, Thousand Oaks, CA 91320.

Kruse, S., Louis, K. S. and Bryk, A. (1994). 'Building professional community in schools'. *Issues in restructuring schools,* 6 (3)*,* 67-71.

Kübler-Ross, E., Kessler, D. and Shriver, M. (2014). *On grief and grieving: Finding the meaning of grief through the five stages of loss*: Simon and Schuster.

Kushner, S., Simons, H., James, D., Jones, K. and Yee, W. (2001). TTA school-based research consortium initiative, the evaluation, final report: University of the West of England & University of Southampton.

Lachman, R., Lachman, J. L. and Butterfield, E. C. (1979). *Cognitive psychology and information processing: An introduction*: Psychology Press.

Lam, Y. L. J. (2005). 'School organizational structures: effects on teacher and student learning'. *Journal of Educational Administration,* 43 (4)*,* 387-401.

Lave, J. and Wenger, E. (1991). *Situated learning: Legitimate peripheral participation*: Cambridge university press.

Leat, D., Reid, A. and Lofthouse, R. (2015). 'Teachers' experiences of engagement with and in educational research: what can be learned from teachers' views?'. *Oxford Review of Education,* 41 (2)*,* 270-286.

Levin, B. (2007). 'Sustainable, large-scale education renewal'. *Journal of Educational Change,* 8 (4)*,* 323.

Levin, B. (2008). *Thinking about Knowledge Mobilisation: A discussion paper for the Canadian Council on Learning and Social Sciences and Humanities Research Council.* [Online]. Available at: http://www.ccl-cca.ca/pdfs/OtherReports/LevinDiscussionPaperEN.pdf. [Last accessed 21 February].

Levin, B. (2010). 'Leadership for evidence-informed education'. *School Leadership and Management,* 30 (4)*,* 303-315.

Levin, B. (2011). 'Mobilising research knowledge in education'. *London Review of Education,* 9 (1)*,* 15-26.

Levin, B. (2013). 'To know is not enough: research knowledge and its use'. *Review of Education,* 1 (1)*,* 2-31.

Levine, M. (2002). 'Why Invest in Professional Development Schools?'. *Educational Leadership,* 59 (6)*,* 65-68.

Lewis, C., Perry, R., & Murata, A. (2006). How should research contribute to instructional improvement? The case of lesson study. *Educational researcher*, *35*(3), 3-14.

Little, J. (1990). 'The persistence of privacy: Autonomy and initiative in teachers' professional relations'. *The Teachers College Record,* 91 (4)*,* 509-536.

Lord, P., Lamont, E., Harland, J., Mitchell, H. and Straw, S. (2009). Evaluation of the GTC's Teacher Learning Academy (TLA): Impacts on teachers, pupils and schools. Slough: NFER.

Louis, K. S. and Kruse, S. D. (1995). *Professionalism and community: Perspectives on reforming urban schools*. California: Corwin Pr.

Lyles, M. A. and Schwenk, C. R. (1992). 'Top management, strategy and organizational knowledge structures'. *Journal of Management Studies,* 29 (2)*,* 155-174.

MacBeath, J. (2008). 'Leading learning in the self-evaluating school'. *School Leadership and Management,* 28 (4)*,* 385-399.

MacBeath, J., McGlynn, A. and Rudd, P. (2003). 'Self-evaluation: what's in it for schools?'. *Educational research,* 45 (2)*,* 205-206.

MacGilchrist, B., Myers, K. and Reed, J. (2004). *The Intelligent School*. (Second ed.). London: Sage.

MacIntyre, A. (2013). *After virtue*: A&C Black.

Mason, J. (2002). *Qualitative researching*: Sage.

Matthews, P. and Berwick, G. (2013). 'Teaching schools: First among equals'. *Nottingham: National College for School Leadership*.

McGinity, R. and Gunter, H. M. (2012). 'Living improvement 2: A case study of a secondary school in England'. *Improving Schools,* 15 (3)*,* 228-244.

McGinity, R. and Salokangas, M. (2012). *What is embedded research*. Paper presented at the Embedded Research Conference, University of Manchester, June.

McGinity, R. and Salokangas, M. (2014). 'Introduction:'embedded research'as an approach into academia for emerging researchers'. *Management in Education,* 28 (1)*,* 3-5.

McIntyre, D. (2004). 'Schools as Research Institutions'. In C. McLaughlin, D. McIntyre and H. K. Black (Eds), *Researching Teachers, Researching Schools, Researching Networks, a Review of the Literature*. Cambridge: Cambridge University.

McLaughlin, C. (2006). *Researching Schools: Stories from a schools-university partnership for educational research*: Taylor & Francis.

McLaughlin, C. (2011). 'Towards an Ecology of Teacher Collaboration on Research'. In N. Mockler and J. Sachs (Eds), *Rethinking Educational Practice Through Reflexive Inquiry: Essays in Honour of Susan Groundwater-Smith* (Vol. 7): Springer.

McLaughlin, C. and Baumfield, V. (2006). 'Bridging and bonding: Perspectives on the role of the university in SUPER'. In C. McLaughlin, K. Black-Hawkins, S. Brindley, D. McIntyre and K. S. Taber (Eds), *Researching Schools: Stories from a schools-university partnership for educational research*: Routledge.

McLaughlin, C. and Black-Hawkins, K. (2004). 'A Schools-University Research Partnership: understandings, models and complexities'. *Journal of In-service Education,* 30 (2)*,* 265-284.

McLaughlin, C. and Black, H. K. (2002). 'A school-university research partnership: conditions, understanding and paradoxes'. 20.

McLaughlin, C. and Black, H. K. (2007). 'School-university partnerships for educational research - distinctions, dilemmas and challenges'. *Curriculum Journal,* 18 (3)*,* 327-341.

McLaughlin, C., Black, H. K., McIntyre, D. and Townsend, A. (2007). *Networking practitioner research*. Abingdon, Oxon: Taylor & Francis.

McLaughlin, C., McIntyre, D. and Black, H. K. (2004). Researching Teachers, Researching Schools, Researching Networks, a Review of the Literature. Cambridge: Cambridge University.

McLaughlin, C. and Taber, K. S. (2006). 'Learning from stories of researching schools'. In C. McLaughlin, K. Black-Hawkins, S. Brindley, D. McIntyre and K. S. Taber (Eds), *Researching Schools: Stories from a schools-university partnership for educational research*: Routledge.

McLaughlin, J. H., Watts, C. and Beard, M. (2000). 'Just Because It's Happening Doesn't Mean It's Working: Using Action Research To Improve Practice in Middle Schools'. *Phi Delta Kappan,* 82 (4)*,* 284-290.

McLaughlin, M. W. and Talbert, J. E. (2006). *Building school-based teacher learning communities: Professional strategies to improve student achievement*. (Vol. 45): Teachers College Pr.

Meadows, E. (2006). 'Professional Development Through Teacher Inquiry and Dialogue: Teachers Discuss John Dewey's and Their Own Ideas about Education, Art, and Experience'. *Teacher Education and Practice,* 19 (4)*,* 455-471.

Mercan, B. and Göktaş, D. (2011). 'Components of innovation ecosystems: a cross-country study'. *International Research Journal of Finance and Economics,* 76*,* 102-112.

Miles, M. B., Huberman, A. M. and Saldaña, J. (1994). 'Qualitative Data Analysis'.

Mincu, M. E. (2015). 'Teacher quality and school improvement: what is the role of research?'. *Oxford Review of Education,* 41 (2)*,* 253-269.

Mitchell, C. and Sackney, L. (2000). *Profound improvement: Building capacity for a learning community*. (Vol. 9): Taylor & Francis.

Moran, A. and Clarke, L. (2012). 'Back to the Future: Do Lessons from Finland Point the Way to a Return to Model Schools for Northern Ireland?'. *European Journal of Teacher Education,* 35 (3)*,* 275-288.

Morris, A. and Peckham, M. (2006). Final report of the National Educational Research Forum: National Educational Research Forum London.

Mule, L. (2006). 'Preservice teachers' inquiry in a professional development school context: implications for the practicum'. *Teaching and Teacher Education,* 22 (2)*,* 205-218.

Munby, S. and Fullan, M. (2016). Inside-out and downside-up. How leading from the middle has the power to transform education systems: Education Development Trust.

Myllyviita, A. (2012). 'Finnish teacher training schools: behind good science teachers'. *Science Teacher Education,* (63)*,* 39-48.

NCSL. (2011). 'Teaching Schools Prospectus'. [Online]. Available at: http://www.education.gov.uk/nationalcollege/docinfo?id=146256&filenam e=teaching-schools-prospectus.pdf. [Last accessed 28th May 2012].

NCSL. (2012). Powerful professional learning: a school leaders' guide to joint practice development. Nottingham: National College for School Leadership.

NCTSL. (2014). *National Teaching Schools*. [Online]. Available at: http://www.education.gov.uk/nationalcollege/index/support-for-schools/teachingschools.htm. [Last accessed March 2016].

Nelson, J. and O' Beirne, C. (2014). Using Evidence in the Classroom: What Works and Why? Slough: NFER.

Nevalainen, T. and Hannunen, J. (2009). *Teachers as Knowledge Workers?* Paper presented at the World Conference on Educational Multimedia, Hypermedia and Telecommunications.

Nevo, D. and Nevo, D. (1995). *School-based evaluation: A dialogue for school improvement*: Pergamon Oxford.

NFER. (2010). *The Research-Engaged School/College Award.* [Online]. Available at: http://www.nfer.ac.uk/schools/research-engaged-award/assessment-criteria.cfm. [Last accessed 22nd September 2011].

Nonaka, I. and Takeuchi, H. (1995). *The knowledge-creating company: How Japanese companies create the dynamics of innovation*. New York: Oxford University Press, USA.

NTRP (2011). *Habitats for teacher research: teacher perspectives on research as a sustainable environment for CPD*: National Teacher Research Panel.

Nutley, S. and Davies, H. T. O. (2000). 'Getting research into practice: making a reality of evidence-based practice: some lessons from the diffusion of innovations'. *Public Money and Management,* 20 (4)*,* 35-42.

Nutley, S., Powell, A. and Davies, H. (2013). 'What counts as good evidence'. [Online]. *Alliance for Useful Evidence,*

Oancea, A. (2005). 'Criticisms of Educational Research: Key Topics and Levels of Analysis'. *British Educational Research Journal,* 31 (2)*,* 157-183.

Ofsted. (2003). An evaluation of the training schools programme. London: Office for Standards in Education.

Ofsted. (2014). The Framework for School Inspection: Ofsted.

Perryman, J. (2006). 'Panoptic performativity and school inspection regimes: Disciplinary mechanisms and life under special measures'. *Journal of Education Policy,* 21 (2)*,* 147-161.

Plowright, D. (2007). 'Self-evaluation and Ofsted Inspection. Developing an Integrative Model of School Improvement'. *Educational Management Administration & Leadership,* 35 (3)*,* 373-393.

Poet, H., Rudd, P. and Kelly, J. (2010). 'Survey of Teachers 2010. Support to improve teaching practice'. [Online]. Available at: http://www.nfer.ac.uk/nfer/publications/STYZ01/STYZ01.pdf. [Last accessed March 2016].

Poetter, T. S., Badiali, B. and Hammond, J. D. (2000). 'Growing Teacher Inquiry: Collaboration in a Partner School'. *Peabody Journal of Education,* 75 (3)*,* 161-175.

Polanyi, M. (1983). 'The tacit dimension. 1966'. *Gloucester, MA: Peter Smith*.

Pollard, A. (2006). 'Challenges facing educational research Educational Review Guest Lecture 2005'. *Educational Review,* 58 (3)*,* 251-267.

Pollard, A. (2010). 'Directing the Teaching and Learning Research Programme: or 'Trying to Fly a Glider Made Of Jelly''. *British Journal of Educational Studies,* 58 (1)*,* 27-46.

Popper, M., & Lipshitz, R. (1998). Organizational learning mechanisms a structural and cultural approach to organizational learning. *The Journal of Applied Behavioral Science*, *34*(2), 161-179.

Popper, M. and Lipshitz, R. (2000). 'Organizational learning mechanisms, culture, and feasibility'. *Management learning,* 31 (2)*,* 181-196.

Posner, M. I., Nissen, M. J. and Klein, R. M. (1976). 'Visual dominance: an information-processing account of its origins and significance'. *Psychological review,* 83 (2)*,* 157.

Postholm, M. B. (2015). 'Methodologies in Cultural–Historical Activity Theory: The example of school-based development'. *Educational Research,* 57 (1)*,* 43-58.

Power, M. (1997). *The audit society: Rituals of verification*: OUP Oxford.

Prigogine, I. (1984). 'Order out of chaos: Man's new dialogue with nature'.

Rallis, S. F. and MacMullen, M. M. (2000). 'Inquiry-Minded Schools:

Opening Doors for Accountability'. *Phi Delta Kappan,* 81 (10).

Reynolds, D. and Stoll, L. (1996). 'Merging school effectiveness and school improvement: The knowledge bases'. In D. Reynolds, R. Bollen, B. Creemers, D. Hopkins, L. Stoll and N. Lagerweij (Eds), *Making Good Schools: linking school effectiveness and school improvement* (pp. 59-93): Routledge.

Rickinson, M. (2005). 'Practitioners' use of research'. *A Research Review for the National Evidence for Education Portal (NEEP) Development Group.*

Rittel, H. W. and Webber, M. M. (1973). 'Dilemmas in a general theory of planning'. *Policy sciences,* 4 (2)*,* 155-169.

Roberts, A. and Nash, J. (2009). 'Enabling Students to Participate in School Improvement through a Students as Researchers Programme'. *Improving Schools,* 12 (2)*,* 174-187.

Robinson, V. M., Hohepa, M. K. and Lloyd, C. (2009). *School Leadership and Student Outcomes: Identifying what Works and why: Best Evidence Synthesis Iteration [BES]*: Ministry of Education.

Rogers, K. H., Luton, R., Biggs, H., Biggs, R., Blignaut, S., Choles, A. G., Palmer, C. G. and Tangwe, P. (2013). 'Fostering complexity thinking in action research for change in social-ecological systems'. *Ecology and Society,* 18 (2)*,* 31.

Rogers, P. J. (2008). 'Using programme theory to evaluate complicated and complex aspects of interventions'. *Evaluation,* 14 (1)*,* 29-48.

Rorty, R. (1999). 'Education as Socialization and as Individualization'. *Philosophy and social hope,* 114-126.

Ross, D., Brownell, M., Sindelar, P. and Vandiver, F. (1999). Research from Professional Development Schools: Can We Live Up to the Potential?, *Peabody Journal of Education* (Vol. 74).

Roth, W. M. and Tobin, K. (2002). 'Redesigning an" urban" teacher education program: An Activity Theory perspective'. *Mind, Culture, and Activity,* 9 (2)*,* 108-131.

Rowley, H. (2014). 'Going beyond procedure Engaging with the ethical complexities of being an embedded researcher'. *Management in Education,* 28 (1)*,* 19-24.

Rubin, B. C. and Jones, M. (2007). 'Student Action Research: Reaping the Benefits for Students and School Leaders'. *NASSP Bulletin,* 91 (4)*,* 363-378.

Sachs, J. (2003). *The activist teaching profession*. (Vol. 33): Open University Press Buckingham.

Sachs, J. (2011). 'Skilling or Emancipating? Metaphors for Continuing Professional Development'. In N. Mockler and J. Sachs (Eds), *Rethinking Educational Practice Through Reflexive Inquiry: Essays in Honour of Susan Groundwater-Smith* (Vol. 7). Dordrecht: Springer.

Sahlberg, P. (2011). *Finnish lessons: What can the world learn from educational change in Finland*: Teachers College Press.

Sammons, P. (1995). *Key characteristics of effective schools*. University of London.

Sanders, D., Sharp, C., Eames, A. and Tomlinson, K. (2006). 'Supporting research-engaged schools: a researcher's role'. [Online]. *NFER*. Available at: http://www.ceruk.ac.uk/nesta.pdf. [Last accessed 5th November, 2013].

Saunders, L. (2004). 'Evidence-led professional creativity: a perspective from the general teaching council for England'. *Educational Action Research,* 12 (1)*,* 163-168.

Saunders, L. (2006). 'Teachers' Engagement in and with Research: supporting integrity and creativity in teaching'. *Forum,* 48 (2)*,* 131-144.

Saunders, L. (2015). ''Evidence' and teaching: A question of trust?', *Leading the use of research and evidence in schools*. London: IOE press.

Schechter, C. and Mowafaq, Q. (2013). 'From Illusion to Reality: Schools as Learning Organizations'. *International Journal of Educational Management,* 27 (5)*,* 505-516.

Schechter, C. and Qadach, M. (2012). 'Toward an Organizational Model of Change in Elementary Schools: The Contribution of Organizational Learning Mechanisms'. *Educational Administration Quarterly,* 48 (1)*,* 116-153.

Schein, E. H. (1992). *Organizational culture and leadership*. (Vol. 2): Jossey-Bass.

Schön, D. A. (1983). *the reflective practitioner. how professionals think in action*. London: Ashgate publishing limited.

Schwartz, M. and Gerlach, J. (2011). 'The Birth of a Field and the Rebirth of the Laboratory School'. *Educational Philosophy and Theory,* 43 (1)*,* 67-74.

Senge, P. (1990). 'The art and practice of the learning organization'. *The new paradigm in business: Emerging strategies for leadership and organizational change,* 126-138.

Senge, P. M. (1997). 'The fifth discipline'. *Measuring Business Excellence,* 1 (3)*,* 46-51.

Senge, P., Hamilton, H. and Kania, J. (2015). 'The Dawn of System Leadership'. *Stanford Social Innovation Review,* 24 (Winter)*,* 27-33.

Senge, P. M., Kleiner, A. and Roberts, C. (1994). 'The fifth discipline fieldbook'. *London: Nicholas Brealey Publishing,| c1994,* 1.

Senge, P. M., McCabe, N. H. C., Lucas, T., Kleiner, A., Dutton, J. and Smith, B. (2000). *Schools that learn: A fifth discipline fieldbook for educators, parents, and everyone who cares about education*: Doubleday.

Sharp, C. (2007). Making Research Make a Difference, *Teacher research: a small scale study to look at impact*. Essex: Essex County Council Forum for Learning and Research/Enquiry (FLARE).

Sharp, C. (2009). 'How to become a research-engaged school'. [Online]. *Professional Development Today*. Available at: www.teachingtimes.com/articles/research-engaged-school-pdt-12-2.htm. [Last accessed 10/08/11].

Sharp, C., Eames, A., Sanders, D. and Tomlinson, K. (2005a). *Postcards from Research-engaged Schools*. Slough: NFER.

Sharp, C., Eames, A., Sanders, D. and Tomlinson, K. (2006). 'Leading a research-engaged school'. [Online]. *nscl research publications*. Available at: http://www.nationalcollege.org.uk/docinfo?id=17249&filename=leading-a-research-engaged-school.pdf. [Last accessed May 2013].

Sharp, C., Handscomb, G., Eames, A., Sanders, D. and Tomlinson, K. (2006c). 'Advising research-engaged schools: a role for local authorities'. [Online]. . Available at: http://www.nfer.ac.uk/publications/ITR03/.

Sharples, J. (2013). 'Evidence for the Frontline. A report for the Alliance for Useful Evidence'. [Online]. *Alliance for Useful Evidence*, June. Available at: http://www.alliance4usefulevidence.org/publication/evidence-for-the-frontline/. [Last accessed September 2013].

Sheard, M. K. and Sharples, J. (2015). 'School Leaders' Engagement with the Concept of Evidence-based Practice as a Management Tool for School Improvement'. *Educational Management Administration & Leadership,* 1741143215580138.

Siemens, G. (2014). *Connectivism: A learning theory for the digital age*. [Online]. Available at: http://www.itdl.org/Journal/Jan_05/article01.htm. [Last accessed 28/07/15:].

Silins, H., Zarins, S. and Mulford, B. (1998). 'What characteristics and processes define a school as a learning organisation? Is this a useful concept to apply to schools?'. *What characteristics and processes define a school as a learning organisation? Is this a useful concept to apply to schools?*

Simons, H. (2003). 'Evidence-based practice: panacea or over promise?'. *Research Papers in Education,* 18 (4)*,* 303-311.

Sleeper, R. W. and Burke, T. (1986). *The necessity of pragmatism: John Dewey's conception of philosophy*: University of Illinois Press.

Snoek, M. and Moens, E. (2011). 'The impact of teacher research on teacher learning in academic training schools in the Netherlands'. *Professional Development in Education,* 37 (5)*,* 1-19.

Somekh, B. (2010). 'The Collaborative Action Research Network: 30 years of agency in developing educational action research'. *Educational Action Research,* 18 (1)*,* 103-121.

Somekh, B. and Zeichner, K. (2009). 'Action research for educational reform: remodelling action research theories and practices in local contexts'. *Educational Action Research,* 17 (1)*,* 5-21.

Spicer, D. H. (2011). 'Power and Knowledge-Building in Teacher Inquiry: Negotiating Interpersonal and Ideational Difference'. *Language and Education,* 25 (1)*,* 1-17.

Spillane, J. P. (2012). *Distributed leadership*. (Vol. 4). San Francisco, CA: Jossey-Bass.

Spours, K. (2015). High skills regional eco system seminar. UCL Institute of Education.

Stake, R. E. and Trumbull, D. J. (1982). 'Naturalistic Generalizations'. In M. Belok and N. Haggerson (Eds), *Review Journal of Philosophy and Social Science* (Vol. VII)

Stenhouse, L. (1981). 'What Counts as Research?'. *British Journal of Educational Studies,* 29 (2)*,* 103-114.

Stenhouse, L. (1985). *Authority, Education and Emancipation*. London: Heinemann Educational Books.

Stephens, J. (2014, 11th March). *Teaching Schools in the policy landscape*. Paper presented at the Teaching Schools: Assessing the landscape. London, Park Crescent Conference Centre, International Students' House, 229 Great Portland Street, W1W 5PN.

Stoll, L. (2010). 'Professional Learning Community'. In P. Peterson, E. Baker and B. McGaw (Eds), *International Encyclopedia of Education (Third Edition)* (pp. 151-157). Oxford: Elsevier. Available [Online] at: http://www.sciencedirect.com/science/article/pii/B9780080448947004358. [Last accessed 5th November, 2013].

Swaffield, S. and MacBeath, J. (2005). 'School self-evaluation and the role of a critical friend'. *Cambridge Journal of Education,* 35 (2)*,* 239-252.

Swaffield, S. and MacBeath, J. (2006). 'Embedding Learning How to Learn in school policy: the challenge for leadership'. *Research Papers in Education,* 21 (2)*,* 201-215.

Symonds, J. E. and Gorard, S. (2010). 'Death of mixed methods? Or the rebirth of research as a craft'. *Evaluation & Research in Education,* 23 (2)*,* 121-136.

Tan, C.-Y. (2012). 'Instructional leadership: toward a contextualised knowledge creation model'. *School Leadership and Management,* 32 (2)*,* 183-194.

Tanner, L. N. (1997). *Dewey's laboratory school: Lessons for today.* (Vol. 6): Teachers College Press New York.

Tatto, M. T. and Furlong, J. (2015). 'Research and teacher education: papers from the BERA-RSA Inquiry'. *Oxford Review of Education,* 41 (2)*,* 145-153.

Teddlie, C. and Tashakkori, A. (2009). *Foundations of mixed methods research: Integrating quantitative and qualitative approaches in the social and behavioral sciences*: Sage Publications, Inc.

Teitel, L. (1998). 'Professional development schools: A literature review'. In M. Levine (Ed.), *Designing standards that work for professional development schools* (pp. 33-80). Washington, DC: National Council for Accreditation of Teacher Education.

Timperley, H., Wilson, A., Barrar, H. and Fung, I. (2007). *Teacher professional learning and development: Best evidence Synthesis Iteration (BES.* [Online]. Available at: www.oecd.org/edu/preschoolandschool/48727127.pdf. [Last accessed 2nd April].

TLA. (2011). Introducing the Teaching and Learning Academy, *www.tla.ac.uk*.

Toh, Y., Jamaludin, A., Hung, W. L. D. and Chua, P. M.-H. (2014). 'Ecological leadership: Going beyond system leadership for diffusing school-based innovations in the crucible of change for 21st century learning'. *The Asia-Pacific Education Researcher,* 23 (4)*,* 835-850.

Tooley, J. and Darby, D. (1998). Educational research A critique; a survey of published educational research. London: Ofsted.

Trachtman, R. (2007). 'Inquiry and Accountability in Professional Development Schools'. *Journal of Educational Research,* 100 (4)*,* 197-203.

Tsui, A., Edwards, G. and Lopez-Real, F. J. (2009). 'Sociocultural Perspectives of Learning'. In A. Tsui, G. Edwards, F. J. Lopez-Real and T. Kwan (Eds), *Learning in school-university partnership: Sociocultural perspectives*: Taylor & Francis.

Tsui, A., Edwards, G., Lopez-Real, F. J. and Kwan, T. (2009). *Learning in school-university partnership: Sociocultural perspectives*: Taylor & Francis.

Tsui, A. B. M. and Law, D. Y. K. (2007). 'Learning as boundary-crossing in school-university partnership'. *Teaching and Teacher Education,* 23 (8)*,* 1289-1301.

Tuomi-Grohn, T. and Engeström, Y. (2003). 'Between school and work: New perspectives on transfer and boundary-crossing'.

UNESCO. (2002). Available at: http://www.uis.unesco.org/Pages/Glossary.aspx.

Vidovich, L. (2003). 'Developing a research culture in schools in a context of globalization : critical and active engagement'. *Asia-Pacific Journal of Teacher Education & Development,* 6 (2)*,* 57-76.

Virkkunen, J. (2009). 'Two Theories of Organisational Knowledge Creation'. In A. Sannino, H. Daniels and K. D. Gutiérrez (Eds), *Learning and expanding with Activity Theory*. New York: Cambridge University Press.

Virkkunen, J. and Kuutti, K. (2000). 'Understanding organizational learning by focusing on "activity systems"'. *Accounting, Management and Information Technologies,* 10 (4)*,* 291-319.

Walton, D. (2014). *Abductive reasoning*: University of Alabama Press.

Webb, R. (1998). 'External inspection or school self-evaluation? A comparative analysis of policy and practice in primary schools in England and Finland'. *British Educational Research Journal,* 24 (5)*,* 539-556.

Weiss, C. H. (1998). 'Have we learned anything new about the use of evaluation?'. *American journal of evaluation,* 19 (1)*,* 21-33.

Wenger, E. (1998). *Communities of practice : learning, meaning, and identity*. Cambridge: Cambridge University Press.

Western, S. (2013). *Leadership: A critical text*: Sage.

Westley, F. R., Tjornbo, O., Schultz, L., Olsson, P., Folke, C., Crona, B. and Bodin, Ö. (2013). 'A theory of transformative agency in linked social-ecological systems'. *Ecology and Society,* 18 (3)*,* 27.

Wielkiewicz, R. M. and Stelzner, S. P. (2005). 'An ecological perspective on leadership theory, research, and practice'. *Review of General Psychology,* 9 (4)*,* 326.

Wiliam, D. (2002). *Linking Research and Practice: Knowledge Transfer or Knowledge Creation?* : ERIC/CSMEE Publications, 1929 Kenny Road, Columbus, OH 43210-1080.

Wilkins, C. (2011). 'Professionalism and the post‐performative teacher: new teachers reflect on autonomy and accountability in the English school system'. *Professional development in education,* 37 (3)*,* 389-409.

Wilkins, R. (2000). 'Leading the Learning Society'. *Educational management administration & leadership,* 28 (3)*,* 339.

Wilkins, R. (2011). Research engagement for School Development. London: Institute of Education.

Wilkins, R. (2014). *Education in the Balance: Mapping the Global Dynamics of School Leadership*. Bloomsbury Publishing.

William, J. (2009). *Talks to Teachers on Psychology, and to Students on Some of Life's Ideals*: BiblioBazaar, LLC.

Wilson, R., Hemsley-Brown, J. and Sharp, C. (2003). *Using research for school improvement: The LEA's role*: National Foundation for Educational Research.

Winch, C., Oancea, A. and Orchard, J. (2013). 'The Contribution of Educational Research to Teachers' professional learning–philosophical understandings'. *London: BERA*.

Winitzky, N., Stoddart, T. and O'Keefe, P. (1992). 'Great expectations: Emergent professional development schools'. *Journal of Teacher Education,* 43 (1)*,* 3-18.

Wirsing, J. (2009). 'Regaining Momentum: Teacher Inquiry as Ongoing Professional Development'. *Voices from the Middle,* 16 (4)*,* 25-31.

Worrall, N. O. N. and Noden, C. (2006). 'Working with Children, Working for Children: a review of Networked Learning Communities'. *Forum,* 48 (2)*,* 171.

Yin, R. K. (2002). *Case study research: Design and methods*. (Vol. 3): Sage Publications, Inc.

Appendices

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Appendix 1: Search terms for literature review and databases:

This section provides information on the keywords and search strategy for the databases and websites searched as part of the review.

All searches were limited to publication years 1996-2014, in English language only.

Literature was identified through:

• a search of relevant education and social science databases (BEI; ERIC; British Humanities Index; Australian Education Index; Sociological Abstracts; International Bibliography of Social Sciences; Web of Science and Social Science Citation Index; Psych Info

• a search of relevant national organisation and government websites in the UK and internationally

• existing knowledge of publications and recommendations from supervisor

• a search of expert authors in the field

• reference harvesting.

AND (followed by Schools):

Research-engaged	Research culture
Research capacity	Learning organisation
Learning-centred	Organisational learning
Knowledge	Practitioner research*
creat*/us*/mobil*/produc*/transfer	Self-improving
Thinking	Self-evaluating
Intelligent	Self-transforming
Enquiring	Parent*(as) research*
Innovative	Parent* e/inquir*
Enquiry based /led	Student* *(as) research*
Action research	Student* e/inquir*
Research-informed	
Research based	Also:
Research led	School-based research
Research use/utilisation	(National) Teaching schools
Researching institutions	Professional Development Schools (US model)
Evidence informed	
Evidence-based	Teacher* research*
Evidence led	Teacher as researcher
Evidence use/utilisation	Teacher e/inquir*
Accessing research	Laboratory School
Accessing evidence	Coalition of Knowledge building schools (no date limit)
	Collaborative Action Research Network (no date limit)

Appendix 2: Research time line:

August 2011:
Outlining research methodology and construction of survey, including ethical approval
Identification of schools to contact for approval in distributing survey

September 2011
Piloting the research engagement questionnaire with small group of teachers

October 2011
Piloting research engagement questionnaire with first secondary school
Sending out questionnaires to larger pool of schools
Some early analysis of data from questionnaires
Some preliminary face to face or phone interviews with relevant senior staff/head teacher
Access arrangements made and gatekeepers identified

November 2011
Complete write-up of:
Draft Literature review
Draft Methodology section

December 2011
Completion of upgrade documents
Mock Upgrade session
Draft report of initial analysis of data from sampling surveys

January 2012
Analysis of survey data
Construct interview schedule and list of 'interesting' staff to involve

February 2012
Reports of survey data completed and sent out to contributing schools
Schools for follow-up case study identified and contacts made regarding interviews and observations of activities
First round of case study interviews in identified schools
Begin observations of research related activities and documentary analysis

June/ July 2012
Second round of case study interviews in identified schools – following through staff at end cycle of annual research

July 2012 – August 2013
Data analysis of surveys

September 2013 – August 2015
Writing up Introduction, literature review and methodology chapters
Refining theoretical framework for analysis of interview data at five case study schools

August 2015 – April 2016
Writing up final chapters

Appendix 3: School research engagement questionnaire:

Thank you for agreeing to complete this survey of your school's research engagement. Twelve schools in London and the South East are taking part in this initial stage and around half of these will be followed up as case studies. The purpose of the survey is to gauge the extent to which, in your school, research is engaged with (using/accessing externally published research) and in (carried out by staff) to inform its decisions and practice. Your name is required in case the researcher wishes to follow-up with an interview (with your consent) based on one or more of your responses. However, please be assured that individual's survey entries will not be disclosed to any school staff, nor be named in the final report; these will only be used to help describe the overall level of the school's research engagement. Nevertheless if, having submitted your questionnaire, you wish for your data to be excluded from the analysis, please contact me at the email address below. A summary of the findings will be made available via your Head Teacher once the analysis has been completed.

Further queries can be directed to David Godfrey at dgodfrey@ioe.ac.uk

1) Name	

2) Email address	

3) Name of School	

4) Your position	Teacher	Management/TLR post	Assistant or Deputy Head	Headteacher	AST	Teaching Assistant	Supply

5) Gender	Male	Female

6) Teaching Experience	0-4 years	5-9 years	10-19 years	20 years or more

7) Postgraduate Qualifications (other than first teaching qualification)	None	Masters	PhD/EdD	Postgraduate Diploma	Other (please State)

a) **Values, leadership and culture**

Please circle one response which best applies

8) In this school, we are encouraged to engage **in** research as part of our continuing professional development

I don't know	Strongly agree	Agree	Disagree	Strongly Disagree

9) In this school, we are encouraged to engage **with** research as part of our continuing professional development

I don't know	Strongly agree	Agree	Disagree	Strongly Disagree

10) In this school, we are encouraged to engage **in** research to inform departmental development

I don't know	Strongly agree	Agree	Disagree	Strongly Disagree

11) In this school, we are encouraged to engage **with** research to inform departmental development

I don't know	Strongly agree	Agree	Disagree	Strongly Disagree

12) In this school, we are encouraged to engage **in** research to inform wider school development

I don't know	Strongly agree	Agree	Disagree	Strongly Disagree

13) In this school, we are encouraged to engage **with** research to inform wider school development

I don't know	Strongly agree	Agree	Disagree	Strongly Disagree

14) Senior leaders at this school support engagement **in** research

I don't know	Strongly agree	Agree	Disagree	Strongly Disagree

15) Senior leaders at this school support engagement **with** research

I don't know	Strongly agree	Agree	Disagree	Strongly Disagree

16) The school's culture encourages challenge and learning

I don't know	Strongly agree	Agree	Disagree	Strongly Disagree

17) There is a collaborative ethos of professional learning among members of staff

I don't know	Strongly agree	Agree	Disagree	Strongly Disagree

b) Support systems for engaging in and with research:

18) Time is made available to engage in research	YES	NO	DON'T KNOW

19) We have access to research-based resources	YES	NO	DON'T KNOW

20) Mentoring support is available for engaging in research	YES	NO	DON'T KNOW

21) We have access to sources of research expertise to advise the planning, conduct, analysis and interpretation of research	YES	NO	DON'T KNOW

22) Other comments you'd like to make about support systems for engaging in and with research:

c) Research activity

23) There is a system for encouraging staff engagement in research/enquiry	YES	NO	DON'T KNOW

24) I have *carried out* my own school-based research/enquiry while working at this school	YES	NO
If yes, please give year you started and completed (or are due to complete) this research:		

25) This research formed part (or whole of) an accredited course by an external body (e.g. university)	YES	NO	N.A

If yes, please state nature of qualification and name of university/other accrediting body

26) I have been to some degree *involved in* school-based research while working at this school	YES	NO

If yes, please state nature of involvement here (e.g. mentoring/contributing data/supervising/participant in research)

27) The school bases some of its decisions on research evidence (at any level - individual, departmental, whole-school)	YES	NO	DON'T KNOW

If yes, give one example here:

28) The school has a formal link with a university (for the purposes of professional development or research)	YES	NO	DON'T KNOW

If yes, please state name of university:

d) Impact

29) The school is committed to sharing the results of its research within the organisation	YES	NO	DON'T KNOW

30) The school is committed to sharing the results of its research beyond the organisation	YES	NO	DON'T KNOW

31) The school has contributed to external research-related partnerships, networks, events or publications	YES	NO	DON'T KNOW

If yes, give one example:

e) Sustainability

32) There is a designated member of staff (or members of staff) who is/are responsible for promoting research engagement	YES	NO	DON'T KNOW

If yes, please state the name(s) of these members of staff and/or their job title/s

33) There is funding available for engagement in research over the next few years	YES	NO	DON'T KNOW

34) There is training available to develop skills of research	YES	NO	DON'T KNOW

f) Overall

35) Considering the use of research summaries and articles, which one of the following most applies to your school?	Tick one from below:
My school uses research findings to inform many aspects of its work	
My school encourages its members to use research findings from time to time	
My school has little or no engagement with research findings	
I don't know	

36) Considering involvement in carrying out research, which one of the following most applies to your school?	Tick one from below:
My school carries out research to inform many aspects of its work	
My school has been involved in external research projects but has not undertaken its own research	
My school encourages its members to do research	
My school has little or no engagement in doing research	
I don't know	

37) With respect to 'research engagement' in your school, please add any further comments :

Thank you for your support in this project by taking the time and consideration to complete this survey.

Appendix 4: Comparisons of previous tools used in relation to defining, measuring, exploring the concept of a 'research-engaged school'

NFER Research –Engaged School and College Award Assessment Criteria	(Ebbutt, 2002)	Checklist for reviewing leaders' support for practitioner research (p. 5 Wilkins 2011, 'Developing the research-engaged school' unpublished)	(Sharp et al., 2006b) Characteristics of the Research-engaged school:	Handscombe and MacBeath (2003) Research-Engaged School health check
1. Values, leadership and culture 1.1 - Is research/enquiry at the heart of the organisation? 1.2 - Is school culture supportive? 1.3 - How does research contribute to learning? 1.4 - How do senior leaders demonstrate active support? 1.5 - How is commitment to research/enquiry evident in the school? **2. Support systems** 2.1 - How is time made available? 2.2 - What access do you have to other resources from the school? 2.3 - What mentoring support is available? 2.4 - What other ways do people gain access to research findings and expertise? **3. Research activity** 3.1 - What is the system for encouraging research engagement? 3.2 - How do research areas reflect the interests of the organisation? 3.3 - Main research activities in the last three years 3.4 - How is ethical practice ensured? 3.5 - How is quality of process and outcomes assured? **4. Impact** 4.1 - How does the organisation show its commitment to sharing results? 4.2 - What opportunities are there for sharing results outside the school? 4.3 - How has your school contributed to external research-related partnerships, networks, events or publications? (Two specific examples to be given.) **5. Sustainability** 5.1 - How many staff have been involved in research in the last three years? 5.2 - Which members of your organisation have been involved as researchers? 5.3 - How do you encourage people to become involved for the first time? 5.4 - How sustainable is your organisation's research-engagement in the next three years? 5.5 - How do you intend to build your school's research skills, capacity and impact in the next three years	**Q4.2/4.3 Which of the following factors do you see as supportive to /working against the ongoing development of a research culture amongst the staff in your school?** • The professionalism of your colleagues. • The trust staff members have for one another. • The recent history of initiatives in this school. • The management structures in place to support developments of this nature. • Parental support for this and other initiatives. • The commitment of senior management to support development of this nature. • The partnership with the University of Cambridge School of Education. • The leadership qualities of the Head/Principal/Warden. • The school's commitment to enhance the learning of its students. • The range of research experience held by staff. • The school's commitment to knowledge creation. • The physical facilities within the school. • The ICT facilities available in this school. • The investment in terms of time that the school has committed. • The investment in terms of finance that the school has committed. • The school's links and contacts with outside bodies. • The nature of the students who attend this school. • Community support for initiatives in this school. • Other. Plus, an open-ended question: With respect to the development of a culture of educational research amongst my colleagues, I would say that my school ...	**A. Inspiring** How and to what extent does the leadership team build and institutionalise a shared vision which is consistent with encouraging practitioner research? How and to what extent does the leadership team encourage staff to develop their roles in ways which are conducive to practitioner research? How and to what extent does the leadership team ensure that senior managers give support to staff who are engaged in practitioner research, and take interest in, and value, their findings? **B. Social Supporting** How and to what extent does the leadership team prioritise professional development in overall school development, giving it adequate resources, in ways which foster practitioner research? How and to what extent does the leadership team ensure that practitioner research undertaken by staff is relevant to the interests and needs of other staff? How and to what extent does the leadership team encourage staff to work collaboratively? **C. Enabling** How and to what extent does the leadership team provide intellectual stimulation by drawing upon professional reading and published research findings? How and to what extent does the leadership team ensure that staff are given time to engage in practitioner research? How and to what extent does the leadership team ensure that staff are given time and opportunity to disseminate their practitioner research? How and to what extent does the leadership team enable staff engaged in practitioner research to develop their skills in sharing their results with colleagues? How and to what extent does the leadership team procure external support, eg from a university, for staff engaged in practitioner research?	• School leadership is committed to using evidence for school improvement • The school's culture encourages challenge and learning • Commitment of resources to enable staff to spend time on research • Collaborative ethos among members of staff (the research team) • Access to sources of research expertise to advise the planning, conduct, analysis and interpretation of research • Access to mentoring support, (e.g. from colleagues within the school) • Commitment to share research within the school • Commitment to forging research communities within and beyond the school	4 audit questions: 1. Are significant decisions informed by research, i.e. systematic enquiry made public? 2. Do people have access to tools that help them to challenge their practice? 3. Do others have access to ways in which we conducated research in order to make their own judgements? 4. Are the outcomes of our research effectively communicated both within the school and beyond? Audit invites a tick along four descriptors, which describe 100%/75%/50%/25% achievement for each. For example, last statement, to achieve 100% needs to fulfil the descriptor: *Yes, systematic arrangements have been made to ensure transmission of research outcomes in classroom settings within the school, and teacher to teacher dissemination beyond the school.* *(systematic arrangements implies 'embeddedness' i.e. the presence of a system, rather than reliance on enthusiasm of particular individuals.*

Appendix 5: Executive summary of report sent to schools about their research engagement culture after phase 1 (the survey)

Executive Summary:

Teaching staff from eight secondary schools in England were surveyed in late 2011/early 2012. The selection of schools was not meant to be representative of this sector, but rather a look at institutions who had expressed some interest in research engagement and/or had been identified by the researcher as potentially interesting sites for analysis in this regard. Five of the participating schools are from the first cohort of 100 national Teaching Schools. The questionnaires, completed both online or on paper, were put together by the researcher, as part of his doctoral research, adapted from previous measures and definitions of the 'research-engaged school'. The intention of this phase of the case studies was to begin to compare patterns of research engagement in these schools and to gauge the extent to which a culture of research is currently embedded in their school practices. Earlier research had suggested three developmental stages of 'research culture' – 'emergent', 'established' and 'established-embedded' (Ebbutt, 2002). This research seeks to build on Ebbutt's work, with a more finely calibrated instrument to assess research engagement based on a body of work that has emerged principally since 2003 (e.g. Handscomb and MacBeath, 2003; NFER, 2010; Sanders *et al.*, 2006; Sharp, 2009; Sharp *et al.*, 2005; Sharp *et al.*, 2006a; Sharp *et al.*, 2006b; Wilkins, 2011a; Wilkins, 2011b). This report has been written with the senior management teams of the participating schools in mind. Overall summaries for comparison and benchmarking are included, along with section summaries and individual item analysis[24]. The breakdown of the survey into sections of research engagement allows for some targeting of areas to develop, should this be an aim of the school SMT. Overall comparative analysis suggests four categories of development, with schools at 'emerging', 'establishing', 'established' and 'embedded' stages of research engagement.

Appendix 6: Email message sent to school Head teachers and briefing document

Invitation to participate in research project

Exploring school research engagement cultures 2011-13

Dear Mr/Mrs   ,

I would like to invite you and the staff at your school to participate in a project by the London Centre of Leadership in Learning (The Institute of Education, University of London) looking into cultures of research engagement in schools. Attached is a briefing document which outlines the aims and methodology for the research.
I believe that participation will be of benefit not only to the wider research community but to your school. If you would like to take part or hear further details, please send a brief email reply to me and we can initiate a discussion about arrangements for distributing the survey and for conducting the case study.

Yours sincerely,

David Godfrey
Doctoral Researcher
Cultures of Research engagement in Schools
London Centre for Leadership in Learning
Institute of Education, University of London

Mobile: 07811 497 470
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Exploring school research engagement cultures 2011-13
Invitation to participate in research project

David Godfrey
dgodfrey@ioe.ac.uk

OVERVIEW

Much debate has ensued in the last 15 years about the relationship between research and teaching practice, the nature of teaching as an evidence-based profession and the contribution of research to school improvement. Bringing these strands together, some schools have actively pursued a strategy of 'research engagement' - a 'research-engaged school' being defined as (one that), "places research and enquiry at the heart of its outlook, systems and activity" Handscomb, G. and J. MacBeath (2003). The purpose of this research project is to survey a selected group of secondary schools in order to ascertain the extent to which they have embedded an organisational culture that encourages engagement **with** (staff using/accessing externally published research) and **in** (carried out by staff) research. From the initial survey, about half of the schools will be followed up as detailed case studies to further explore this pattern of research engagement. This will include interviewing staff at universities involved in formal research-based links with these schools. The aim will be to identify patterns of school-based research practice that are deemed to be the most effective and most appropriate from the perspectives of a range of stakeholders.

Handscomb, G. and J. MacBeath (2003). "The research-engaged school."
Essex County Council.

SCOPE OF THE RESEARCH
Summary of research design:
Phase 1:

- Survey of teaching staff at several secondary schools, mainly in London and the South East

Phase 2:

- Follow-up case studies at approximately six schools with interviews, documentary analysis and observations of significant research-related activities

<u>Benefits of the research:</u>
To the research community:
Detailed case studies will help to illuminate how staff in schools are engaging in and with research and how such cultures work to enable or inhibit such activity. The survey, having been tested against a more detailed follow-up analysis, can be further refined in order to develop a normative measurement of research engagement that can be replicated on other sites. It is hoped that university researchers will be able to develop a more efficient and appropriate form of research-partnership which accords more closely with the aims of the school and its current 'stage of development' towards an 'ideal' form of research engagement.
To the school:
Results of the school surveys will be sent to the Headteacher who can disseminate this to staff. Such an 'audit' of research engagement could be used to guide further decision-making, complement existing self-evaluation measures, and be built into school development plans. Further detailed case studies will further refine the picture of how members of school staff engage with research and this should be an interesting professional learning experience for those involved. Although having no link with this project, your school might be interested that the National Foundation for Educational Research has an award for 'Research-Engaged Schools'[25].
In the current policy 'climate'
The coalition Government's White Paper 'The Importance of Teaching', sets out an agenda for greater school autonomy, including, "school-led school improvement replacing top-down initiatives"[26]. The research-engaged school concept falls squarely within such an aim. The new 'Teaching School' designation also includes a section requiring the application to show "clear evidence of strong engagement in school-based practitioner-led research and support for teachers gaining academic and professional awards"[27]. Such a climate suggests the need for schools to be proactive learning organisations that manage their own agendas for knowledge creation, use and transfer. The growing trend towards partnerships and networks of schools working with universities also necessitates the development of models of good practice and process which are sustainable and cost-effective.

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[25] http://www.nfer.ac.uk/schools/research-engaged-award/

[26] http://www.education.gov.uk/schools/teachingandlearning/schoolswhitepaper/b0068570/the-importance-of-teaching/

[27] The Teaching Schools Prospectus,
http://www.nationalcollege.org.uk/docinfo?id=146256&filename=teaching-schools-prospectus.pdf

PROTOCOLS

- Initial email contact with the Head teacher to gain access a) for the purposes of the survey and b) for consent to potential follow-up as a case study school.

- Arrangements made for the distribution of paper-based and/or online version of the survey and collection (if paper-based). This should accord with the school's own internal systems of communication in order to ensure **a high response rate, aiming for all (or a high proportion of) teaching staff to complete.**

- Staff responses to survey will include names in order to allow tracking of significant individuals for later interviews in the case study phase but will be kept confidential by excluding these from survey reports. Use of names of schools and individuals to be negotiated according to level of sensitivity and discussed and agreed with those parties involved before each interview, observation or other data collection exercise.

- **Deadline for completion of survey: End of March 2012**

- April 2012: Initial findings of report to be sent to Head teacher

- Arrangements for access to school and timeframe for case studies agreed in Early 2012

- Case studies to be completed by end of 2012/early 2013

PRACTICAL ARRANGEMENTS

If you agree to your school taking part in this research project, or would like further information, please contact me by email at the address below. Given the need to obtain a **high completion rate by school teaching staff at all levels of seniority**, the support of the Head teacher or another senior leader in this project will be crucial to ensure this. I would like to thank you for reading this brief and look forward to hearing from you soon.

ABOUT THE RESEARCHER

I am a doctoral researcher at the Institute of Education in the London Centre for Leadership in Learning. My academic background is in psychology, research methods and action research. Until 2010, I was an Assistant Director (Research engagement) at the Sixth Form College Farnborough with responsibility for supervision of action research projects, organising an annual conference for the Hampshire Partnership of Colleges and editing an in-house research journal. I was on the editorial board for the National Foundation for Educational Research's (NFER) P.R.E (Practical Research for Education) journal and currently participate in a working group for The Coalition of Evidence-based Education's 'Evidence for the Frontline' project. I work as an Inspector for the Independent Schools' Inspectorate (I.S.I) and have experience of conducting External Quality Reviews

(E.Q.R). I also retain a link with the Sixth Form College Farnborough and a cluster of secondary schools as a consultant on research engagement issues.

CONTACT DETAILS
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Appendix 7: Interview consent form

Exploring school research engagement cultures 2011-14
Interview Consent Form

About the research:
The purpose of this research is to explore patterns of school-based research practice, and to develop an understanding of the extent to which the culture of professional learning determines the scope of such activity. The first stage of the study consisted of a survey of teaching staff at eight schools and the interviews and other forms of evidence gathering will be used to develop a more detailed picture of the role of research engagement within the overall culture of professional learning in around six of these schools. The findings of this research will be used as part of the researcher's doctoral thesis and may also be used in other publications.

About the researcher:
I am a doctoral researcher at the Institute of Education in the London Centre for Leadership in Learning. My academic background is in psychology, research methods and action research. Until December 2010, I was an Assistant Director (Research engagement) at the Sixth Form College Farnborough. I also work as an Inspector for the Independent Schools' Inspectorate (I.S.I).

Ethical considerations:
In order to enable open discussion during the interview, identities of participants will be protected and the names of the schools in which they work will be changed. The content of the interviews will not be shared with other members of staff at your school or other schools. You should also be aware in what you reveal during the interview that specific examples in the context of your work practice may reveal your identity to other people known to you. Thus, while every care will be taken to protect confidentiality and avoid embarrassment to others, this is not entirely guaranteed by measures that can be taken by the researcher. I will be audio-recording the interview to enable detailed analysis. Once completed, I will forward the transcript in order that you can check its accuracy and may also send some preliminary interpretations to ensure I have represented your words correctly. If you wish for your data to removed at any time from the analysis, this is your right, and signing below does not commit you to anything other than confirming your fully informed consent to participation in the interview today.

I _____ agree to taking part in this interview and understand the aims of the research
Date:

Appendix 8 the 'Impact' node

Nodes\\d)	Impact
Nodes\\d)	Impact\Contributing to external partnerships
Nodes\\d)	Impact\contributing to wider educational knowledge
Nodes\\d)	Impact\decisions made on the basis of research activity
Nodes\\d)	Impact\decisions made on the basis of research activity\Curriculum changes
Nodes\\d)	Impact\decisions made on the basis of research activity\data analysis informing decisions
Nodes\\d)	Impact\decisions made on the basis of research activity\Involving Parents
Nodes\\d)	Impact\decisions made on the basis of research activity\lack of influence on decisions
Nodes\\d)	Impact\decisions made on the basis of research activity\Pastoral and SEN
Nodes\\d)	Impact\decisions made on the basis of research activity\Physical or resource changes
Nodes\\d)	Impact\decisions made on the basis of research activity\structural and procedural changes
Nodes\\d)	Impact\decisions made on the basis of research activity\Student voice
Nodes\\d)	Impact\decisions made on the basis of research activity\Teacher training use
Nodes\\d)	Impact\decisions made on the basis of research activity\Teaching and pedagogy
Nodes\\d)	Impact\decisions made on the basis of research activity\Use of technology
Nodes\\d)	Impact\decisions made on the basis of research activity\Whole school changes
Nodes\\d)	Impact\sharing research beyond the school or collaborating beyond the school
Nodes\\d)	Impact\sharing results within

Appendix 9: Examples of research projects carried out by survey respondents

Projects relating to pedagogy:

- Group work research
- Questioning
- Essay writing
- I carried out a project to see if there was a better way to deliver homework, and trialled with questionnaires etc.; a homework booklet with a year 8 class a few years ago.
- Concentration in relation to food, sleep and exercise in children
- Raising the progress of high achievers in English
- Guidelines for the teaching of English as an additional language
- Using a science fair for year 9 science lessons
- Encouraging pupil dialogue
- Using role play in science lessons
- Approaches to teaching literacy
- Interviewing and filming students about their experience of exam preparation for Year 13 Politics.
- Looking at a more open lesson planning and using teacher body language in the classroom.
- The use of mobile phones to record homework and therefore improve student engagement of participation

The process of teacher training:

- Research on coaching
- EPD (Early Professional Development) research project, investigating the effects of developing teaching practice on a sample of students and presenting the results to SLT
- Collecting and analysing data on ITT
- Filming of a mentor-trainee post lesson debrief by Teachers TV

Particular needs of groups of students and/or with whole-school relevance:

- SEN needs, issues, laws and changes.
- Dissertation topic, free schools
- Student attendance and punctuality research for behaviour improvement programme
- Vertical tutoring
- Research into primary transition and AFL for Modern Languages
- Research in the use of pupil data
- Classroom acoustic project
- Research into the use of 'nurture' groups
- The impact of mental health problems on learning
- Primary research with employment agencies and it became evident that we needed more of an emphasis on 'secretarial' skills such as telephone manner, spoken English etc. We used this research to inform the curriculum.
- I have been involved in an Action Learning Set which focused on setting up a research programme into the benefits and uses of student voice. Once the research was undertaken, a group of us then used the results to tailor and modify our own practice.

Examples of participation in research related to external agencies, universities or network related projects. These included:

- Ways to encourage pupils to study physics (and science) further/post 16
- Creativity and innovation in language
- Assessment for Learning
- Dialogic teaching (MEd project of colleague)
- Learning lessons initiative
- Participant in research for National Foundation for Educational Research
- Loughborough university, leader of research for Sky Sports Living for Sport project
- Independent learning
- Impact of Learning to Learn
- Numerous small scale projects with other colleagues -
- Leading Edge School Research

- CPD took form of small voluntary task groups with a common interest sharing ideas, researching ideas, trialling strategies and ultimately feeding back learning to each other for past (I think) 2 years in this school
- LSE aspirations survey - facilitating student participation in external research
- I've also done external training, but the training was actually somebody else's research project, and they were running the training as part of their research project.
- Focus group on free schools

Appendix 10: Analysis of variance in responses to section a by seniority of respondent

ANOVA Comparison of responses on questions 8-17 (Values, leadership and culture) by position of respondent

		ANOVA				
		Sum of Squares	df	Mean Square	F	Sig.
In research (CPD)	Between Groups	6.656	5	1.331	1.118	.350
	Within Groups	365.421	307	1.190		
	Total	372.077	312			
with research (CPD)	Between Groups	7.575	5	1.515	2.069	.069
	Within Groups	232.857	318	.732		
	Total	240.432	323			
In research (wider school)	Between Groups	11.038	5	2.208	1.834	.106
	Within Groups	363.595	302	1.204		
	Total	374.633	307			
with research (Dept)	Between Groups	2.440	5	.488	.576	.718
	Within Groups	270.959	320	.847		
	Total	273.399	325			
In research (dept)	Between Groups	3.522	5	.704	.568	.725
	Within Groups	387.031	312	1.240		
	Total	390.553	317			
With research (wider school development)	Between Groups	8.447	5	1.689	1.900	.094
	Within Groups	269.365	303	.889		
	Total	277.812	308			
Leaders Support (In research)	Between Groups	5.102	5	1.020	1.344	.246
	Within Groups	217.154	286	.759		
	Total	222.257	291			
Leaders Support (with research)	Between Groups	2.760	5	.552	1.004	.416
	Within Groups	158.370	288	.550		
	Total	161.129	293			
Culture challenge and learning	Between Groups	3.948	5	.790	1.917	.091
	Within Groups	140.462	341	.412		
	Total	144.409	346			
Collaborative Ethos	Between Groups	3.679	5	.736	1.755	.122
	Within Groups	142.532	340	.419		
	Total	146.211	345			

Appendix 11: Purposes of research in case study schools from surveys and interviews

1. Refining research or strategies for the specific school context:

Several examples were given of refining ideas derived from published research. At Trinity Green School, Daniel illustrated how two of the senior leaders would come to a meeting with a description of some important research,

"and then take it to us and say, "How can we tweak it to fit our school?" So that for me is where the research comes in."

This recognition that academic research or thinking needed to be adapted to the 'real world' as experienced in their school environment, was illustrated by Lauren, a teacher at Barnfield Community School:

"And I also- the other difficulty I have with it, is that what works in one school, or classroom, educational authority, wouldn't necessarily work in another. I think we all work in quite a unique situation in a way, and so you can research snippets but actually then using what you've researched for your practice takes a bit of… That's the crucial bit, refining that and knowing what will work and what wouldn't. Well for example when we read a section of that Demos report 'the forgotten half', there was a bit of it that we thought would really relate to our school. Well I did when I read it. And then when I showed it to everyone else they were like "but this isn't taking into consideration the fact that this child's parents might be alcoholics and he is in care, and so he has no concept of the world of work and all these different types of things.""

Lauren's example reflects Lawrence Stenhouse's view that published research should be seen as a hypothesis to be tested and explored, rather than a 'truth' that can be unproblematically implemented.

Another interviewee explained how the research conducted in his school frequently did not meet the criteria of 'proper' or 'academic' research but that this did not diminish its importance:

"Yes, I mean I feel it's research but in the school. And we're sort of not making any claims that what we've found can go beyond it, it's research in the context of this little world that occupies these 70 teachers and 1500 kids or something. So to me I'd say it is research and I'd say it is valid research but there's that context of it's specific for this school, this environment." (Carl, Trinity Green School)

2. Developing and improving practice

The primacy in importance of developing existing practice came across very strongly in some of the interviewees' responses. Bob at Croxham School, had been given a bursary for one academic year to develop an area of practice perceived to be weak at the school by the Headteacher, i.e. the gap in achievement between high and low achieving students:

"So I've sort of tracked the teachers performance, particularly on Key Stage 4, looked at their data, their results. Initially what has been discovered is that the bottom sets are struggling across the board and that's in every year group. So, the main focus, really for me, is going to be looking at developing teaching and learning and strategies that we can use, across the board with the whole department, to raise, obviously the progress of the low achievers in this school."

This very typical focus for research, illustrates the desired 'end-point' of the research. Where it is less clear, is in its articulation of the type of teaching and learning strategies that might allow such a gap in achievement to be bridged. Louise, the Head of Social Inclusion at Ashbury, reflected a similar concern, in response to a point about whether some of their strategies could fairly be defined as 'research':

"Yes it is a different kind of research, it's not starting off with a hypothesis, well some of it is, but you start with a problem and to set out how to solve it. That is research yes it is, because, but it is all about results and achievement and the whole-school attainment, and rounding off individuals and making sure that they are given every opportunity to excel and develop their skills."

Her above example drifts off into talking about the end-point, as in Bob's example (raising achievement for certain students), however, she goes on to articulate a strategy:

I mean the kind of thing that happens is for instance, both (Headteacher's name) and I had the same programme already about Leeds Cathedral being given a task to set up a Cathedral choir school. Now what they have found, which I think probably we could have told them, is that children who are convinced that they can actually sing well, or could be taught to sing well, develop a focus which they can then apply and carry through into Maths and English and History and Science. But had they not been singing, these particular children, given the catchment area, might not have done very well in school. So that success in one area... Now from the basis of that I can see that (Headteacher's name) brain is already working, "right what more can we do with clients and singing in this school in order to enhance what they have obviously shown to be effective?" Now I would argue that that is a kind of research..."

While Louise goes further in her description to include a proposal for a strategy to improve achievement of these students, there is still no articulation of a theory behind this process. As a result, the causal link between encouraging engagement in a choir and improving students' grades was not explored.

3. Exploring ways of doing things and trialling strategies

Lisa, the Assistant Headteacher at Ashbury School, explained whether she thought her strategy for changing students' report writing constituted 'research':

"Well that's a good question. I suppose the researchy (sic) bit was to look at various other ways of doing it. I didn't read anything academic about it. You know, I would question whether it was research or not but I suppose if you see research as perhaps meaning exploring, looking into."

Mike, a Science teacher at Carlton High School gave an example of a new system for rewarding good attendance:

"Now I suppose the type of research that we're doing at the minute in year 7 is we're trialling a new system which is where we're adding up the amount of ones every couple of weeks and awarding credits for those ones, and counting the fours. So instead of just having a list of numbers at the end of the year, saying, "Right, this child got this many ones," and not doing anything with it, we're trialling in year 7 actually trying to do something with that data. So sort of encourage them. And I think the idea is if it works well in year 7, then that will carry on through the rest of the school. And if it doesn't, it will be tapped on the head."

It is hard to see in this example, how trying out a new idea, in of itself, constitutes conducting research. Mike's elaboration, later in the interview suggests at least some engagement in cycles of reflection and evaluation as part of the research process:

"I mean I would class practicing something, seeing how it worked and getting someone else to try it as research. Whereas other people might not. I don't know if you would. But that's what I would think, you're trialling things, you're adjusting, you're feeding back, you're making a note of it and then you're passing it on in a different way."

While not obviously rigorous in its methodology, Mike's description comes closer to the ideas of 'reflective practice' or 'action research':

4. Evaluating impact of strategies (whether new or existing)

There were several references to the word 'impact' and finding out 'what works and what doesn't work' from within interviewees transcripts. Julie, The Head of Food Technology at Carlton High gave an example of this:

"We had a look at the impact of the - The design and technology curriculum is very vague in the level section of how children should progress, it's not that vague. But it's vague enough that we teach three different disciplines across our department and it's not very specific. So we worked on making the levels more specific for each discipline and deciding what children needed to do to move up and put that in the marking policy. So when you marked a piece of work, the levels were on the bottom and you ticked what the child had done well and you ticked on how to improve….. Because research to me is where you put some things in place and you come back and comment on them and decide what worked well and what didn't work well. But sometimes it can be a lot more in-depth than that."

The immediacy and importance of demonstrating 'impact' was apparent throughout the interviews. This seems quite understandable for research conducted by practitioners rather than academics. However, the impression is given that the evaluative process was often superficial, little more than a brief reflection ("*and you come back and comment on them and decide what worked well and what didn't work well*"). This raises the issue of the usefulness of such shallow conclusions being drawn about the impact of new strategies and to whether this type of example could be 'elevated' as a piece of 'research'.

Appendix 12: Aspects of 'systematic and sustained enquiry made public' in respondents' accounts of research

Given Stenhouse's rather broad definition, it is worth considering in practice what might be meant by this when assessing practitioners' examples of school-based research. The example below, splits his definition into two parts:

"<u>Systematic and Sustained</u>

- Process of enquiry is conscious

- Enquiry addresses clear questions

- It has a sense of purpose and timescale

- Documentary records are maintained

- The enquiry is linked to relevant research literature

- Attention is given to authenticity and trustworthiness

<u>Made Public</u>

- The enquiry is discussed with colleagues

- It is the subject of contributions to conferences and networks

- Documentary records are accessible

- Reports are made available

 (Wilkins, 2011b, p. 10)

Taking Wilkin's above expansion, there are some examples from the interviews that illustrate elements of being ***systematic, and sustained***. For instance, one interviewee described a conscious enquiry with clear questions (or aims) in mind:

"*It* (the research project) *was based about literacy, it was about how the head gave me a role on a TLR payment to develop literacy in the school, at the same time as another lady got the maths, numeracy equivalent. I was asked to take on that role and evolve it, and take it off the English department, and so on, and so forth. Essentially we had groups of kids we knew we had to teach, and it was going to cut class size in French, but we didn't know how to do it. My TLR, was… TLA was focused on, how did I get from A to B? How did I manage to organise resources, lesson materials, the classroom, the environment, the colleagues, to enable kids to be taught basic English by a whole range of teachers who weren't necessarily English teachers.*"
(Lee, Teacher at Trinity Green School)

Lee's approach to the problem, also revealed his desire to obtain trustworthy and authentic data to inform his enquiry:

"Because when everyone sat there scratching their heads and said, "What do we do?" I said, "Well I think I might be able to help because I have taught English before." And people were relieved, and I said, "The first thing we are going to do, is I am going to go and seek out the advice of the library." and I am going to say to them, "Right, okay, here is our problem, can you help me, what advice would you give? What information have you had from the pupils for example about what books are popular?" I had to find, well research to an extent, I had to basically find out what the English department was teaching, so that any books we selected weren't going to be used. I had to make sure that the books were age appropriate, topic appropriate, and that they were going to be popular with the pupils, then that could be proved, they had been taken out a lot. But also that the English department weren't taking out, that is one example."

Lee shows his concern for asking the right people (librarians, the students, the English department) and for selecting the most appropriate strategy (the right book particularly), informed by this process of investigation. While the purpose and timescale will have been dictated by the practicalities of resolving this particular issue, there is not mention of documentary records or reference to relevant research literature. The depth to which previous literature was referred to could be considered a weakness in relation to conventional standards for 'academic' research, however, as Lee's example shows, various sources of information, especially people, were used in a way that could be quite fairly described as 'systematic'. The problem itself, emerged from a practical issue that needed to be resolved, rather than a 'gap' in the literature, reflecting the different cultures of work between academics and practitioners.

Besides those aspects mentioned in Wilkins' list, interviewees frequently approached their 'research' systematically through the use of data collection instruments, techniques or principles familiar to traditional, academic research. These included using surveys, interviews and focus groups, benchmarking and auditing current provision; comparing groups; interrogating data, evaluating impact of different strategies; using control groups, applying theory and hypothesis testing.

In terms of ***making research public***, this was referred to in several ways:

- Delivering workshops and seminars to other staff at the school
- Presenting findings at a formal research/professional development event at the school
- Writing a short report (this was the exception rather than the rule)
- Sharing findings in departmental meetings
- Informal sharing through discussion with colleagues

While no exhaustive investigation was made of this aspect, the impression given from interviewees was that research was not shared in a manner that allowed for intensive scrutiny of the methodologies or underlying assumptions or theories of their enquiries. This is typically illustrated by a science teacher at Trinity Green School who explains how he shared two of his research projects with staff:

"The VLE one, the end goal was that we were all more proficient in using the VLE. So in that respect there wasn't a kind of – I mean we've shared that word of mouth but there hasn't been any formal sharing. I've shown people how to do it. With the rewards one we kind of came up with a few mock templates of what they might look like and that's quite recent and they've now gone away for other consultations sort of looking at whether they work or not. We don't often write anything – well, I'm not involved in, "This is what we found out," it's much more sort of, "These are the kind of ideas we've found out, these are the themes we've had, let's go and see what happens."". (Carl, Science teacher, Trinity Green School)

In this example, Carl's focus was on sharing the 'learning' he had gained from the research he had conducted. He presents 'ideas' and 'themes' that emerged from his enquiries and leaves it to colleagues to test these out in their own practice. The extent to which this process of sharing was 'rigorous' is unclear but that sharing in itself was an important aspect of research was reflected in some interviewees' responses:

"No, that's good. I think it adds a uniqueness and also the awareness that you're going to share it more, I think. I think possibly research in isolation wouldn't be of any value but I think the possibility that you've been given that task whereas, as you say, evaluating it seems to be something that's less likely to be published, less likely to be shared, but research should." (Patrick, Head of ICT, Trinity Green School).

Patrick's brings up the distinction between 'research' and other forms of activity, such as 'evaluation', in which public sharing is seen as one area of distinction.

To sum up, it is highly likely that examples alongside each of Wilkin's list of items could be encountered in relation to research activity by practitioners at these case study schools. A more prescriptive line of enquiry in the interviews might have ascertained whether any of the interviewees' examples contained enough within them to justify each element of 'systematic (and sustained) enquiry, made public'. However, even with a more thoroughly criterion-based assessment of what might define 'research', it is likely to leave open challenges by some writers as to whether such and such a list is exhaustive or whether the correct choice of criteria was being used to distinguish research from other types of activity, such as 'development', 'evaluation' or 'enquiry'. It is also difficult to say whether we are judging 'proper' research, as opposed to making an assessment of what is 'high quality' research. Partly, this may stem from the fact that 'research' is interpreted and judged through the lenses of different knowledge domains and subject disciplines. This was reflected in interviewees' own descriptions of research.

Appendix 13: Subject disciplines of teachers; the influence on view of research:

One feature of participants' descriptions of the research process was the influence of their own subject disciplinary background, each suggesting different interpretations of the meaning and standards applied to 'research'. For instance, science teachers often mentioned particularly data collection methods or the use of statistical analysis of quantitative data.

"I think it (the Action Learning Set) was very open that people could make it proper research or they could make it a bit more subjective. But for me it was. I did a psychology degree so I approached it the way I did with my research at Uni. So I did a rationale for it and then I did an, "Okay, how am I going to measure this?" And we did have to have some sort of measurement way. And I did statistical analysis of different things. So it's open to just you observing the kids and seeing how they respond to things or you looking purely at progress in terms of their assessment levels and things. It depends on what you're assessing. For me it was their enthusiasm of science and how that improved. So I had a questionnaire and I gave them an enthusiasm score before and an enthusiasm score afterwards." (Katherine, Science Teacher, Barnfield Community School)

Katherine favours statistical measures and quantitative research methods, which she traces back to her Psychology training at university. Her explanation for what is 'proper research' contains elements typical with more positivist (or post-positivist) research, such as: the search for objectivity, reducing variables to ways that can be measured and the tendency towards quantitative data and use of probabilistic interpretations of 'significance'. One online Psychology Dictionary (http://psychologydictionary.org/research/) defines research as:

"Scientific or scholarly inquiry by which efforts are made to discover and confirm facts, or to allow investigation of a particular topic."

The emphasis in this definition on the discovery or confirmation of 'facts' underscores this positivist leaning towards researchers uncovering (through the control and careful definition of variables) an objective reality in the environment. This suggests that Katherine may not see other, qualitative or social constructivist methods of research as having equal validity.

Some participants were able to articulate this distinction for themselves and recognise the strengths and shortcomings of their own prior education in conducting research:

"I mean I don't know, it's interesting because I mean obviously as a scientist, for me research is all about – from a science point of view it's about either extending someone else's work or you're looking at something brand new. And obviously when I did the MA it was quite a big step to go from – because all my experience has been lab research, scientific research, now I'm going into that kind of social sciences research which is quite different. Because I mean obviously I was thinking about control groups, big sample sizes, and it was like no, it's perfectly valid just to do a little case study on your class." (Carl, science teacher, Trinity Green School)

Here, Carl made an assumption that educational research is often more thoroughly grounded in a social science tradition than in the natural sciences. This required an adjustment on his part, in terms of how to view the quality and interpretation of his own school-based research.

The 'scientific' (natural or social) view of science can be contrasted with this one by Rhys, an English Teacher at Ashbury School:

"An artist researches other artists. That influences what they do. That's research." Later he adds

"I was reading in the papers the other day about a writer and how they'd researched their latest novel. And they were saying 200 books they'd read to research their latest novel."

One interesting element in this definition of research is that there is no longer a clear distinction between engaging *in* and engaging *with* research. This observation has been made elsewhere in the literature:

"The distinction between engaging in and with research can be overstated. Teachers undertaking research are often more disposed to engage with external evidence to support their enquiry than those who are not. The two processes are not mutually exclusive, and in the best examples, they complement each other." (Nelson and O' Beirne, 2014)

Where Nelson and O' Beirne highlight the way that engagement in research is complementary to the act of engaging with research – an incentive to conduct a literature review for example; here, the act of reading up about others' work, i.e. accessing published research, was in itself, an act of research. In this model, the learning derived from 'reading up' on a topic is then interpreted and transformed into a change in the practitioner's own practice.

UNESCO defines R&D as:

"Creative work undertaken on a systematic basis in order to increase the stock of knowledge, including knowledge of man, culture and society, and the use of this stock of knowledge to devise new applications. The term R&D covers three activities: basic research, applied research and experimental development."(UNESCO, 2002)

This definition sets the focus on knowledge discovery (or production or creation etc) as being the prime determinant of whether an activity can be considered to be 'research'. This also reflects the broad range of what participants in the case study schools 'counted' as research. These included non-empirical enquiries, such as looking at others' practice (and trying to emulate it), reading a body of work by an author and understanding an educational or pedagogical philosophy or principle. Such notions are much broader than fundamental versions of 'evidence-based practice', which tend to suggest a hierarchy of research methodologies for discovering 'what works' (for a discussion of this, see Nutley, Powell and Davies, 2013). Such hierarchies generally place randomised controlled trials at the top of the evidence-tree and the kind of research discussed by participants in these interviews, such as 'action research', case studies,

surveys and observational research at the bottom (or excluded from) the hierarchy. This may reflect a difference in terms of what questions the practitioners are trying to ask, i.e. the question is not 'what works?' in general, but 'what works, for whom, why and how, in our context?' Furthermore, the question 'does it work at all?' was not generally of interest to practitioners, rather there was an assumption that there must be some validity to what others (academics or other practitioners) were apparently doing or writing about. Thus the question, 'how do we make this intervention work most effectively?' was often of most importance.

Fuzzy research

The difficulty of defining an activity as research, as opposed to 'enquiry', 'evaluation', 'development', 'reflective practice' or even 'CPD' emerged in interviewees' responses.

Sandra, a teacher at Croxham School commented:

"But I think teaching practice does anyway (encourage reflective practice); you diagnose a problem, you have an idea, you try it out, you reflect on it, you modify it, you start again. I mean that is teaching, so it kind of naturally fitted, because practicality was another reason because I knew I wouldn't have time in my teaching life to sit down and research academically"

Sandra recognises that her research methodology was dictated partly by the demands and time limitations of her work. Her own description of research cum reflective practice, contrasts her pragmatic approach with academic research. She also mentions earlier in the interview that her approach to 'research' had been endorsed by her line manager, who, in her words, said:

"Absolutely fine because that's really practical and immediately applicable"

Sandra's description of research with immediate application reflects what other researchers call the conflict of 'cultures' between the academy and school practice.

The range of awareness of the subtleties surrounding the use of the term 'research' most likely reflected the variation that would be found among any population of interviewees. Indeed, some interviewees are likely not to have yet formulated an opinion or attitude on the matter. There also appeared to be no clearly dominant view about what features constituted research (or 'good research'). This may partly reflect the multi-disciplinary nature of educational research which includes knowledge from the fields of history, biology, psychology, sociology, philosophy and across the humanities.

What also came across, quite clearly was the mixture of knowledge gained from observation of and discussion of practice, and declarative knowledge such as that read about in formal reports of research. So, where research was engaged in, this was almost always combined with other types of knowledge, including tacit knowledge by practitioners about their students. However, the 'feeling' that what someone did was (proper/real) 'research' was articulated in other ways. For example:

"When we filled in the questionnaire that you gave us I seem to recall saying that I haven't done any research in school. Because I felt that the research I had done was not supported, in terms of timetabling hours.." (Rhys, Ashbury School)

This lack of acknowledgement, support or encouragement, meant that Rhys was inclined not to count his own 'research' as 'school-based research'. It also contains an element of the need for an external party to validate an approach as research:

"it was £20,000 (the funding award) so it was quite a generous amount. But I suppose that's the nearest I've got to working on anything that had the title research." (Lisa, Deputy Head, Ashbury School).

Lisa gave this example of a very rushed project which the school did not have ample time to work through satisfactorily. Nevertheless, the award of funding by an external body, gave this important validation as a significant research project.

In some cases, activities that could have been otherwise labelled (e.g. 'enquiries) were included as examples of research. In the more research-engaged schools, as defined by the survey, this often seemed to be the case. Thus, the possibility exists that a 'discourse' of research was more prevalent in these schools, over and above any material difference in the nature of professional development and other organisational development activities that took place.

Lee, a teacher at Trinity Green gave one example of the advantage that such a discourse might afford a school with a strong culture of research engagement:

"Because when everyone sat there scratching their heads and said, "What do we do?" I said, "Well I think I might be able to help because I have taught English before." And people were relieved, and I said, "The first thing we are going to do, is I am going to go and seek out the advice of the library." and I am going to say to them, "Right, okay, here is our problem, can you help me, what advice would you give? What information have you had from the pupils for example about what books are popular?" I had to find, well research to an extent, I had to basically find out what the English department was teaching, so that any books we selected weren't going to be used. I had to make sure that the books were age appropriate, topic appropriate, and that they were going to be popular with the pupils, then that could be proved, they had been taken out a lot. But also that the English department weren't taking out, that is one example…..Because it gave me the ideas, it was research, because it gave me the confidence that what I was doing was correct. That I was going to be using the right resources for the pupils. If I…"

Lee's description of the task set for him to complete (his research) contains a number of elements that are interesting. First, Lee who had only recently been placed in charge of literacy at the school, came from the position of relatively junior standing. By characterising his task as 'research', he focused the group on the underlying features of the task ahead and opened up ideas from anyone, including himself, who might have the necessary ideas or expertise to contribute to the enquiry. The hierarchical level in the organisation of such a person was irrelevant as a criteria in this case. The research label gave him the confidence to approach a range of staff to gather information towards the aim of improving literacy for the children. Lee describes how this 'mandate' for action gave him the

confidence to pursue a number of approaches to discover the most effective solution.

Appendix 14: Patterns and stages of research engagement at the eight surveyed secondary schools

5.1 Section by section comparison:

The intention of this section is two-fold: Firstly, to point out some of the responses to each aspect of the survey and thus to given a broad 'measurement' of the extent to which the surveyed schools had a developed culture of research engagement relative to each other. Secondly, overall responses reveal something of the nature and extent of research engagement of secondary school teachers working at these schools. Where relevant, references are made to other research, statistics or surveys to assess how typical such a set of responses might be. Most frequent references are made to the 2010 NTRP survey (described above) and another 2010 teacher survey carried out by the NFER on behalf of the now defunct GTCE (Poet, Rudd and Kelly, 2010). The latter involved over 4000 respondents across all educational phases from Early Years to post 16 and had a high proportion of 'ordinary' teachers compared to the seniority of the NTRP sample. Although most of the evidence was adduced from the survey responses, a first sweep of the interview data from the five schools that took part in this phase, is included in order to illuminate and clarify some aspects of the responses.

The survey had five sections (in addition to the 'overall' one, in section f, see above):

a) **Values, leadership and culture** (Engagement IN and WITH research (ind,depart,wider school)(school leader encouragement)(questions about if the school encouraged challenge and learning/collaborative professional learning)
b) **Support systems for engaging in and with research** (Making available Time/access to resources/mentoring support/research expertise)
c) **Research activity** (Carrying out research/taking part/accreditation/a system for research/basing decisions on research/links with universities)
d) **Impact** (Sharing the results within/beyond school and contributing to wider networks/publications/conferences)
e) **Sustainability** (designated staff/funding/training for research)

The first five were derived from the NFER research-engaged school award application process and other measures of research engagement and converted into questionnaire items with Likert scale responses or yes/no/don't know for some sections. There were also several sections for teachers to include examples to illustrate closed responses and comments. These qualitative responses helped to build up a more detailed picture of the research activity and culture of the school. Coding of interview responses adds a further level of detail around these categories for five of the schools in the survey.

Questionnaire statements 8-15 focused specifically on the extent to which engagement IN and WITH research was encouraged at individual, departmental and whole-school levels and the extent to which it was encouraged by senior leadership (see Figure below). The last two statements were about whether the school 'encouraged challenge and learning' and the extent to which it had a 'collaborative ethos of professional learning'. Comparisons between groups were facilitated by converting 'strongly agree, agree, disagree and strongly disagree into mean scores where responses were assigned values of 2, 1, -1 and -2 respectively 'don't know' (or missing) responses excluded from analysis.
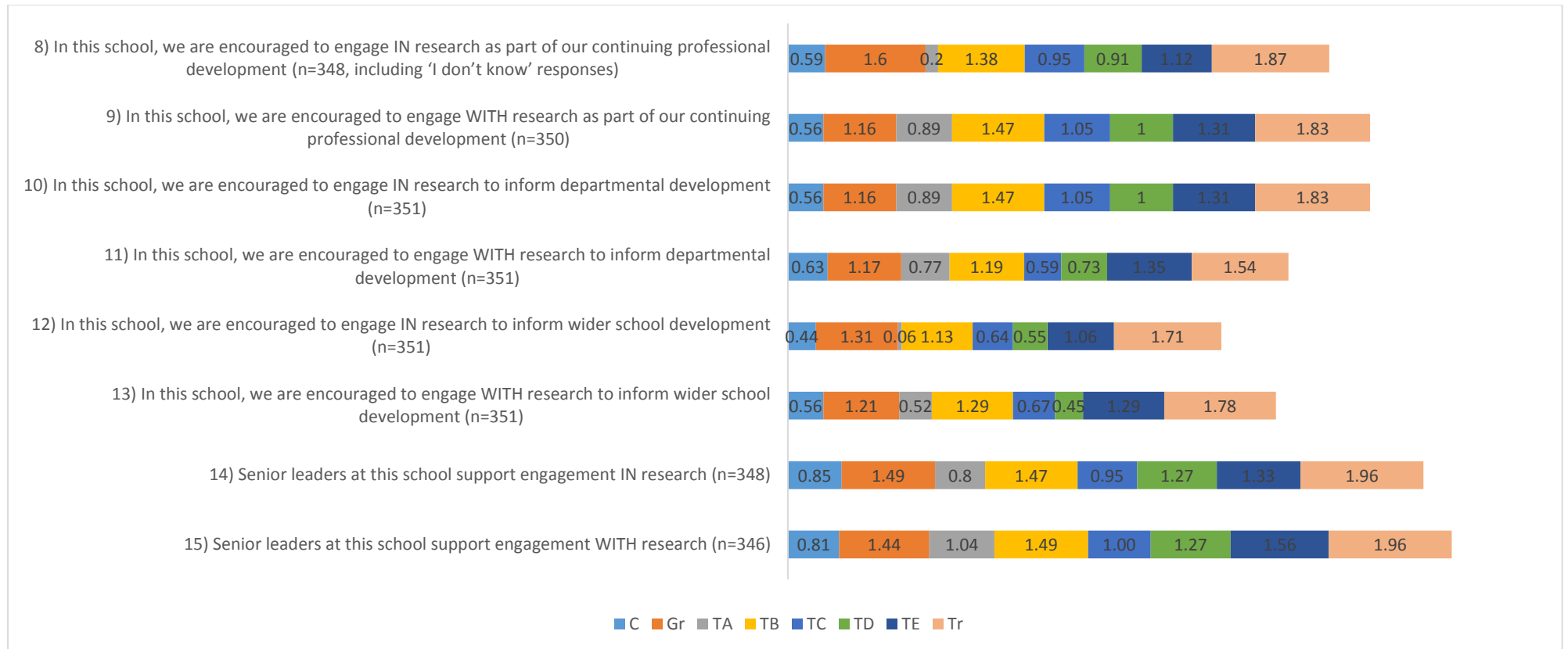
5.2.1 Regarding encouragement to engage in and with research:

Overall, the perception was that schools encouraged engagement with (published) research slightly more than carrying out research. This difference was particularly noticeable for research engagement directed towards whole-school development. In other words, carrying out research to inform whole-school development, appeared less common than reading and using published research. Equally, teachers were more likely to carry out research for their own CPD than for either departmental or whole-school purposes.

Respondents from schools Gr, TB, TE and Tr showed the strongest level of agreement with statements regarding encouragement to engage in and with research.

The perception that respondents' schools encouraged them to carry out research as part of their CPD was strong across most schools, although Ashbury and Croxham had noticeably the weakest level of agreement (TA and C). Similarly, engaging with research for CPD was weaker at these two schools.

Figure   :   Mean agreement for statements about encouragement to engage in and with research:

8) In this school, we are encouraged to engage IN research as part of our continuing professional development (n=348, including 'I don't know' responses): C 0.59, Gr 1.6, TA 0.2, TB 1.38, TC 0.95, TD 0.91, TE 1.12, Tr 1.87

9) In this school, we are encouraged to engage WITH research as part of our continuing professional development (n=350): C 0.56, Gr 1.16, TA 0.89, TB 1.47, TC 1.05, TD 1, TE 1.31, Tr 1.83

10) In this school, we are encouraged to engage IN research to inform departmental development (n=351): C 0.56, Gr 1.16, TA 0.89, TB 1.47, TC 1.05, TD 1, TE 1.31, Tr 1.83

11) In this school, we are encouraged to engage WITH research to inform departmental development (n=351): C 0.63, Gr 1.17, TA 0.77, TB 1.19, TC 0.59, TD 0.73, TE 1.35, Tr 1.54

12) In this school, we are encouraged to engage IN research to inform wider school development (n=351): C 0.44, Gr 1.31, TA 0.06, TB 1.13, TC 0.64, TD 0.55, TE 1.06, Tr 1.71

13) In this school, we are encouraged to engage WITH research to inform wider school development (n=351): C 0.56, Gr 1.21, TA 0.52, TB 1.29, TC 0.67, TD 0.45, TE 1.29, Tr 1.78

14) Senior leaders at this school support engagement IN research (n=348): C 0.85, Gr 1.49, TA 0.8, TB 1.47, TC 0.95, TD 1.27, TE 1.33, Tr 1.96

15) Senior leaders at this school support engagement WITH research (n=346): C 0.81, Gr 1.44, TA 1.04, TB 1.49, TC 1.00, TD 1.27, TE 1.56, Tr 1.96

Legend: C, Gr, TA, TB, TC, TD, TE, Tr

(+2 = Strongly Agree, +1= Agree, -1= Disagree, -2= Strongly Disagree)

Analysis of interview data showed a variety of motives for carrying out research as part of CPD. These included: carrying out research as part of an accredited teacher training course; the desire to gain expertise in an area; to enhance prospects of promotion; the feeling that research was part of the professional role (especially if in a senior post) and conducting research in order to prepare oneself for the demands of a new post. In one interview with a teacher at Croxham (C) School, a research bursary was used as a compensatory reward after an unsuccessful interview for a senior post at the school.

In a few schools however, such as Barnfield (TB), Greenmead (Gr) and Trinity Green (Tr), CPD was structured in a way that encouraged 'enquiry' as a dominant mode of professional learning. At Barnfield, sessions of 'ALSs' encouraged newer teachers to conduct small-scale enquiries into self-chosen aspects of their own teaching practice; at Greenmead, annual action research projects were awarded to several members of staff who were given significant time remission to conduct and then write up their findings and at Trinity Green a variety of mechanisms promoted CPD through research, in particular the TLA structure of small-scale enquiry projects.

Examples of research engagement for departmental and whole-school purposes were less frequent in the survey and among those interviewed. Whether research was used at departmental level depended on factors such as: the interest of other members of the department in the particulars of the research and its relevance to wider school plans or departmental targets; the general interest in the department for research; relationships between staff in the department and the personality and enthusiasm of the teacher who had carried out the research. Research aimed at influencing whole-school development was seen as much less likely at some schools, particularly Ashbury (TA). One influencing factor here, was whether the individual, or group of researchers felt they had the credibility or 'mandate' from senior leadership (if not part of SLT themselves) to influence wider school matters. This aspect will be explored more fully later, however, clearly there is a difference between *proactive encouragement by senior leaders* to use research to influence school development and *passive support of such activity, initiated by the teacher*. Rhys, from Ashbury School explained that if senior leaders could see the purpose of research and how this could improve the school, the reaction would very likely be:

"receptive, definitely, and positive, I think. There's enthusiasm for learning amongst the senior management I believe, yes."

At Ashbury School, research as a strategy for school improvement, did not appear to occupy a position of importance above any number of other approaches in the eyes of the senior leadership. By contract, at other schools, such as Trinity Green (Tr) research was seen as the dominant strategy for school development.

5.2.2 The overall culture of professional learning:

Regarding whether the school 'encouraged challenge and learning' and the extent to which it had a 'collaborative ethos of professional learning' (statements

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16 and 17), agreement was strong across the surveyed teachers, with an average level of agreement of 1.58 and 1.47 respectively. School C (Croxham) had the lowest agreement on both statements, in particular agreement was low for having a collaborative ethos of professional learning (0.8), albeit 'agree' was still the mode response.

Figure : Mean agreement to statements 16 and 17 on the survey on the professional learning culture of the school
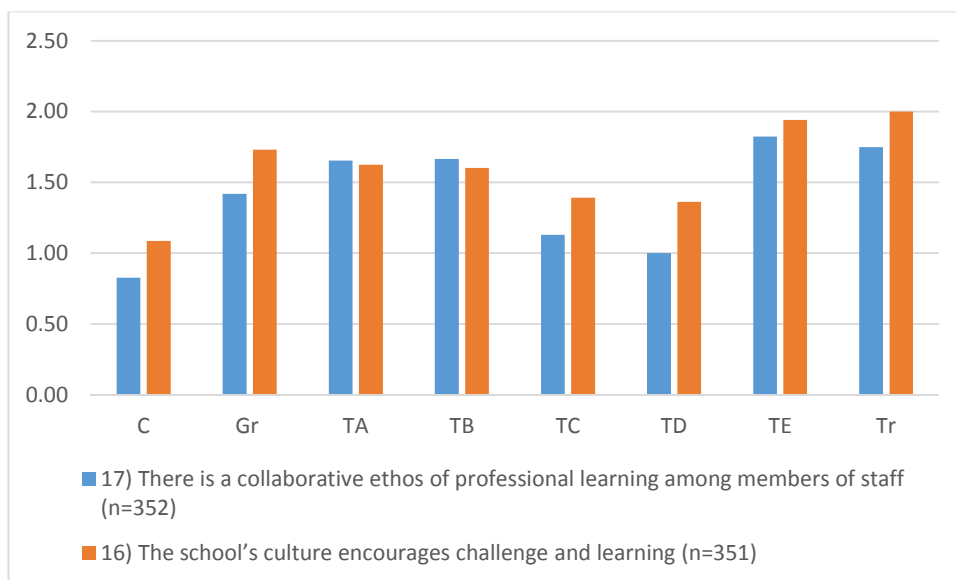
(+2 = Strongly Agree, +1= Agree, -1= Disagree, -2= Strongly Disagree)

The overall 'culture' of research, was sometimes cited as being exemplified in the words or actions of school leaders. For example, at Trinity Green,

"I think there is a lot of thinking by for example Sasha, and (other member of SLT) and they research an area, and then take it to us and say, "How can we tweak it to fit our school?" So that for me is where the research comes in." (Daniel, teacher at Trinity Green)

At departmental level, research engagement by teachers was routinely shared in Thursday meetings:

"I think where we have such good departmental meetings, your department always hears about any training you've done. Another girl in our department she did a Masters. And it was just interesting hearing the things she had come out with. She was, like, "Oh, I read about this at the weekend. There you go. There's a copy.""(Marta, teacher at Trinity Green)

Support from school leaders to establish and encourage a research/learning culture within the school was seen as very important in this survey, backed up by such comments in interviews. Such findings reflect previous conclusions from research (e.g. Coleman, 2007; NTRP, 2011; Sharp *et al.*, 2006a). Furthermore, the importance of this issue is highlighted in other research pointing to a lack of

schools that sufficiently encourage a culture of research use in every day teaching practice (Poet, Rudd and Kelly, 2010, p. 16)

5.2.3 Overall conclusions about values, leadership and culture:

Figure: Overall mean response across the 10 questions on values, leadership and culture:
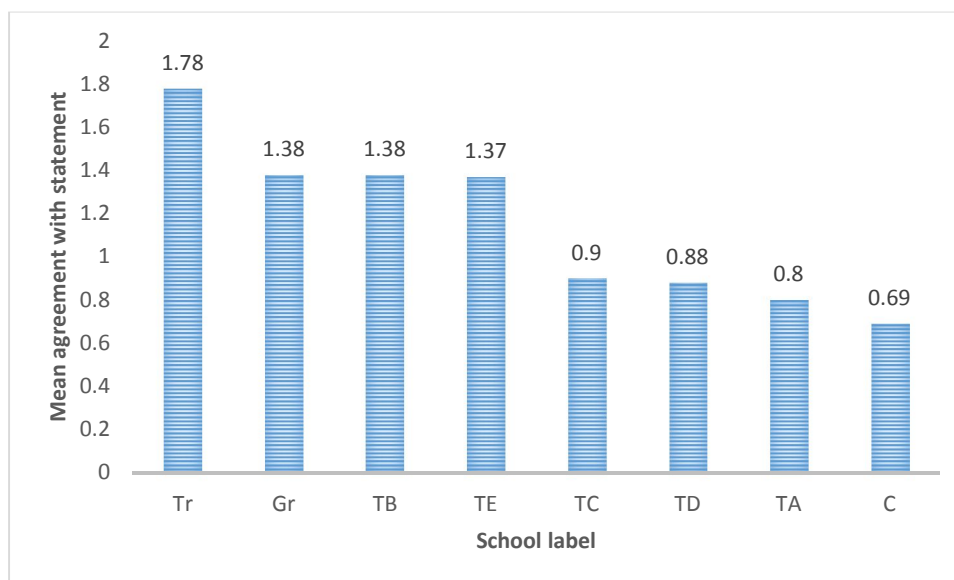
Four schools (Tr, Gr, TB and TE) emerged with high levels of agreement to statements in this section. Respondents from School Tr (Trinity Green) agreed most strongly that the school encouraged teachers to engage in and with research. While agreement was lower in the other four schools for this section overall, teachers at three of these (TC, TD, TA) did, nevertheless agree relatively strongly that the school's culture encouraged question and challenge and that there was a collaborative ethos of professional learning. School C (Croxham) is notable in that teachers agreed more weakly to these latter statements as well. This suggests not only a school environment in which research was not strongly encouraged but also that the culture of professional learning may not yet be conducive to research activity.

5.2 Support systems for engaging in and with research (Making available Time/access to resources/mentoring support/research expertise)

Figure: Time is made available to engage IN research (n=350)
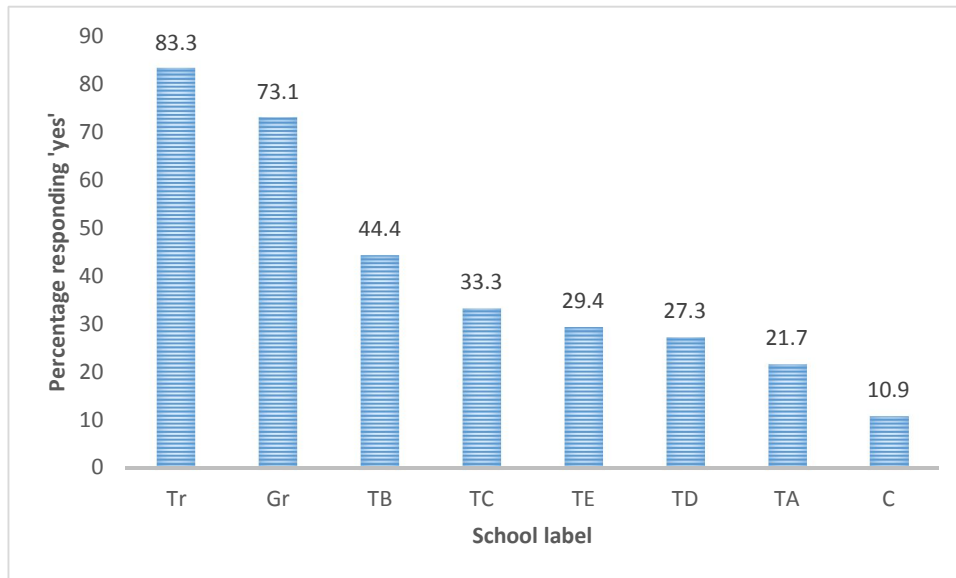
In the NTRP (2011) survey, time was seen as the biggest barrier to engagement in research, with 32.1% of their sample citing this is an issue. Lack of funding (24.6%) was the second biggest, followed by lack of knowledge of where to find funding (13.7%). In another teacher survey conducted in England, 58% cited lack of time as a barrier to conducting their own research and 42% as a barrier to using published research (Poet, Rudd and Kelly, 2010, p. 16) of The extent to which participants agreed that time was made available in the surveyed schools varied considerably. In Greenmead school (Gr) teachers had been given considerable time off timetable in order to pursue year-long action research projects. This practice had continued for several years but was now being revised due to funding constraints. At Trinity Green (Tr), it is likely that the numerous types of meetings and R&D groups based on enquiry, meant that the perception was that time was being used to focus on research, rather than 'freeing up' teachers' time per se. A similar picture, albeit a weaker one, emerged from Barnfield Community School, where small-scale 'ALSs' were part of many teachers' professional development commitments. The extent to which the latter were seen as 'research' may have varied though, as one teacher in a later interview commented:

"it would be a very privileged teacher who had hours to spend researching. Which is why we have these action learning sets, because they are very quick and snappy, and sharing what other people are doing." (Faith)

Figure: We have access to research-based resources (n=352)
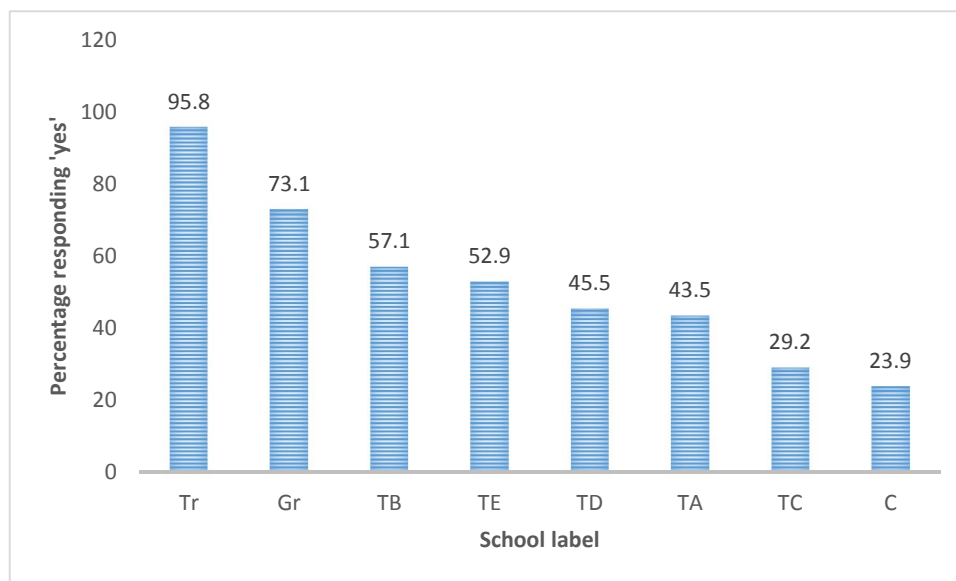
Nearly all respondents at Trinity Green School and the large majority of those and Greenmead, agreed that they had access to research-based resources. At Trinity Green, where further interviews were conducted, it became clear that there was an extensive staff library and a member of staff responsible for advising teachers on articles and books to use when conducting or accessing research at the school. Furthermore, the school kept regular links with educational consultants who were able to advise teachers on research design and literature when required. At Barnfield Community School (TB), the research coordinator made it a regular part of her job to disseminate user-friendly research resources, including video clips and research summaries to staff, to use in ALSs or in their staff development or Master's work:

"Well a lot of the time Tanya, because Tanya is in charge of teaching and learning. So she is obviously, receives all this information from these external agencies. And then she thinks some things are [unclear], so if she thinks something is useful, if she ever mentions- for example I am really interested in pastoral aspects of teaching, she will sent me an article or link to an article about this particular aspect that she might have come across, or someone else sent to her. And then I will end up going and looking into it, and reading about it etc." (Lauren)

Given the lack of time and knowledge about where to find research papers or teacher friendly summaries (NTRP, 2011), this hands-on approach by someone in the senior leadership, was apparently highly valued. The extent to which Tanya was alone in doing so among the SLT, may explain why agreement to this statement was not even higher.

Figures and below, refer more specifically to access to mentoring and research expertise, respectively. In many of the schools surveyed, their role in School-based teacher training routes mean that mentoring and coaching were often well-developed. Where research activity was widely promoted, then researchers were able to benefit from such a structure. In the case of Trinity Green, many of the

staff were trained to be 'TLA' assessors, which included mentoring and advising on research projects. This was in addition to external help for MA dissertations and the bespoke support by educational consultants, as mentioned above. Some respondents to the survey at Greenmead School also mentioned the use of external consultants and very useful links with a local, prestigious university, with whom they had a research-based partnership. A review of the literature on engagement in and with research by teachers in England spells out the importance of such external support, including from Higher Education professionals and states that:

"schools/clusters would benefit from exploring sustainable partnerships with organisations who can offer access to a network of external specialists. This role might include supporting teachers in engaging in research with practical research tools and technical back up, providing access to relevant research, and supporting schools in interpreting the implications of relevant research for the context" (Bell et al., 2010, p. 54)

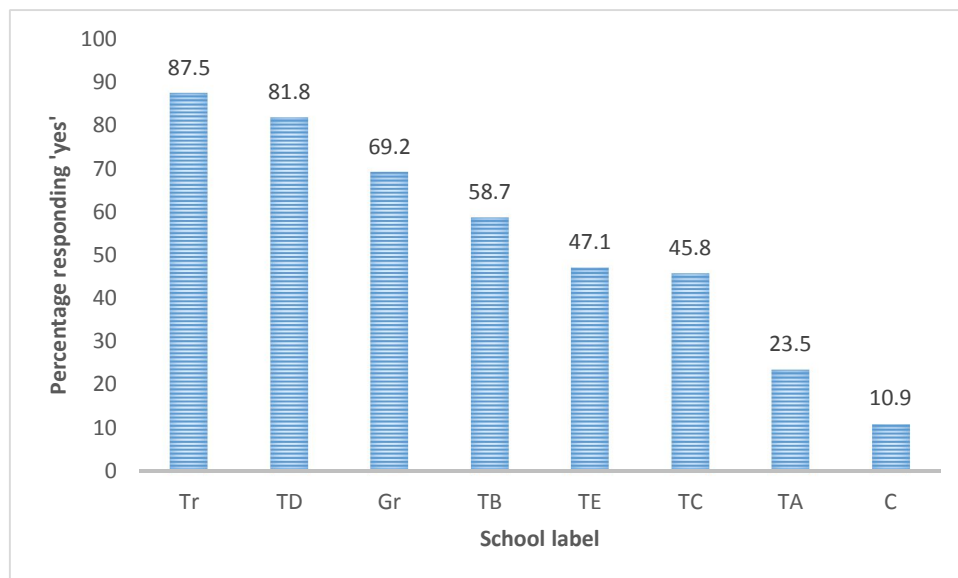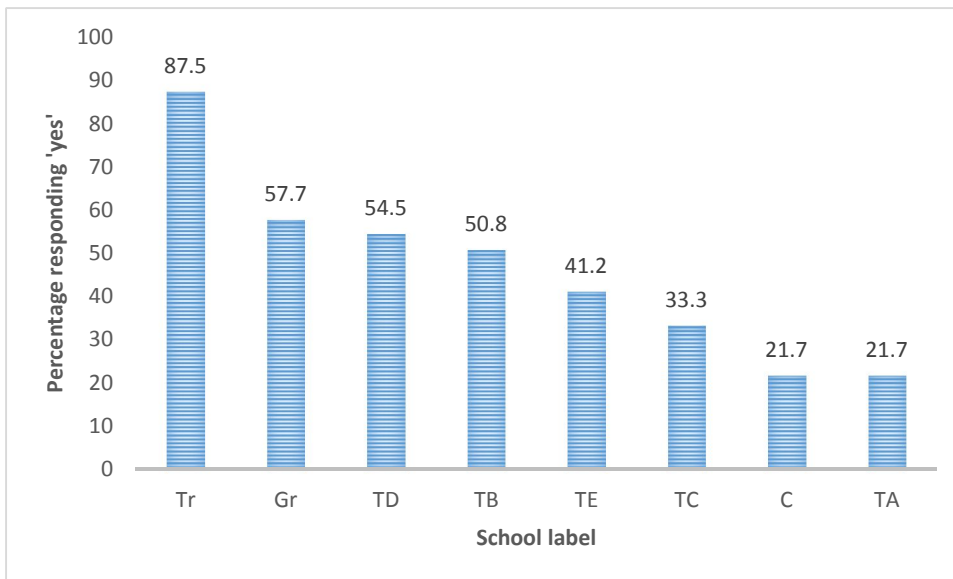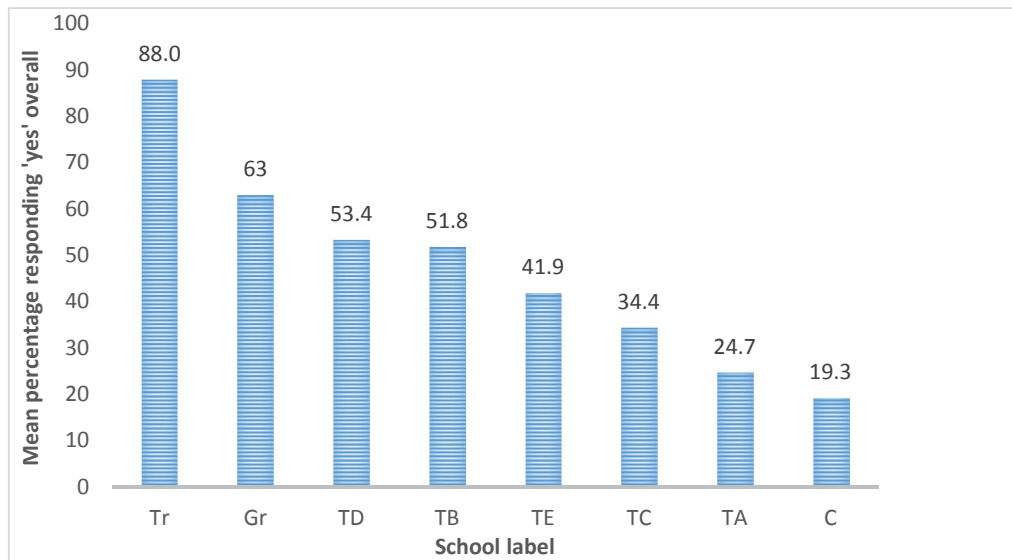**Figure: Mentoring support is available for engaging IN research (n=350)**

Figure: We have access to sources of research expertise to advise the planning, conduct, analysis and interpretation of research (n=348)

5.2.1 Overall comparison by school for this section (mean percentage 'yes' responses):


A clear picture emerged from the survey on this section, with Trinity Green School (Tr) rating very highly for the time, access, support and expertise available to guide research activity. Greenmead respondents were also very positive about this section, mostly agreeing that there was a system to encourage research activity at the school. Just over half of all respondents at TB and TD (albeit few respondents at this school) agreed with statements in this section.

This section was the most wide-reaching on the survey, covering: systems for encouraging research; involvement in research; accreditation of research and links with universities and research based-decision-making. In retrospect, some of these may have been better placed elsewhere in the survey, for example 'systems for encouraging research' fits well in the section, 'support systems for engaging in and with research'; while 'decisions made on the basis of research' may be seen to be more an aspect of 'impact', the latter section being more about sharing research. They are presented here in this section to avoid confusion about the survey categories as completed by respondents. Brief reference is also made in this section to interview responses about accessing and using published research, since this was not part of the survey but can be seen as part of research activity (engaging with research).

**Figure: There is a system for encouraging staff engagement in research/enquiry (n=347)**
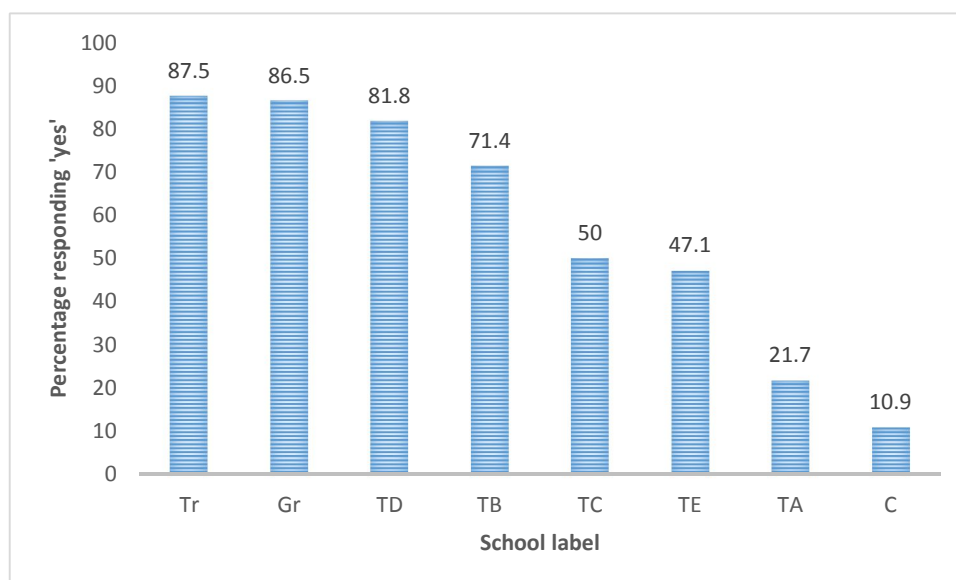
Numerous examples on open sections of the survey were given of how research was supported. These included research undertaken as part of MA programmes, supported sometimes by university staff, teacher training routes (GTP, TeachFirst and PGCE) and leadership courses (middle and senior leadership). Schools with more developed systems, and higher reported research activity, also had their own structures to support research, irrespective of accreditation aims. Sometimes the two could come together, so for example a teacher getting NQT status was offered the chance to do an enquiry module which would enable her to gain 30 credits towards an MA. In other cases, teachers who were undertaking Masters' courses or dissertation projects, would be given a key role in leading or contributing to related enquiry at the school. For instance, at Barnfield Community School, such teachers could be asked to lead the ALSs. At Trinity Green, teachers could gain credits at increasingly advanced levels on the TLA's. At Greenmead, a handful of teachers were supported to carry out action research

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projects each year and also at least three teachers were encouraged and supported financially to pursue higher degrees. Responses at the higher end of the scale, i.e. Trinity Green (Tr), Greenmead (Gr), Durston (TD) and Barnfield (TB) can be compared with another teacher survey conducted in England that found:

"less than one in four respondents (23 per cent) agreed or strongly agreed with the
*statement that 'My school encourages me to undertake my own enquiry'"* (Poet, Rudd and Kelly, 2010)

Respondents from Ashbury (TA) therefore appeared largely typical inthis respect, while Croxham respondents were even less likely to agree (albeit 'yes'/'no'/'don't know) than in this NFER survey.

**I have carried out my own school-based research/enquiry while working at this school (n=351)**
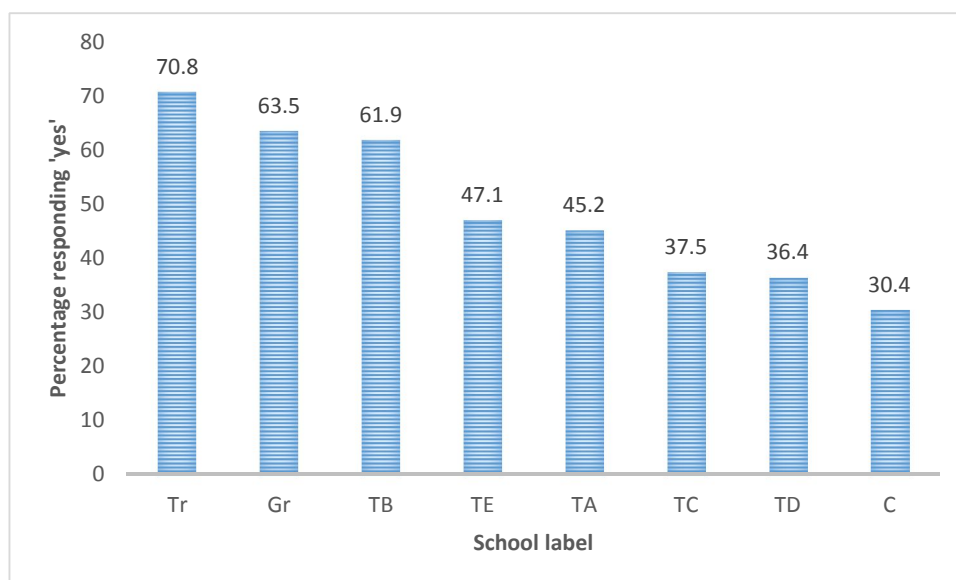
Approximately half of the respondents reported having carried out school-based research/enquiry while working at their schools. This figure can be compared with a finding in a national survey of teachers in 2010 that showed that approximately a third of all teachers (across sectors) "*had carried out their own research and enquiry to improve their own practice*". However, "*a sizeable proportion of teachers reported that they had not undertaken their own research (29 per cent) or used other people's research (24 per cent) within the last two years*" *(Poet, Rudd and Kelly, 2010, p. 15).*

Figure: This research formed part (or whole of) an accredited course by an external body (e.g. university) (n=340)
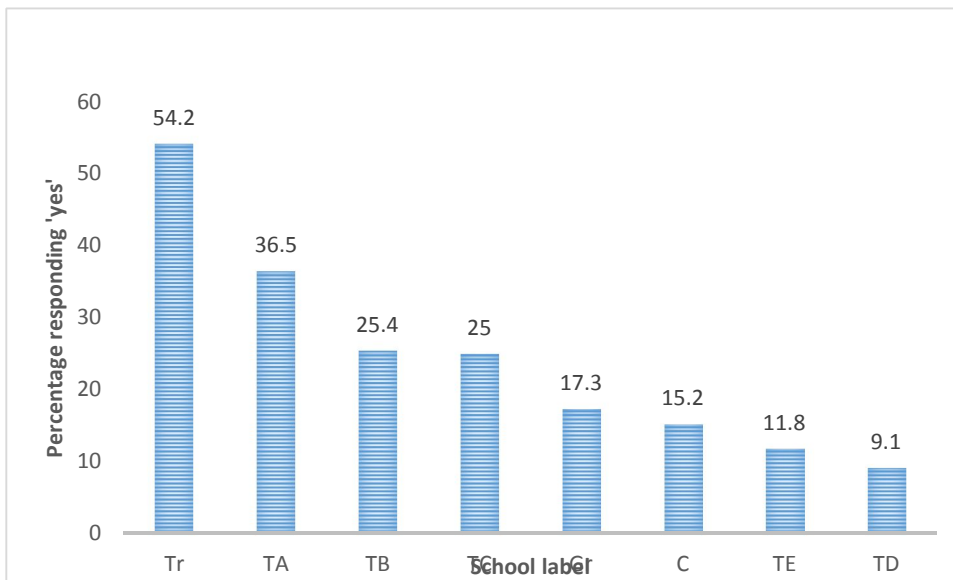
At the majority of schools in the survey, accreditation was not a dominant factor involved in the research. At Trinity Green, the addition of a TLA structure to accredit enquiry projects was probably the major difference, since other schools also supported MA programmes and leadership courses. Even where research activity was very high, such as at Greenmead and Barnfield Schools, accreditation was not an essential component of this activity.

I have been to some degree *involved in* school-based research while working at this school (n=348)
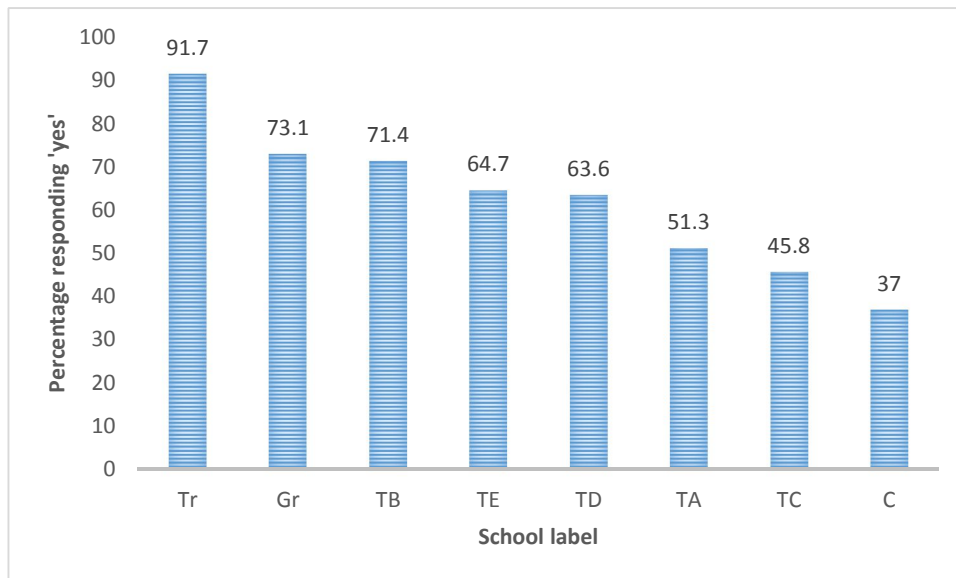
At Trinity Green, the level of involvement in research related activity was astonishingly high, with the vast majority agreeing with this statement. Although the researcher has no direct evidence of this, the Headteacher at Trinity Green said that retention of staff at the school was very high. If this is the case, this may bias this figure somewhat in favour of Trinity Green, since staff are more likely to have at some point in their long careers at the school, to have carried out research there, whereas other schools may have higher turnovers of teaching staff. Greenmead and Barnfield showed the next highest agreement with this statement, followed by Durston High School and finally by Ashbury, Carlton and Croxham schools. Table (below) shows the number of references in the survey to the various types of research involvement.

Table: Types of research activity cited in survey and interviews

Type of research involvement	Number of References
Mentoring, supervising and coaching	52
Carrying out a research project	47
Participant in research	46
Contributing data	42
Participant in joint research	19
Leading a research project	18
Participant in external research project	15
Involving students in research	4

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Around 15% of the participants had been involved in mentoring, supervising and coaching. Around 13% of the overall sample gave examples of specific research projects they had carried out and approximately the same had been participants in research or had contributed data to research. Respondents were able to say more than one of the above, so these are not mutually exclusive.

In terms of research projects carried out, many were directly aimed towards specific teaching and learning strategies and were often described as 'action research':

Several examples were given of research directed towards improving teaching and learning. Some of these were subject-specific, while others were more general, pedagogic-focused. These included:

- Group work research
- Questioning
- Essay writing
- I carried out a project to see if there was a better way to deliver homework, and trialled with questionnaire's etc, a homework booklet with a year 8 class a few years ago.
- Concentration in relation to food, sleep and exercise in children
- Raising the progress of high achievers in English
- Guidelines for the teaching of English as an additional language
- Using a science fair for year 9 science lessons
- Encouraging pupil dialogue
- Using role play in science lessons
- Approaches to teaching literacy
- Interviewing and filming students about their experience of exam preparation for Year 13 Politics.
- Looking at a more open lesson planning and using teacher body language in the classroom.
- The use of mobile phones to record homework and therefore improve student engagement of participation

Some research was carried out in the process of teacher training:

- Research on coaching
- EPD (Early Professional Development) research project, investigating the effects of developing teaching practice on a sample of students and presenting the results to SLT
- Collecting and analysing data on ITT
- Filming of a mentor-trainee post lesson debrief by Teachers TV

Others were more broadly directed and included focusing on particular needs of groups of students and generally had whole-school relevance:

- SEN needs, issues, laws and changes.
- Dissertation topic, free schools
- Student attendance and punctuality research for behaviour improvement programme
- Vertical tutoring
- Research into primary transition and AFL for Modern Languages
- Research in the use of pupil data
- Classroom acoustic project
- Research into the use of 'nurture' groups
- The impact of mental health problems on learning
- Primary research with employment agencies and it became evident that we needed more of an emphasis on 'secretarial' skills such as telephone manner, spoken English etc. We used this research to inform the curriculum.
- I have been involved in an Action Learning Set which focused on setting up a research programme into the benefits and uses of student voice. Once the research was undertaken, a group of us then used the results to tailor and modify our own practice.

Examples of participation in research often related to external agencies, universities or network related projects. These included:

- Ways to encourage pupils to study physics (and science) further/post 16
- Creativity and innovation in language
- Assessment for Learning
- Dialogic teaching (MEd project of colleague)
- Learning lessons initiative
- Participant in research for National Foundation for Educational Research
- Loughborough university, leader of research for Sky Sports Living for Sport project
- Independent learning
- Impact of Learning to Learn
- Numerous small scale projects with other colleagues -
- Leading Edge School Research
- CPD took form of small voluntary task groups with a common interest sharing ideas, researching ideas, trialling strategies and ultimately feeding back learning to each other for past (I think) 2 years in this school
- LSE aspirations survey - facilitating student participation in external research
- I've also done external training, but the training was actually somebody else's research project, and they were running the training as part of their research project.
- Focus group on free schools

Figure: The school bases some of its decisions on research evidence (at any level - individual, departmental, whole-school) (n=351)
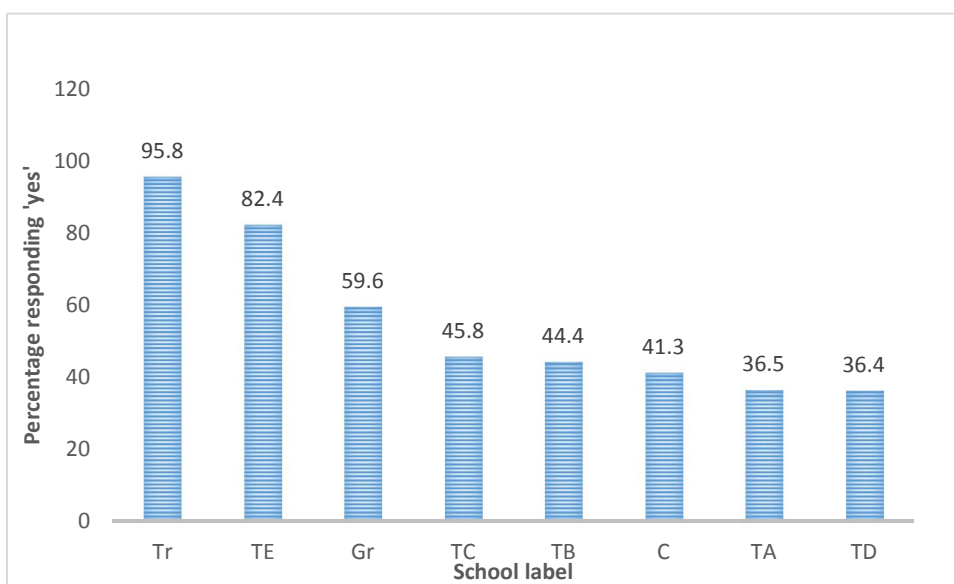
Examples of research-informed decisions were numerous in the survey and also at follow-up interviews. Analysis of responses across the whole survey show eleven main categories of examples given in order of frequency with which they were cited. There is an overlap in that some of the teaching and pedagogical changes were also implemented at a whole-school level, although it some cases it was not always clear

**Table: Examples of decisions taken on the basis of research evidence**

Type of research-based decision	Overall Frequency
Teaching and pedagogy (at individual or departmental level)	56
Whole-school changes	42
Pastoral and Special Educational Needs	14
Data analysis	10
Student voice-based decisions	10
Teacher training and professional development	9
Structural and procedural changes	8
Curriculum Changes	6
Use of technology	4
Consulting parents	4
Physical or resource decisions	3

There is a correspondence between the topics of research activity and the focus of research-informed decisions, i.e. the most frequently cited examples are teaching and pedagogy, whole-school and pastoral/special needs decisions. However, the extent to which teachers reported high levels of research activity at their school, did not closely correspond to the extent to which teachers at these same schools felt that decisions were carried out on the basis of research. For instance, at Greenmead, where 63.5% of respondents had carried out their own research at the school, and 73% had been involved in research in some way, only 59.6% reported that the school based some of its decisions on research evidence. A similar discrepancy is notable in responses from Barnfield School where 44% reported that decisions were sometimes based on research evidence while 74.1% had taken part in research and 61.9% had carried out their own research. The reasons for this are not entirely clear at Barnfield, although One respondent at Greenmead commented on the survey:

"I think as a school we could be doing more in this direction. Some research is carried out by some members of the school and the results may be used by SLT to formulate future policies but my knowledge of the same is limited. Clearly this is an indication that the school needs to be more open and spend some time briefing staff formally about any research projects/findings".

This may suggest greater need for school leaders at Greenmead – and possibly other schools - to make explicit the evidence behind decisions that are taken at the school. At Trinity Green School no such discrepancy is present, where the vast majority of teachers in the survey had taken part in research and nearly all agreed that some decisions were research-informed at the school.
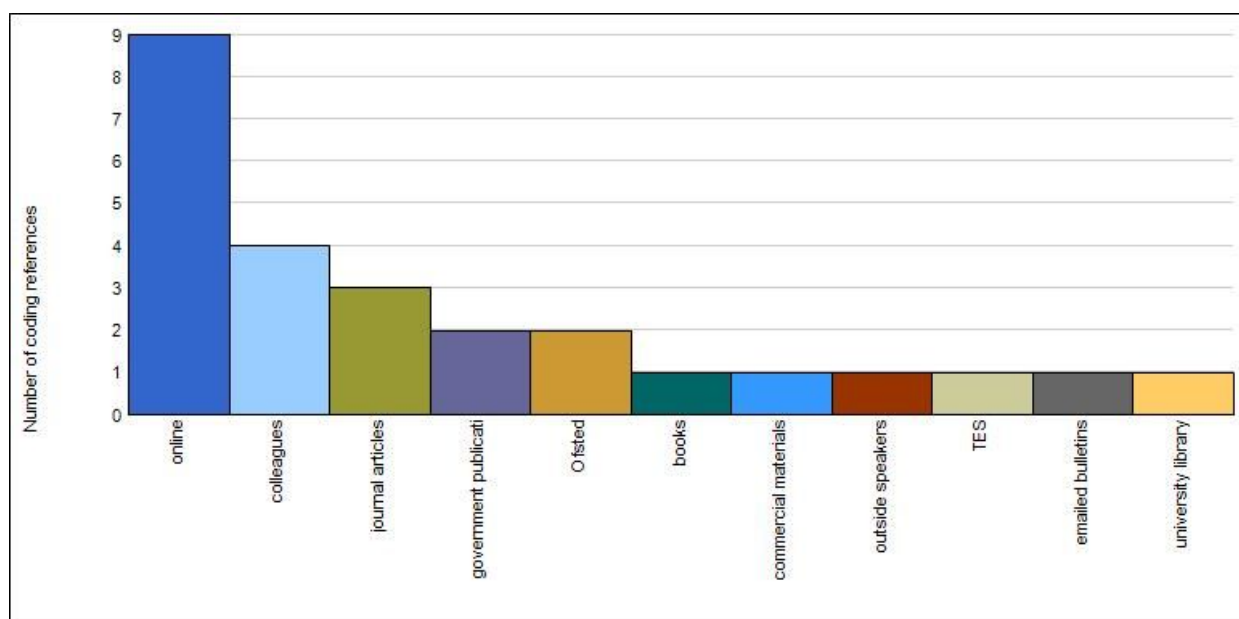
Figure: The school has a formal link with a university (for the purposes of professional development or research) (n=352)
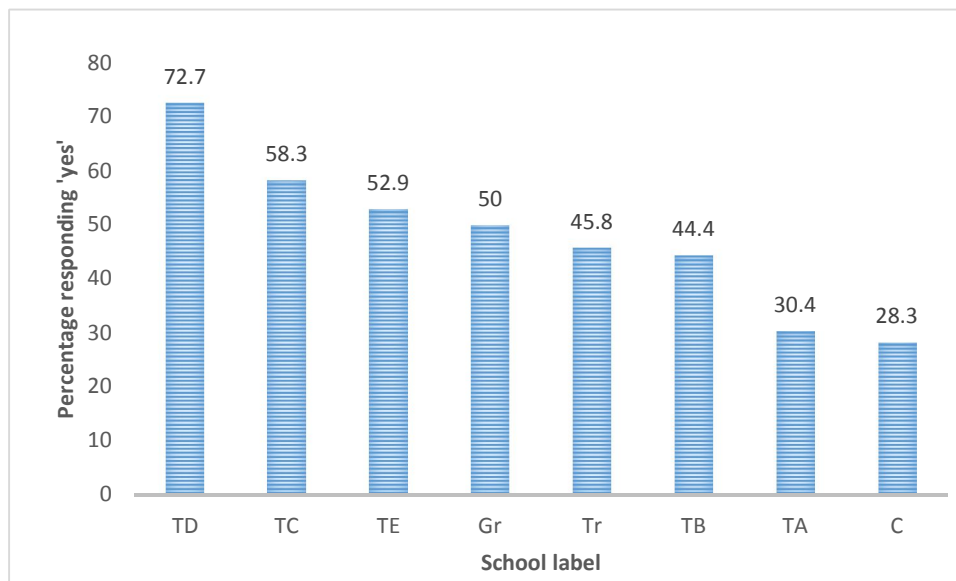
Knowledge of a formal link with a university was relatively high at most schools, especially when taking into account that many teachers in the survey would have worked at the school for only a short time. However less than a third of respondents at Ashbury (a Teaching School) and Croxham were aware of such a link at their school. It is not clear whether a research or professional development link was 'formalised' at either of these schools, so it is hard to verify objectively. However, 29 respondents at Ashbury named one particular university and it is highly likely that this was involved closely in delivering MA courses to a number of teachers and also in some of the school's Initial Teacher Training activities. At Croxham, the Headteacher was no longer taking on PGCE students at the school, at a time when they were faced with an imminent re-inspection by Ofsted, knowing that grades awarded to observations of such novice teachers would count against the school. At Greenmead, the school had a longstanding formal link in a network of schools with a prestigious local university. Others did have relationships with universities for teaching training or for Masters programmes or other courses or temporary projects. These were usually not limited to just one university, however. Interestingly, this was one of the rare parts of the survey that Trinity Green respondents did not come out top or near top in level of agreement.

In terms of accessing research (engagement with), the interviews threw up a number of examples of sources that teachers used:

Figure: Breakdown by category of sources used to gain access to research knowledge (taken from interviews):

The most frequently cited sources were online and ranged from general 'google' searches to more specific websites related to Local Authorities or educational theme-bases sources, such as 'student voice'. However, references to reading or hearing parts of colleagues' research that they were doing as part of a postgraduate course were made. These appeared particularly influential in terms of provoking thought about changes in practice. In the majority of cases, research was accessed through secondary sources, and had thus been summarised or filtered for a teaching audience, and in other cases, the examples 'assumed' that knowledge from authoritative sources, such as Ofsted 'must' have been based on sound evidence. Other research has shown a similar picture of teacher research use, for example, when asked in a survey "where do you access research articles and summaries?"

 "18% said "the internet" generically and 15% said official sources (including DFE, Ofsted and TDA). Between 9% and 11% of respondents used journals, newspapers, in-service training and books for research. The least often used source was TV (5%), followed by subject associations (6%)." (NTRP, 2011)

The small number of examples gained from the interviews (this was not asked on the survey) mean that it is not possible to arrive at a reliable conclusion about the nature of research use in this sample of teachers, or to see if research access was different between relatively 'research-engaged' schools and more typical schools. Even at Trinity Green School, teachers rarely accessed primary research to base their projects on.

"Not often. I mean we've never sort of got a, "This is a journal, we're looking at this." It's much more sort of, "We know in the school the old system doesn't work." At the end of last year we had a consultant in and she did a load of interviews with pupils in school, I think she interviewed me as well; she interviewed some staff and said, "What's working?" So it's not often an external source, and external journal, it's very much a kind of, "This is an issue that we as a school feel is

important, let's look at it." I mean obviously the literacy one has developed from government pressures and OFSTED criteria, but no, I wouldn't say we are reading journals or reading articles, it's much more the school as a little world kind of thing. It's sort of in isolation." (Carl, teacher at Trinity Green)

Certainly, access to support, including to external consultants is likely to increase the usefulness of research outputs by school practitioners. One report highlights the,

"the complex and sustained effort needed to support practitioner learning from research outputs and (emphasises) the need for recognition of the active role that teachers play in the process and the related need for specialist mediation and brokerage." (Bell et al., 2010)

Having sufficient access to research-based expertise, both within and outside the school then, can help not only with the conduct of practitioner research, but also the conversion into learning that can come from reading existing research outputs.

5.3.1 Overall conclusions for research activity:

Around 50% of this sample of teachers had carried out research while at their schools and over 60% had been involved in research activity. However, given the wording of the statement 'The school bases **some of its decisions** on research evidence', the level of agreement (49%) seems remarkably low. This, all the more so, given these schools' unrepresentatively high level of interest in research engagement compared to more 'typical' schools. At the low end of the scale, only 36.5% of Ashbury School respondents agreed with the above statement. This was despite the fact that just over 45% of their teaching staff had carried out their own research and over half had been involved in research. Such an observation corresponds somewhat to the NTRP (2011, pp. 12-13) finding that in some schools a sizeable minority of staff were experienced teacher-researchers, despite the fact that their school had little or no engagement in or with research. These teachers were apparently engaging regularly in research, despite a lack of apparent interest from their own schools. Some responses in this survey also show how teacher research was a matter of personal choice and the individual's motivation, rather than something particularly encouraged by their school. Nevertheless, the NTRP sample did show that experienced teacher-researchers were more likely to come from schools that actively promoted the use of research.

One difference between more research-engaged schools and less research-interested schools, appears to be that there is a connectedness between the activities of research and those of practice. Moreover, where decisions are made on the basis of research, teaching staff are made aware that this is the case and, as such, come to value the role that this plays in leadership choices affecting the school. If a significant number of teachers are involved in research overall, then there may be a large residue on untapped knowledge that could be more effectively used to serve the interests of the school.

The relationship between research engagement, accreditation and formal links with universities looks rather more subtle. While at Trinity Green, a large proportion of research activity was accredited, this did not seem to be a defining

factor. This accords with the NTRP survey (2011) conclusion that teachers seldom engaged in research in order to gain a qualification. Rather "professional development and ideas for using in the classroom were the two most commonly mentioned reasons for engaging with research" (2011, p. 30).

This section of the survey was concerned with the extent to which, i) the school was committed to sharing the results of its research both within and, ii) beyond the organisation. Related to the latter point, one of the survey questions asked about, iii) the extent and nature of the school's contribution to research-related partnerships, networks, events or publications. Responses on the surveys for the latter two statements elicited a higher rate of 'don't knows' (over 50% of responses) compared to the first statement (eliciting 38%). Where agreement to statements was low, this meant that 'don't know' responses were particularly high, only a small minority (< 5%) responded 'No' throughout.

Figure: The school is committed to sharing the results of its research within the organisation
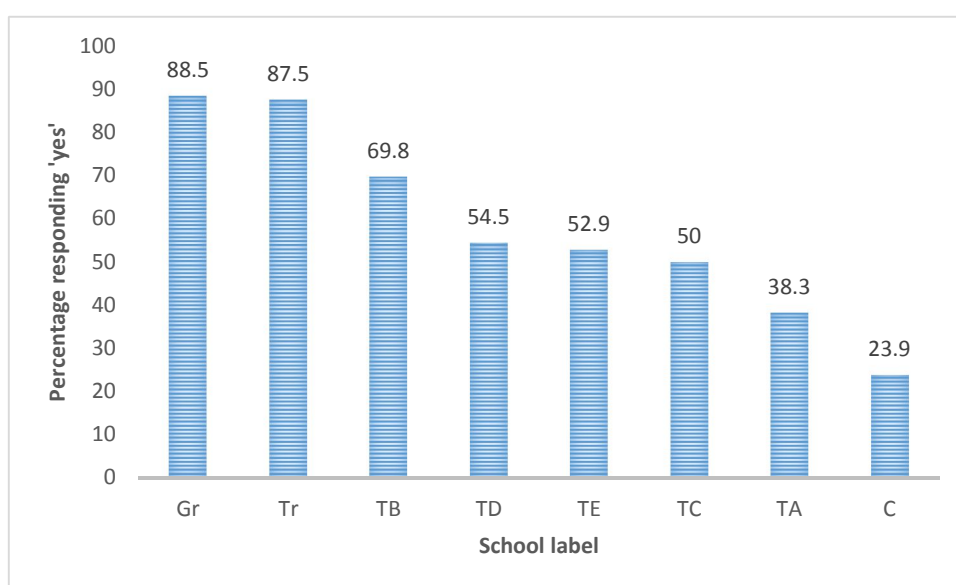
Responses from Greenmead, Trinity Green and Barnfield were particularly conclusive in terms of the extent to which research results were shared within the school. For example, one survey respondent at Greenmead outlined the variety of ways in which research was disseminated through the school:

"We have meetings between staff on topics of interest (teaching styles/ AFL/differentiation/ targeting high ability students/low ability students/teaching languages through literature/encouraging students to read aloud) and we share our findings every year." (anonymous survey respondent)

By contrast, little awareness was the picture at Ashbury School:

"I am sure there are teachers in the school engaging in research I just don't know necessarily who they are and what they are doing!" (Anonymous survey respondent)

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Some examples of ways in which research was shared within schools are given in the table below:

Table : Examples of research shared within the school (from survey and interview responses):

Type of research	Mechanism for sharing	Number of references
Individual practitioner research projects	• School 'journal' on website	
	• Teaching and Learning/ Research Sharing meetings	2
	• Informal discussion between colleagues	2
	• INSET sessions	3
	• 'Celebration days'	3
	• Departmental meetings	2
	• Year team meeting	
	• Guidance or recommendations in written form	
	• SLT	
	• Hard copy of report	
SLT keep abreast of new research	• Staff meetings • school email	3
Feedback to staff on national research conference findings	• Various	
Sharing with whole-school built into ongoing cycle of research projects that the school promotes based on identified areas of priority	• Various	
Group research project on whole-school relevant research	• Various • SLT and Governors meeting	2
SLT sharing staff research findings	• Recommendations passed on to Middle Management	

Sharing research was certainly not confined to traditional written report formats, although some efforts were made to get teachers to do this at Greenmead in particular. At this school, summaries of annual action research projects are published as part of an ongoing series of 'Learning Lessons' articles on the school website. The variety of formal and less formal mechanisms for sharing research in these schools reflects the description of 'Mode 2' knowledge. That is to say, 'research' knowledge in these schools is often socially distributed, context specific and embedded within networks and people rather than in traditional outlets, such as written academic reports (Gibbons, Limoges and Nowotny, 1997).

The mechanisms for sharing research findings in these schools are more concerned with maximising impact on practice or raising awareness than ensuring rigour through peer review.

Figure: The school is committed to sharing the results of its research beyond the organisation
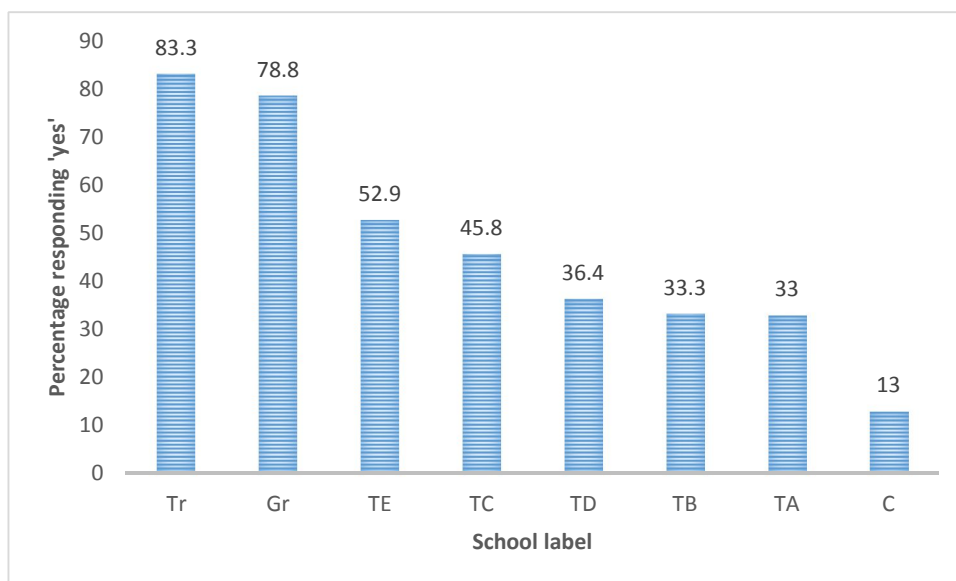
The most striking variation with here was that, while Barnfield School (TB) elicited strong agreement about commitment to sharing results within the organisation, this was much weaker in terms of how this commitment was perceived to sharing results 'beyond' the organisation.

However, only a third agreed that Barnfield was committed to sharing research beyond its boundaries. This may reflect the comments made by some interviewees regarding a strong focus on 'how they did things at Barnfield'. This may be due to the especially challenging nature of the students at the school. Equally, it may reflect a lack of confidence or openness with sharing with, and learning from, other schools and organisations. This relatively inward-looking characteristic of Barnfield staff was challenged shortly before the interviews when senior teachers from a neighbouring school, alongside Ofsted trained inspectors, came in to observe lessons at the school and gave lower grades (under a revised inspection framework) than would be expected from an 'outstanding' (Ofsted) school.

Equally this was reflected in the perception that the school did not contribute much to external research-related partnerships, networks, events or publications (22% agreed with this statement, see figure , below). Several examples of contributions to external research partnerships, networks, events or publications were cited on the survey by Barnfield School respondents:

NCSL Research Associateships

LSE yr 10 aspirations study

Various SEN projects

MSC Research-Coaching to improve confidence of Mainstream staff in meeting SEN

National Sports Awards and Mosaic Art

TDA via annual SED and other research base projected funded by them

The school website

ALS framework to other schools

Borough wide INSETs, Supporting other Depts - PE.

It is not clear, however, how widely known these examples were in the school or to what extent a significant proportion of staff were involved in them.

Figure: The school has contributed to external research-related partnerships, networks, events or publications
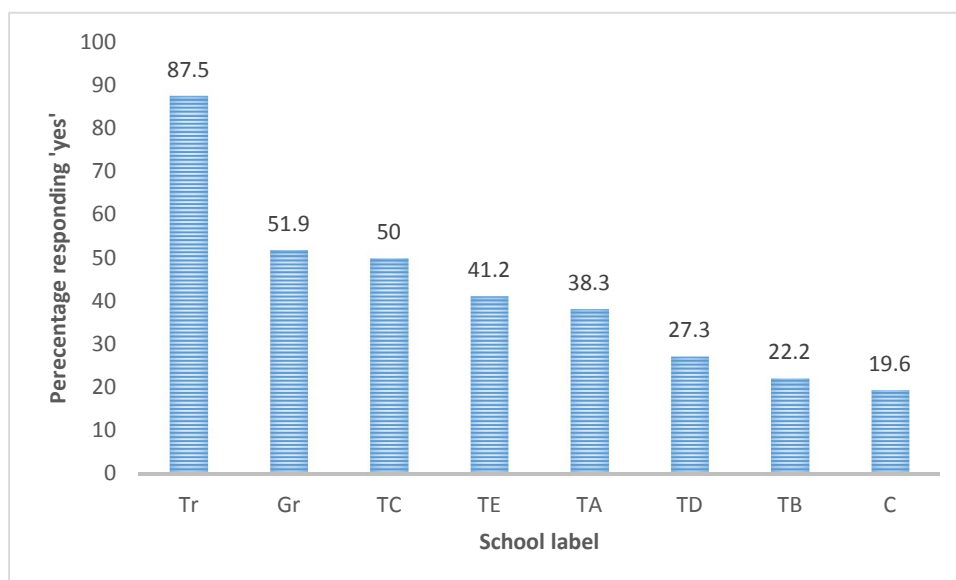
Greenmead School respondents were less inclined to agree with this statement than the earlier one about commitment to sharing results beyond the organisation. However, the level of agreement is still high enough for it to retain its order of second highest among the surveyed schools. This may reflect the characteristics of the samples at these two schools. At Greenmead there was a much higher response rate, with 75% of teaching staff, compared to 19% at Trinity Green. Importantly, at Trinity Green, the majority of respondents were management or senior management scale teachers, while over 50% of Greenmead respondents were teachers or TAs. Thus, while there was a feeling at Greenmead that the school was committed to external research events and networks, fewer were able to give concrete examples than at Trinity Green. Nevertheless, where examples were given at Greenmead, they reflected a diversity and richness of involvement in research:

Work with the research network, with a university at its hub.

Work with CUREE (Centre for the Use of Research and Evidence in Education)
Leading from the Middle
SSAT - Student Voice - Project 9
Running Leading Edge conferences to share research / practice
Other 'Leading Edge' activity, such as development/innovation or otherwise engaged in research activity
Sharing good practice in languages at regional meetings
Various events at (name of local network)

This section assessed awareness of i) a designated member of staff ii) funding for future research efforts and iii) training in research skills. Don't knows accounted for a high proportion of responses where agreement was low to the statement. 13% overall responded 'no' to the question about a designated member of staff for promoting research engagement but this was only 8% and 9% respectively for the other two items. This makes intuitive sense, since awareness of future research funding at the school may be limited more the senior leaders - if at all given the situation of uncertainty in education funding in the present economic situation. The change in government in 2010 after the economic recession also coincided with the abolition and withdrawal of a number of research related programmes and agencies. This most likely contributed to a feeling of pessimism about research funding but without clear indications of how much might become available in the near future. Those schools that had become Teaching Schools were able to apply for some additional funding for research strands of their activity but as this was the first Teaching School cohort this was still in early days of this process. It is unclear why so many respondents at Durston High School felt that there was funding available (see figure   ), since this school did not participate in the follow-up interview stage.

Figure   : There is a designated member of staff (or members of staff) who is/are responsible for promoting research engagement (n=350)
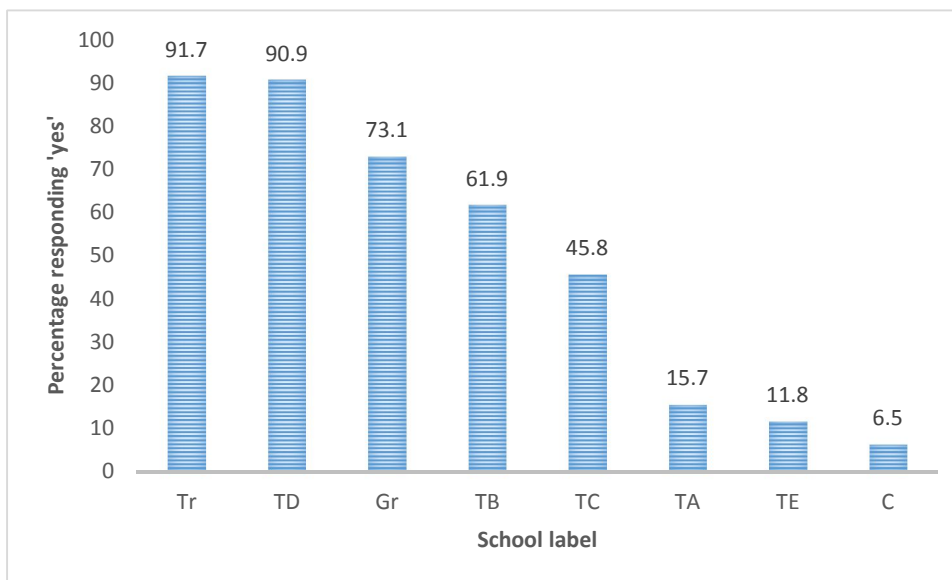
Recognition of staff responsible for promoting or coordinating research was high at four schools and relatively high at another (TC). In the case of the latter, it was not entirely clear that research was a specific or discrete remit of the Assistant Head (Professional Development), although twelve people named her in the questionnaire. From the interview it was clear that she was involved in some

research-related activities in the school although this was subsumed within her overall task of overseeing professional development and other Teaching School tasks. At Barnfield Community School (TB), 35 out of the 40 responses to name the person at the school, correctly identified the Assistant Headteacher, Tanya, who was a keen proponent of research engagement. Most striking at Trinity Green and Greenmead schools was the extent to which several members of the SLT were cited as having research engagement roles. In his investigation into the culture of research at six secondary schools, Ebbutt (2002) describes the key difference between schools with 'established' compared to 'established-embedded' cultures as being the extent to which research activity was dependent in the former on the efforts of one person to 'champion' research in the school. The departure of such a person (which happened the year after this research at Barnfield Community School) might lead to the decline in research engagement. In the latter category, research was embedded much further across the school and, he observed, was therefore likely to continue after the research coordinator's departure. At Barnfield, Tanya was also the person who set up the school's approach to ALSs and Early Professional Development. She cascaded this enquiry-based model of learning via other senior leaders, although her enthusiasm and knowledge about research engagement will no doubt be missed now that she has left:

"There is a certain way of doing it that we know about and we're taught about at the beginning. So there was a meeting at the beginning. All the leaders met together with Tanya. And she assigned us an SLT person to help us if we need it." (Katherine, Barnfield Community School)

One key difference with Ebbutt's research is that Barnfield Community College, as a Teaching School, has a strong reason to continue research engagement (such a category did not exist at the time of his research).

Figure: There is funding available for engagement in research over the next few years (n=351)
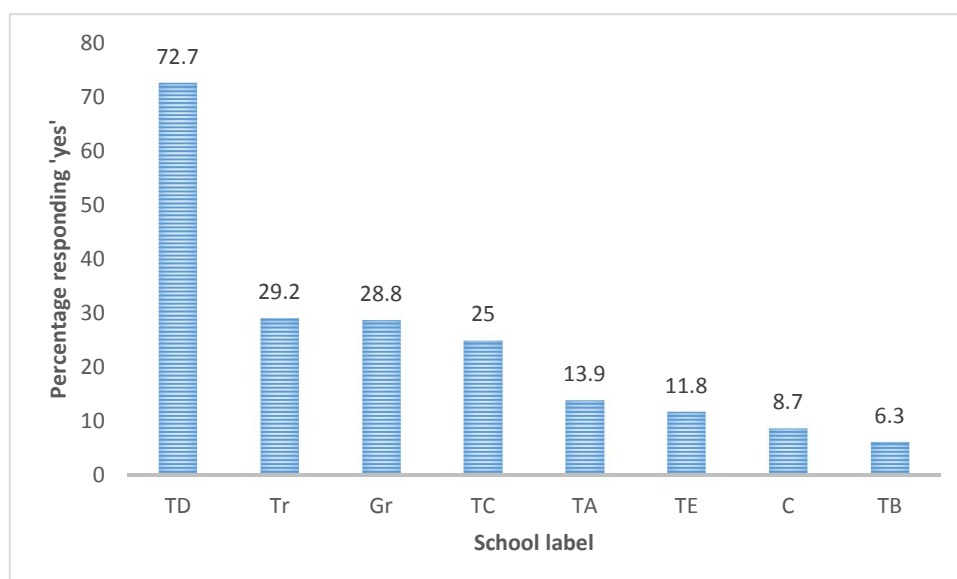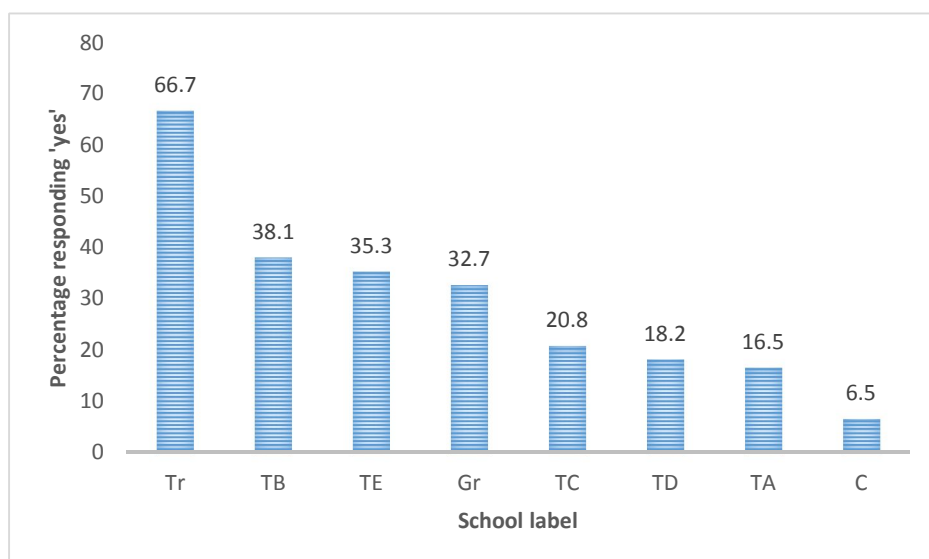
Figure: There is training available to develop skills of research (n=352)

Trinity Green had consultant support for those undertaking research; their staff library was also very well resourced. Most importantly, several teachers were TLA research mentors who were able to guide and train other members of staff wishing to conduct their own enquiries. Research training was highlighted as a key issue by one survey respondent at Carlton High School:

"Lack confidence to do effective research. Don't really know how to make research effective and if the results are significant or just a statistical fluke. Don't have training to analyse data effectively".

Such a comment about lacking confidence accords with a previous teacher survey conducted in 2010 by the NFER, which found that:

"Only around half of respondents (52 per cent) agreed or strongly agreed with the statement that 'I feel confident in my research skills to conduct my own enquiry'" *(Poet, Rudd and Kelly, 2010, p. 15)*

5.5.1 Conclusions about sustainability of research engagement:

Sustaining research engagement involves a number of factors, the support of senior leaders is likely to be a crucial one (Sharp *et al.*, 2006a). In this respect, Trinity Green and Greenmead Schools both appear to have advantages over the other schools in that several members of the SLT were identified as having responsibility for promoting research engagement in the school. As already mentioned, Barnfield Community School had one strong research champion, who, at the time of writing, has left to work at another school. Where Trinity Green

comes out as unique, however, is in the highly developed support network, comprised of TLA research mentors and external consultants, which allowed research activity to continue. As old sources of funding are withdrawn that underpinned Greenmead's research activity, new strategies will be needed which may require new forms of training and support. As Greenmead is not (at present) a Teaching School, it may also find securing future research-based funding more challenging. Developing teachers' skills - and hence confidence – in conducting research is likely to make a big difference to the amount of research activity conducted in the school, since recent evidence suggests that motivation is high among teachers to conduct their own research:

"six out of ten respondents (60 per cent) agreed or strongly agreed that: 'I would like more opportunities to do my own research to improve my teaching'; and nearly two-thirds (65 per cent) agreed or strongly agreed that 'I would like more opportunities to collaborate with other colleagues on a piece of research'." (Poet, Rudd and Kelly, 2010, p. 15)

Stages of development –

	School	Very high	High	Medium	Low
Embedded	Trinity Green Training School	Values, leadership and culture Support systems for engaging in and with research Research activity Impact Sustainability Overall perception			
Established	Greenmead Grammar School	Research activity Impact	Values, leadership and culture Support systems for engaging in and with research Sustainability Overall perception		
	Barnfield Community Teaching School B	Research activity	Values, leadership and culture Support systems for engaging in and with research Sustainability	Overall perception Impact	
Establishing	Teaching School E		Values, leadership and culture Impact	Research activity Overall perception Support systems for engaging in and with research	Sustainability
	Teaching School D		Support systems for engaging in and with research	Values, leadership and culture Research activity Impact Sustainability	Overall perception
	Carlton High Teaching School C			Values, leadership and culture Impact Sustainability	Support systems for engaging in and with research Research activity Overall perception
	Ashbury Teaching School A			Values, leadership and culture Research activity	Support systems for engaging in and with research Impact Sustainability Overall perception
Emerging	Croxham Comprehensive School			Values, leadership and culture	Support systems for engaging in and with research Research activity Impact Sustainability Overall perception

Previous research by David Ebbutt (2002) from six secondary schools working in a partnership with Cambridge University suggested that school research cultures developed over a period of many years and identified three stages: emerging, established and established-embedded. This research suggests a slight modification:

Emerging can be seen as schools that have just outlined a vision that incorporates research engagement as a central part of its strategy. This stage illustrated Croxham school very well. Having been subject to a 'needs improvement' grade by Ofsted, a new Headteacher came in and six research bursaries, which were to last for one year initially, had been set up in relation to the school development plan. Sixteen members of staff applied for these bursary posts. Most people did not feel that the school had a clear structure to support research engagement and consequently research activity was low overall. Although there was agreement about the school having a culture of challenge and collaborative professional learning, this was weaker than in other cases. Indeed, the Headteacher wanted the research to help change the culture itself, to one in which practices could be questioned and challenged by all and where leadership opportunities were open to middle leaders in particular. This is a clear example of what Wilkins terms 'tactical utilisation' of research (Wilkins, 2011b, pp. 26-27).

Establishing: While research activity was growing and had been in existence for some time at a few schools, other elements of a strongly research-engaged school were still not in place. In Ashbury, the Headteacher freely admitted that the school had no particular structures in place to promote research, however, there were strong elements of professional collaboration and outward-looking elements of many staff at the school which appeared to make this extremely fertile ground for further development in this area. One strong feature of Ashbury was the highly academic style of discourse found in two of the school's major subject departments. The extent to which learning from these departments had been consciously disseminated though was in question – this may have been partly a factor of a new building where subject departments were now geographically more separated. Interestingly, this year, the school has appointed research coordinators who appear to have a key role in sharing research results and practices around the school more widely.

In the case of Carlton High school, some of the interviewees gave examples of the innovative and varied ways in which professional learning was developed at the school. These included Challenge Partner visits, Learning Walks and Good practice sharing in whole staff assemblies. However, there was less of a tendency to define some or much of this as research activity. Asked whether it was common to hear people discussing the research behind decisions one teacher said:

"Whether, is it really explicit? I don't know. But I hope to any decision that is made that is calculated and it's some sort of evidence. What that evidence is, I don't know. This hasn't been made explicit to me. But then I assume it doesn't need to be. You know, you assume that anybody that's making that decision on the school and the welfare of the school is doing it with some ideas in mind" (Nora, Head of R.E and Citizenship, Carlton High School)

This raises the important point about research engagement being about the spread of a professional language related to research and an 'inquiry stance' to professional learning (Cochran-Smith and Lytle, 2001).

Mitigating against a more free-ranging and empowering professional and research-based discussion, the dominating influence of Ofsted was never far behind:

Asked what it was like to work at the school, one teacher said:
"it's a really good school, because you learn so much, like, theyr'e so Ofsted driven, and so, about you improving as a teacher. They'll do anything they can, like, observations and when I was training you didn't have any of that. You know, you had your observations but you never really got to see, understand the whole Ofsted, it was never really Ofsted driven where I was, this school is quite Ofsted driven, so. And they do, I think that, they care so much about grades, and everything is always about grades, which is fantastic and but sometimes the kids don't get the sort of, the social skills sometimes I think that they need to move on. I think that's sometimes where our school lacks but they get the grades and it's fantastic in that respect." (R.E. Teacher, Carlton High)

Established:

Ebbutt found in his research that the chief distinction between schools in this category and those with 'emerging' research cultures was that there appeared to be fewer barriers to research-based activity. These included factors such as school investment in time and funding for research and links with external bodies. One school, Greenmead, in this category had a long history of sponsoring teacher research. Teachers were given significant time remission and cover to do action research projects and a large proportion of staff had now been supported to do this. Sustainability was to an extent in question though, since structures that previously supported training and funding (for example the Best Practice Research Scholarships) had now disappeared. At Barnfield community, much of the research activity was championed by one particular member of the senior management who had now left. However, Ebutt's main distinction between Established-Embedded and Established researching cultures was the fact that the research activity did not depend on the efforts of one 'champion'. These were called Research Coordinators at the SUPER schools, following the model of Networked Learning Communities. Mclaughlin at al (McLaughlin, 2006), in their case studies of researching schools, showed how, even when a new research coordinator was appointed, this could lead to a significant change in the direction of the school's research strategy and vision, partly based on the expertise and interests of this one person.

Also, the proportion of staff at both schools that agreed that the school based some of its decisions on research was lower than might be expected given the density of research activity at the school. This suggests more work was needed to change the overall perception that the school was committed to research engagement, particularly at Barnfield.

 Embedded: Trinity Green School staff expressed high levels of agreement to all sections of the survey. Even traditional barriers to research activity seemed to be less apparent at this school, with the vast majority of staff saying that they had access to resources, expertise, support, the time and a system to encourage engagement in and with research. Staff at all levels in the organisation were aware of the school's long-term commitment to research. Very low turnover at the

school was attributed by the Headteacher in no small part, to this culture of collaborative professional learning and research engagement.

Swaffield and MacBeath define embedding as "a concept applied to a vision, a set of procedures which become integral to the structure and culture of the organization. Over time, sooner or perhaps later, new ways of seeing and acting become habitual, reflexive and ingrained in practice." (Swaffield and MacBeath, 2006). The same authors talk of embedding as a process of consensus building, towards some kind of homogeneity of practice.

Comparing Greenmead and Trinity Green, the strength of agreement to the overall perception was significantly less strong, also other categories point to weaker agreement that research training was available and that fewer were aware of the school's contribution to external events, networks and publications.

Appendix 15: Types of research activity:

Type of research involvement	Examples	References
Mentoring, supervising and coaching	Mentoring (28) Examples: • Mentoring two teachers completing the "Leading from the middle" course. • Mentored PGCE students (7) • Mentoring a group of third year teachers carrying out research into achievement of different groups at GCSE. • Mentoring NQT (2) • Mentoring GTPs (2) • Mentoring in a pastoral role. • Mentoring with local school-based training group Supervising and coaching (24) Examples: • Coaching masters students • I have given advice to those conducting enquiries. • Teaching Leaders participation of research and project to improve A*-A; • Modelling good teaching practice at partner school	52
Carrying out a research project	• Doing small-scale action research, unspecified (10) • AS part of teacher training QTS (2) • As part of a Masters course (2) • I researched conditions relating to SEN. • Research on coaching • Interviewing and filming students about their experience of exam preparation for Year 13 Politics. • Looking at a more open lesson planning and using teacher body language in the classroom. • This was the school-based study for NPQH. • SEN needs, issues, laws and changes. • Primary research with employment agencies and it became evident that we needed more of an emphasis on 'secretarial' skills such as telephone manner, spoken English etc. We used this research to inform the curriculum. • Dissertation topic, free schools. I hope to carry out a focus group in January and to issue 16 questionnaires to colleagues in March 2012. • EPD (Early Professional Development) research project, investigating the effects of developing teaching practice on a sample of students and presenting the results to SLT • I carried out a project to see if there was a better way to deliver homework, and trialled with questionnaire's etc, a homework booklet with a year 8 class a few years ago. • Group work research • Student attendance and punctuality research for behaviour improvement programme • Vertical tutoring • Questioning • Essay writing • The use of mobile phones to record homework and therefore improve student engagement of participation • Conducted research with students which was then presented at a conference hosted by City University • Collecting and analysing data on ITT • I have been involved in an Action Learning Set which focused on setting up a research programme into the benefits and uses of student voice. Once the research was undertaken, a group of us then used the results to tailor and modify our own practice.	47

	• Research into primary transition and AFL for Modern • Languages • Concentration in relation to food, sleep and exercise in children • Research in the use of pupil data • Filming of a mentor-trainee post lesson debrief by Teachers TV • Classroom acoustic project • Research into the use of 'nurture' groups • Raising the progress of high achievers in English • The impact of mental health problems on learning • Guidelines for the teaching of English as an additional language • Using a science fair for year 9 science lessons • Encouraging pupil dialogue • Using role play in science lessons • Approaches to teaching literacy	
Participant in research	• Ways to encourage pupils to study physics (and science) further/post 16 • Creativity and innovation in language • Assessment for Learning • Dialogic teaching (MEd project of colleague) • Learning lessons initiative • Participant in research for National Foundation for Educational Research Loughborough university, leader of research for Sky Sports Living for Sport project • Independent learning • Impact of Learning to Learn • Numerous small scale projects with other colleagues - • Leading Edge School Research • CPD took form of small voluntary task groups with a common interest sharing ideas, researching ideas, trialling strategies and ultimately feeding back learning to each other for past (I think) 2 years in this school • LSE aspirations survey - facilitating student participation in external research • I've also done external training, but the training was actually somebody else's research project, and they were running the training as part of their research project. • Focus group on free schools	46
Contributing data	• Independent learning plus L2L impact • Extracurricular data and research • Numerous small scale projects with other colleagues - contributing data, observation etc. • Participating and contributing data to Colleagues Dialogic Teaching MEd work and also to Learning lessons initiatives here • I am involved in a teaching and learning focus group. I have been gathering data. • Filming bits of lessons for examples of good practice • Analysing data, collecting data, observations - reporting back to SLT. • Year of staff and student surveys on curriculum provision • Contributing data, Edgware Road Project and working as a moderator for education. • Collection of fitness data. • Worked with IOE research in study on attitudes to Maths and Physics • Contributing data to PLTS audit for KS3. • "Student survey on ICT curriculum/delivery. • Parent survey on ICT curriculum/delivery." • Behaviour and data. • Collating data on SEN & SEN provision. • Questionnaires given to students + parents about curriculum + learning. • Gifted and Talented workshops with year 8 students provided data	42
Participant in joint research	• Two or three teachers work together and research an area that they want to tackle in their teaching, discuss ideas and put it into practice in a lesson. In the Summer Term all the researches carried out by the teachers at school are shown and explained during an INSET Day • Participation in Action Learning Sets • I did some research under the leading edge umbrella with some collaboration with another member of staff • Teaching and Learning programme run in school (4) • Research and development groups (2) • Working parties, looking at EAL learners	19

	- Working party research for the development of Global citizenship - Working with other psychologists for research from Ashbury school - Citizenship working party audit of other subjects - Helped another colleague and been a research participant - Partnership Development School projects, Cross - school projects. (pupil voice and use of Virtual Learning Environments) - As part of a team, analysing data and interviewing students. - Whole-school CPD with (name of) School partnership Schools. To give subject specific Departments time to see, discuss and evaluate Teaching and Learning practice. To act upon reflective feedback and to help build resources as a collective group of Teaching staff for a specific group of pupils based on local/national statistics. - Working within my dept during INSETs - As part of a group looking at questioning, lesson observations - I aided a teacher with their EPD research into the use of other adults whilst working as a Learning Support Assistant.	
Leading a research project	- Leading an Action Learning Set (4) - Developing and researching the existing careers programme and work based learning programme. - Curriculum development, curriculum design in MFL, - AfL in school and in partner schools. - The use of verbal and non-verbal behaviour by teachers - How to teacher BTEC courses more effectively - I have led county wide networks looking at implementing research evidenced improvement to teaching and learning - "facilitating Teaching & Learning Workshops - Researching the use of other adults in the classroom - Designing research based CPD - I am research and development co-ordinator - In my administrative role I have led a group of cover supervisors researching cover work left for planned absences, and improving the learning experiences for students in a cover lesson. We are currently researching students' attitudes to cover lessons. - Organising and developing developmental activities and resources - Conducted research sharing workshops - Overseeing projects, alongside an external consultant - Tracking of teacher's performance data at key stage 4 - Improving teacher education through contact with outstanding teachers	18
Participant in external research project	- Research for NFER - Loughborough university, leader of research for Sky Sports Living for Sport project - NFER online questionnaire (quarterly) - Liaising with PGCE students, working with outside artists to generate projects/workshops. - STEM Pathfinder School. Trailing functional skills teaching. - DFES teachers' survey. - Was collaborating on an externally funded project last year, but had to stop as no time to continue working on it and no support to provide this despite it being mentioned in professional development targets agreed for the year - Taking part in 'Learning to Learn' project with Science Museum and Lottolab. - Carried out surveys for Institute of Physics. - LSE aspirations survey - facilitating student participation in external research - Participant for the Royal Society (surveys) - Learning How To Learn with Cambridge University - And then we were going along to FLARE. We were involved in FLARE, the Essex research group. I know that he did a case study in one of the articles he wrote up about us of the school. - One was laptops for pupils, it was a pilot scheme which gave the school 60 laptops to give out to an experimental group and really evaluate the use of the laptops, primarily educational use but obviously there were other things going on. - There was another laptop one which was laptop for teachers so that was the follow-up.	15
Involving students in research	- Years 7 – 10 taken off timetable for a few days to work in differently structured groups on self-directed research.	4

	- pad and technology) Teachers and student led groups, talking about the apps and things they have found useful, and, "Why don't we use this in our lesson? Why don't we use that in our lesson?" - An external consultant who will come in and explore what the pupils do think about literacy or the reward structure or Pupil Voice or whatever. (Name of consultant) interviewed a group of them, probably in here actually, and she spoke to them. So they sort of participate in it, but I don't think they're coordinating any of their own. If that makes sense.	

Appendix 16: Examples of decisions that were cited in the survey as having been based on research evidence:

A breakdown of responses across the whole survey show the twelve main categories of examples given in order of frequency with which they were cited. Given the variable response rate a comparison between schools is not possible. There is an overlap in that some of the teaching and pedagogical changes were also implemented at a whole-school level, although it some cases it was not always clear.

Type of research-based decision	Specific examples cited in survey (frequency cited in brackets)	Overall Frequency
Teaching and pedagogy (especially at individual or departmental level)	Use of Assessment for Learning strategies to support pupil progress (31) Teacher questioning strategies (6) habits of mind; deep thinking (2) Strategies for progression, effective use of lessons plans (2) Data Analysis used to inform teaching methods (2) Co-construction and Deep Learning Departmental level modification to the way students are prepared for coursework assessment based on the results of a mini research project carried out by a member of the department the previous year. Department focus on dialogic teaching bringing in research undertaken as part of my MEd. Building or informing pedagogy or ideology in schemes of work - self-reflection of teaching style Experimentation with new types of homework, feedback to department about results. At departmental level. Priorities in Physics changed in light of feedback from IOE research UPMAP project. The RAP is based on research about emerging students needs and the importance of certain teaching strategies such as setting homework, independent study, incorporation of SEAL and PLTS into lessons etc. Using teaching techniques to engage different types of learners Assessment within PE. Masters research to develop Team teaching between English/SEN based on Coaching model Research that I undertook as part of my EPD course has drastically changed the manner in which the Drama department look at Gifted and Talented provision as well as how Key Stage 3 is assessed - linked to much stronger SOW. Greater use of effort grades at KS3 Maths teaching is based on some of the findings from OFSTED reports on outstanding maths teaching	56

	Behaviour- dept completed questionnaires to assess behaviour management techniques in classroom. Results suggest use of consistency and positive praise. Dept has actively done this using SIMS Revision strategies	
Whole-school changes	Annual bursaries for research and feed in to school development plan The research conducted on Independent learning has helped inform to an extent as to where the school is on this particular platform Use of Assessment for Learning strategies to support pupil progress. (25) Teaching and learning policies (2) Policy research. White papers, SSAT research often informing SMT discussions. The course leader from Lottolab was invited to lead an after school NQT INSET & a whole staff INSET. Revision of behaviour policy and use of the behaviour for learning centre. Assessing fitness data across age/cultures, etc. Incorporating PLTS throughout school following reports on positive impact. Vertical tutoring - research was used to inform decision that the college was not ready for that system yet. Boys learning (2) Raising achievement for FSM students and curriculum reform. Numeracy policy came from a numeracy research group Considerable work based on developing Thinking School based on research around Costa's 'Habits of Mind' and others such as 'Thinking Hats' de Bono Increased use of enquiry work Provision for the Gifted and Talented Whole-school project to engage pupils in thinking based on research and enabled teachers to do their own research (2)	42
Pastoral and Special Educational Needs	Strategies employed to help students with statements and SPLD based on research evidence. i.e. dyslexia, speech and language strategies, etc. (4) Methods associated with counselling adolescents INSETS from child psychologists to inform pastoral care and teaching Introducing discussion groups following concerns around number of students involved in various dangerous activities outside school. Revision of behaviour policy and use of the behaviour for learning centre. The Sutton Trust found that students benefit from intensive support. Southfields have placed Learning Support Teachers in bottom sets Y8, 9 and 10 classes to provide this targeted intensive support to students. Some of the tutor time research I carried out was used to help the pastoral leader develop tutor activities Based the introduction of a "restorative justice" approach to discipline issues on the basis of research within and beyond the school. Research into FSM students leading to some changes in our approach to these students	14

	Rewards policy for pupils - analysis of pupil planner summaries led to change of thinking regarding KS4		
	Employability skills training for students in year 10		
Data analysis	Defining research to meaning evidence of performance, and evaluation of alternatives etc, (3)	10	
	Reports on relationships between attendance and achievement. (3)		
	Data analysis of results informs intervention and teaching strategies.		
	Pupil achievement - mentoring where appropriate.		
	Exam analysis		
	Grade predictions are based on research		
Student voice-based decisions	Student voice, unspecified (3)	10	
	The school uses school council to inform part of its marking policy.		
	Introduction of elected student council		
	Use of i-pads to consult students		
	Staff INSET booked to challenge G&T students following student Survey of students for use of new building voice/data analysis		
	KS3 pupil feedback on ICT use inside and outside of school		
Teacher training and professional development	School responds on INSET days to areas research has shown staff need training in (2)	9	
	Teaching and Learning training, unspecified (2)		
	Learning Communities research carried out by Dylan Wiliam - we piloted these.		
	The use of post-learning conversations when coaching/mentoring trainee teachers		
	Learning walks		
	We have TLC sessions that are focussed on using Evidence-based Practice. All staff are involved in these sessions.		
	Whole-school CPD with (name) School partnership Schools. To give subject specific Departments time to see, discuss and evaluate Teaching and Learning practice.		
Structural and procedural changes	Lesson length change	8	
	Teacher Training Days - INSET days teacher training days		
	a Study of the link between travel times and academic outcomes has influenced our admissions policy.		
	Shortened key stage 3		
	Transition at Ks4 to KS5		
	Decisions to merge into partnerships and such like. Apparently for the better of the students		
	New Cover Instructions		
	Staffing and timetable considerations based on needs of pupils		

Curriculum Changes	Extra-curricular options based on pupil feedback	6
	The Wolf report has led to changes in the structure of vocational learning for 2012.	
	Data collected informs structure and development of ITT course we run	
	Research on curriculum reform, unspecified	
	I was involved in a Curriculum Reform working group, researching how we could develop our provision of courses in 6th form. I investigated the Cambridge Pre-U and International Baccalaureate. My findings led to the Pre-U 'Global Perspectives' course being adopted.	
	Changes to year nine curriculum, the schemes of work for science.	
Use of technology	Development of interactive ICT using school VLE (2)	4
	ICT skills audit - Applied Learning sets are conducted as a result as is department training	
	KS3 pupil feedback on ICT use inside and outside of school	
Consulting parents	Parent surveys (2) Parent consultation meetings. (2)	4
Physical or resource decisions	Acoustic improvements in school (2)	3
	Survey of students for use of new building	

Appendix 17: Examples of Research-informed decisions at Barnfield School

- The Sutton Trust found that students benefit from intensive support. [school] have placed Learning Support Teachers in bottom sets Y8, 9 and 10 classes to provide this targeted intensive support to students.
- The Wolf report has led to changes in the structure of vocational learning for 2012.
- Assessment for learning
- The RAP is based on research about emerging students' needs and the importance of certain teaching strategies such as setting homework, independent study, incorporation of SEAL and PLTS into lessons etc.
- Learning walks   (2)
- Using teaching techniques to engage different types of learners
- Some of the tutor time research I carried out was used to help the pastoral leader develop tutor activities.
- Assessment within PE Department. Masters research to develop.
- Staff INSET booked to challenge G&T students following student voice/data analysis
- Student voice (3)
- Team teaching between English/SEN based on Coaching model
- Research that I undertook as part of my EPD course has drastically changed the manner in which the Drama department look at Gifted and Talented provision as well as how Key Stage 3 is assessed - linked to much stronger SOW.
- School responds on INSET days to areas research has shown staff need training in (2)
- ICT skills audit - Applied Learning sets are conducted as a result as is department training
- Greater use of effort grades at KS3
- Maths teaching is based on some of the findings from OFSTED reports on outstanding maths teaching
- Vertical tutoring - research was used to inform decision that the college was not ready for that system yet.
- Data collected informs structure and development of ITT course we run

Appendix 18: Contributions to external research-related partnerships, networks, events or publications – Trinity Green:

- *I have been involved in research with the Science Learning Centre and Institute of Physics - which has been published. At present some research with the Science Learning Centre and Southampton university is being published that I carried out and wrote*
- *Work with Institute of Physics regarding uptake and motivation of girls in 16+ Physics - contributing and published. Also collaborated with East of England Science Learning Centre (University of Hertfordshire).*
- *Primary schools in local area*
- *I was involved in the Thinking Schools R and D which involved a network of schools, secondary and primary*
- *The [county] project on school acoustics has lead to changes in building specifications for schools within [county] and nationally (three times)*
- *International Conference on Acoustics, Sweden. International conference for architects and acousticians, Westminster*
- *Have presented at Pupil Voice national conference*
- *Outreach through ASTs and a member of my dept presented her work at a conference*
- *SSAT*
- *A book on the topic of pupil voice*
- *Many members of staff have presented at educational seminars/events etc*
- *I know SMT have presented at conferences but i don't know details*
- *IOE i think but not sure*
- *NCSL, TLA, Various Conferences - pupil voice*
- *A book about the Research-engaged School (twice)*
- *IoE - CPD case study*

Appendix 19: Interview schedule – semi-structured interview prompts:

Questions for teachers who have done/are doing some research at the school:

How long have you worked here? What do you teach?

What is it like to work at this school?

Why did you decide to undertake some research?

Tell me about the research you are doing/have done

What have you/the school/ learned as a result of the research?
What were the outcomes of this research for your students/other staff/SMT etc?

How interested were other members of staff/SMT in your research? How was this manifested?

How does your research fit into the wider staff development and decision making practices at the school?

Is there a culture of questioning and challenging practices at this school? Expand…

Is there a culture of innovation at this school? Expand…

Are professional learning opportunities afforded to anyone at the school? Expand…

Who takes the lead on school changes/reforms/inquiry? Only SMT? Are other members of staff given the chance to lead on such matters?

Is there a vision/ethos about student learning at the school? What is it? To what extent is it shared among staff?

Questions for teachers who have not engaged in research:

How long have you worked here? What do you teach?

What is it like to work at this school?

How do you learn and develop as a teacher?

Have you come across others at the school who have carried out research? What do you know about what they did/why they did it/what was achieved? Is this something you'd like to do yourself? What would determine whether you decided to undertake some research?

Are you aware of any decisions that have been informed by research at the school?

Is there a place for research (reading it or carrying it out) in your work as a teacher or in the operation of the school? If so, what is it? If not, why not?

How much are you encouraged at this school to develop professionally?

Are professional learning opportunities afforded to anyone at the school?

Is there a culture of questioning and challenging practices at this school? Expand….

Is there a culture of innovation at this school? Expand…

Who takes the lead on school changes/reforms/inquiry? Only SMT? Are other members of staff given the chance to lead on such matters?

Is there a vision/ethos about student learning at the school? What is it? To what extent is it shared among staff?

Questions for SMT, especially involved in coordinating research:

How long have you worked here? What are your main responsibilities at the school? (ask for full job title)

What is it like to work at this school?

Why is the school engaging with research?

How did this engagement with research come to be as it is today?

How has it evolved/developed?

What is your understanding of 'research'? How is this passed on? Training? Framework for engaging in research?

Which factors have been important in spreading (starting to spread) engagement in research throughout the school?

What is the role of research at the school?

Who takes the lead on school changes/reforms/inquiry? Only SMT? Are other members of staff given the chance to lead on such matters?

Is there a culture of questioning and challenging practices at this school? Expand….

Is there a culture of innovation at this school? Expand…

Who takes the lead on school changes/reforms/inquiry? Only SMT? Are other members of staff given the chance to lead on such matters?

How much collaborative learning goes on here among staff? Can you give examples?

Is there a vision/ethos about student learning at the school? What is it? To what extent is it shared among staff?

Appendix 20: The legacy of Dewey: From Laboratory schools to Professional Development Schools in the USA, to Teaching schools in England

Dewey's Laboratory School: a site of professional collaborative enquiry and experimentation. A failed attempt at system-wide reform?

The idea that schools should have close links with educational research is not new. The seeds for this were sewn as early as the late 1880s in the USA when John Dewey established the Chicago Laboratory School (Camp Mayhew and Camp Edwards, 1936). This school, situated on the campus, was seen as a 'laboratory' of the departments of Psychology, Philosophy and Pedagogy of the University of Chicago where Dewey was the Head of Department. Guided by the philosophy of Dewey, the freedom of the child to 'act' was seen as paramount, and learning a by-product of this action, and in the context of social interactions (Dewey and Small, 1897). Rather like school programmes in the 1970s in England by Lawrence Stenhouse (Hopkins and Rudduck, 1985), the curriculum itself was created through experimentation and research; the school and classroom were viewed as laboratories. Dewey spoke of the need for the curriculum to provide active experiential education and bemoaned traditional classrooms that tended to view learning as a narrow cognitive and intellectual construct, separate from its connection to the social (Dewey, 2004).

The laboratory school was extraordinarily progressive for its day. Indeed, its space to create a curriculum that was fluid and responded to the needs of the pupils allowed a degree of freedom for both students and staff that would be hard to imagine in most modern school settings. In the laboratory school, the curriculum was seen as the intervention and teaching activities are described as experiments. This approach to education meant that children were the actors and teachers observed and studied the responses of children to their strategies. The authors of "The Dewey School", also teachers at the same school, outline this approach:

"Those planning the activities must see each child as an ever changing person, both because of what he undertakes and undergoes in his social group, and

because of the changing needs of the succeeding stages of his development."
(Camp Mayhew and Camp Edwards, 1936, p. 22).

Experimentation on learning was conducted within the school, informed by emerging theories of pedagogy at the University of Chicago. This stance on teaching through enquiry, research and experimentation; and learning as a process of social construction, overlapped with theories derived from Vygotsky in Russia (Glassman, 2001) and strongly influenced later writers such as Schon (1983), when he spoke about the need for professionals to engage in reflective practice.

The "Dewey School" displayed many of the characteristics of what might nowadays be described as a professional learning community (e.g.Cibulka and Nakayama, 2000; Hord, 2008; Stoll, 2010) and teachers engaged in what might be described as JPD (Fielding and Britain, 2005); weekly meetings were held in which minute details of individual child's learning were openly discussed, often with parents in attendance. Teachers were encouraged by Dewey to reflect on commonalities in the experience of learning and the nature of knowledge being gained by students in the classroom activities that teachers set up. Learning was collaborative and ideas were openly debated in an environment that was challenging; teachers were encouraged to resist settling for conventional approaches to pedagogy. Teachers, as well as students, were expected to embrace cooperation rather than competition or isolation in their practice. Cooperative social organization among teachers was also seen as a pre-requisite of the type of social community that Dewey wanted to create for pupils (Tanner, 1997, p. 96). As former teachers at the school elaborate:

> *"Cooperative social organization applied to the teaching body of the school as well as to the pupils. Indeed, it could not apply to the latter unless it had first taken effect with the former. Association and exchange among teachers was our substitute for what is called supervision, critic teaching, and technical training. In spite of all defects and mistakes, whether due to external or internal conditions, experience and reflection have convinced me that this principle is fundamental in school organization and administration. There is no substitute for it, and the tendency to magnify the authority of the superintendent, principal, or director is both the cause and the effect of the failure of our schools to direct their work on the basis of cooperative social organization of teachers. The latter method makes unnecessary the grading and judging of teachers by the devices often used. It soon becomes evident under conditions of genuine cooperation whether a given person has the required flexibility and capacity of*

growth. Those who did not were eliminated because of the demonstration that they did not 'belong' " (Camp Mayhew and Camp Edwards, 1936, p. 371).

Dewey believed in the role of the Principal (Head teacher) as being one who enables 'intellectual organisation'. Thus teachers were autonomous to the extent that they could make their own decisions on materials and approaches to use with their students. Despite Dewey's fame, those working at the school noted the extent to which he allowed and respected a free-ranging and open discussion about pedagogical experimentation; teachers' ideas were given equal standing to (if not greater than) his own. However, there was a hard edge to the peer review and open professional discussion such that it was seen as a way of weeding out bad practice through a tacit form of pressure to conform to the collaborative culture. Dewey felt that school practices would only advance significantly when primary school teachers were afforded the same degree of autonomy and worked in the same cooperative manner as those in higher education. He emphasised the importance of the formal leader in providing a framework in which teachers could innovate and work collegiately to promote effective learning. Dewey was keen to promote a system of administration in which the processes and structures supported the deep individual and collaborative learning of teachers. Unlike much modern discourse that separates out professional learning from curriculum development, Dewey disapproved of any disconnection between teachers' knowledge and the actions and consequences of these on pupils (Tanner, 1997, p. 103). The model of professional learning promoted by Dewey is remarkably similar to Hattie's (2015) espousal of a professionalism underpinned by 'collaborative expertise' in which teachers need to have expert knowledge of the collective impact of their work on their students, including through detailed evaluation and research in schools.

The Laboratory School followed Dewey's philosophical position of Pragmatism. The Pragmatist school arose from the thinking of Dewey along with others such as Charles Sanders Pierce, Jane Addams and William James (Biesta and Burbules, 2003). While critics of Dewey have cited his promotion of 'progressive' education, much of his stance to innovative pedagogy can be seen as a reaction to the climate of education at the time and the impoverished methods of rote learning that he felt permeated much of school practice (Rorty, 1999). The pragmatist movement in general, had strong ideas about education as a

movement for social good, for educating the working classes and in understanding the context in which children were educated, and related to the accumulation of new knowledge (Addams and Seigfried, 2002). From the perspective of pragmatist thinkers such as James, the role of 'science' to elucidate the job of teachers was not one of prescription based on conclusive guides to action, as he points out from the perspective of his own expertise:

> *"Psychology is a science, and teaching is an art: and sciences never generate arts directly out of themselves. An intermediary inventive mind must make the application, by using its originality"* (William, 2009).

The pragmatic epistemological stance penetrated every aspect of the work of the school (at least in principle):

- The purpose of schools as providing active experience and growth (Dewey and Small, 1897)
- A curriculum and pedagogy that capitalised on the child's innate capacities for growth and learning (psychology) and linked them to the social context (sociology) in a way that allows for an unknowable potential for growth in a democratic society (Dewey, 2004)
- The extent to which ideas arose from an open and free discussion and debate, and created conditions for pupils to grow, determined their truth and utility in Dewey's conception of education (see Rorty, 1999, p. 4)
- Thus, knowledge and truth were to be found in context, education was seen as a process of living (Biesta, 2007; Biesta and Burbules, 2003; Dewey and Small, 1897) and schools were not simply preparation for later 'life'

As such, research activity occurred within a paradigm in which, *"For Dewey and the teachers, the daily testing of ideas was central to this philosophy laboratory, as according to pragmatism ideas become valid as they are translated into action and then evaluated"* (Durst, 2010a, p. 64). Research engagement in the Dewey school was not about providing 'truths' that could be implemented by teachers in a technical-rational sense (Schön, 1983), rather it suggested forms of action and ways of evaluating these actions.

Teachers at the school, in addition to the requirement to learn about scientific methods of enquiry were also able to publish research in educational journals. These articles were not confined to describing new approaches to classroom techniques but also grappled with some of the big philosophical ideas that the school was working on at the time. Classroom ideas were tested out in ways mirrored by contemporary Lesson Study methods (e.g. Heong, 2012), often with

'crowds' of visitors and then later discussed with colleagues and re-tested (Durst, 2010a, p. 66). Weekly teacher reports are illustrative of the approach that Dewey and others at the pioneering school were trying to develop. Despite having orthodox subject titles, English, History, Mathematics etc., the nature of the reports was very different. These provided data about pupils' responses to the curriculum and teaching approaches. They were detailed descriptive accounts, focusing on learning in its social context (Tanner, 1997, p. 67).

Ella Flagg Young, the 'supervisor of instruction' at the school, was the torchbearer of teachers' intellectual freedom in the school. She was keen for the school to model the ideal of democracy as she saw it, rather than mirroring the hierarchies inherent in aristocratic society. Leadership was distributed throughout the school and teachers were empowered to make changes to policy and the curriculum through formally established Teachers Councils (Durst, 2005, p. 970).

While Dewey's influence on the school was no doubt strengthened by his burgeoning reputation as a scholar, his own influence on the day-to-day running of the school was much less. Many of the practicalities were left to Ella Flagg Young and later to his own wife, who became the Principal and other notable female teachers and school staff, who had to translate Dewey's vision of an innovative school into reality (Durst, 2010b). Indeed, the experiments with project-based, inter-disciplinary learning were seen to be taking the curriculum too far from the basic demands of direct instruction of subject content and skills (Katch, 1990).

The Laboratory School programme expanded over the coming decades, reaching its pinnacle in the 1960s, when there were over 200 such schools across the USA (Hausfather, 2001). Despite this promising start, however, the Laboratory School model declined throughout the next few decades, falling to around 100 in the early 1990s (ibid, 2001). A short-lived proposal for 'Portal Schools' emerged in the 1970s in the US, whose mission was to educate new teachers, provide a research-site for universities and to test out new practices in curriculum development, teaching and learning. These schools were set up with joint appointments between universities and schools and the allocation of time for joint development and implementation of initiatives. A lack of funding, proper

evaluation and policy discontinuity led to their demise in the early 1980s (Winitzky, Stoddart and O'Keefe, 1992).

The laboratory school movement can thus be seen as, at best, a partially successful attempt at creating a system-wide movement of research-engaged schools. The decline in numbers of laboratory schools since the 1960s was due to a number of factors, including: the increase in fee-paying status to offset funding difficulties; the tendency to be used as places for university faculty-members' children (thereby becoming unrepresentative of the wider population); expectations by parents of a 'traditional curriculum' in opposition to the innovative, experimental approach of the Laboratory School and increasing demands to train teachers in public schools that exceeded the capacity of Laboratory schools to fulfil (Hausfather, 2001, p. 34). The Laboratory school movement, while taking its teacher training role seriously, frequently saw the responsibility to be at the forefront of experimental innovation and research, as secondary. Indeed, it has been argued that most Laboratory schools took up the label in name only (Tanner, 1997, p. 18). The importance of understanding the wider systemic features within which schools exist and 'serve' their communities and their dependence on the national policy climate, cannot be underestimated. Any future attempt at expanding innovative, research-informed schools would need to be well funded and supported at local and national government level if it were to succeed.

Despite the failure to consistently enact Dewey's vision, either in the original school or at scale, a number of key areas remain influential when thinking about a contemporary research-engaged school movement. For such an idea to work would require several elements, including leadership that allows for collaborative learning among teaching staff; and strong engagement from a university in a way that does not detract from teachers learning from and in their own context. Dewey also stressed that teacher development should be strongly linked to its effect on students' learning and experiences; a point that has received strong contemporary support (Timperley *et al.*, 2007). However, for such schools to survive and flourish, they also need highly effective day-to-day management. There is also a strong caveat here about being 'innovative'; while schools could learn about curriculum and pedagogy, they also needed to be mindful that they were not eschewing established and effective practices. Thus, learning and

development through research engagement should be incremental and well-managed. Scaling up such an approach, as well as needing political support and funding, also requires significant capacity building - among school leaders, who need to 'lead (professional as well as student) learning' in their schools; and among teachers, who need the skills of enquiry and research literacy as well as being highly skilled in the 'basic' competencies of their trade. The powerful legacy of Dewey and pragmatism in the context of the research-engaged school is the creation of practical epistemology, one that is able to explain, without overstating, the potential role of research-based knowledge in professional practice (Biesta, 2007; Biesta, 2010b) and also one that unites teacher learning with an understanding of what learning (and education) might mean for students and wider society (Dewey, 2004; Dewey and Small, 1897).

Professional Development Schools. A nation-wide attempt to connect the work of universities and schools through school-based teacher development, research and school improvement

The modern successor to the Laboratory School in the US is the Professional Development School (PDS). These were formally established in 1990 in the Holmes Report (Hausfather, 2001), however the label PDS is not always tightly defined, often 'self-designated' or defined simply by virtue of the nature of its work, such as in teaching development or partnership with a university (Teitel, 1998). PDSs can be viewed as having arisen from: attempts by universities and schools to bridge the research-practice divide; school reforms that favoured clinical approaches to teacher preparation (alignment with the idea of Teaching Hospitals); large scale funding of such schools by foundations such as Ford and Exxon; the desire to bring university and schools closer together in teacher education programmes and to further professionalise teaching (teachers and leaders involved in the creation of a knowledge-base for the teaching profession) (Teitel, 1998).

These PDSs were (to become) sites in which new understandings about pedagogy were to be shared between university and school practitioners, in mutual dialogue. The 1990 Holmes Group report showed a significant shift away

from early rhetoric about creating a 'science of education' and for schools to be 'sites of experimentation'. This new discourse appeared to accept a complex interaction between the work of practitioners and researchers, coming together from separate cultures of practice, to create new knowledge. However, while the PDS challenged the exclusivity of the university as a location for creating knowledge for the advancement of education, the new role for the university in this environment remained unclear (Winitzky, Stoddart and O'Keefe, 1992). Thus, the PDSs have evolved, creating a meaning for themselves over time.

Key principles underpinning PDSs were:

- Meaningful teaching practices should be encouraged (not just drilling and memorisation)
- All students should be engaged in learning, not just those of the dominant culture (inclusivity)
- Schools should be democratic communities (for teachers and students)
- Practitioners should engage in, and model (to their students) lifelong learning and development
- Reflection on practice and research should be commonplace and the knowledge created through enquiry should be more accessible to practitioners than traditional research
- Finally, as a result of the above new institutions should be created with changed organisational structures in both schools and universities.

(Winitzky, Stoddart and O'Keefe, 1992)

With time, PDSs have sought to make tangible a growing identity. This has included the establishment of a National Association for Professional Development Schools (NAPDS) launched at the March 2005 PDS National Conference. NAPDS now publishes a nationally refereed journal, *School-University Partnerships,* as a vehicle for sharing a quantitative and qualitative database to support and disseminate the work of PDSs (Brindley, Lessen and Field, 2008). The NAPDS provided a forum for establishing nine es*sentials* of PDS work. Of these, the first five establish the philosophical underpinnings of PDS work, while the last four describe some of the practical and infrastructure requirements of PDS relationships. To summarise, the first five are:

1. A broad educational responsibility including a commitment to increase equity in schools and the wider educational community.
2. A school-university culture committed to the preparation of future educators.
3. Ongoing and reciprocal professional development for all participants.

4. A shared commitment to innovative and reflective practice.
5. Engagement in and public sharing of the results of deliberate investigations of practice by respective participants.

In order to achieve this PDS partnerships would need:

6. Formally articulate roles and responsibilities of all involved.
7. A structure that allows all participants a forum for ongoing governance, reflection, and collaboration.
8. The creation of formal roles across institutional settings.
9. Dedicated and shared resources and formal rewards and recognition structures.

(in Brindley, Lessen and Field, 2008, p. 72-74)

The formal establishment of PDS essentials was seen as necessary to counter the perception that many schools were being counted as PDSs despite the existence of wide variations in the extent to which aspects of such a role were being fulfilled. Clear articulation of the principles of 'authentic PDSs' while helpful, still do not guarantee either capacity or purposeful intention from this wide range of settings.

Regarding the 'state of play' for research in PDS settings Ross et al (1999, p. 219) reported that:

- There was little evidence of a strong research agenda in PDSs.
- The majority of research was conducted by a small number of staff in each PDS.
- This research was generally small scale and difficult to generalise.
- One of the key PDS aims, to increase equity in the education system, was very under-researched.
- Research that focused on the impact on students' learning was less than that which focused on changes in teaching practice.
- Since PDSs were meant to embrace more enquiry and constructivist types of learning in lessons, the often-used standardised examination results were ineffective outcome measures.

It is unclear whether PDSs have adequately addressed the lessons learned from the Laboratory schools movement, especially the need to, "*establish support systems that specifically give time and training for the complex roles involved in interacting with multiple stakeholders*" (Hausfather, 2001, p. 36).

Early interviews with school leaders, teachers and university staff involved in PDS partnerships concluded that the relationship worked well when there was

sufficient time for both school and the university staff to engage in the large amount of communication needed to nurture the relationship (Bullough, 1997). They concluded that this was often not helped by the lack of incentive structures that would allow considerable time for a university researcher to engage in work with schools or the existence of formal researching roles among teachers in the school (Bullough, 1997, p. 50). Linda Darling-Hammond (1994, p. 1) focused on the 'potential' of PDSs to, "*allow school and university educators to engage jointly in research and rethinking of practice, thus creating and opportunity for the profession to expand its knowledge base by putting research into practice – and practice into research.*" However, she also bemoaned the lack of *"incentive structures of both organisations"* (ibid, p. 22) for PDS work that might enable this aim to be achieved. Spelling out this issue, Ross et al (1999, p. 212-215) describe the three barriers of: Time, Rewards and Resources.

1. Time: Both sides (university and school) expected to engage in research activity alongside other commitments with no adjustments being afforded.
2. Rewards: Teachers found rewards in improving the situation for their children; the danger in PDS collaboration is that it took time away from that. For researchers, individual initiative in scholarship was often the most rewarded, which did not encourage the type of collaboration needed for successful research engagement.
3. Resources: PDS largely had no permanent funding and depended on grants; equally schools of education underestimated the extent to which school partnership work would require additional resources.

In addition to the above structural barriers, the authors also pointed to psychological and ideological barriers, including fear of change and different conceptions of time and work between universities and schools. In some cases, mutual mistrust interfered with effective collaboration. If schools were to move towards authentic, collaborative environments – often far removed from the reality of many classrooms – this would take time and need to be changed incrementally. So, while effective research, of the kind that leads to systemic school improvement, was possible, this would require: i) professional development directed specifically towards improving student learning and, ii) importantly, for considerable policy support to help overcome the time, rewards and resources issues (ibid, 1999, p. 219).

One suggestion that emerges from research into PDS partnerships is the need for a new conception of research that takes into account the different perceptions

of school and university staff. In a study of a six-year PDS 'research triangle' Galassi et al (2001) surveyed a wide range of university, school and district stakeholders and explored their perceptions of school-based research. On the one hand, both school and university based staff: felt rushed to get through the research process; valued generalizable knowledge about how to most effectively teach students; tended to under-emphasise theoretical research; and held a traditional view about what 'proper research' consisted of. The last view tended to change more often in the course of the PDS research among school staff but was more resistant among the higher education people involved. In addition, both university and teaching staff identified similar challenges of time, the need for support staff, funding, and the importance of understanding each other's working environments. The need for prior research experience/training by all parties and for the identification of a common research agenda was also stressed among participants. On the other hand, some differences in mentality were observed between school and university staff, the latter having a reflective, research mentality and the former having a 'let's do it' attitude in which research was sometimes considered a selfish diversion from the main task of teaching their students. Researchers emphasised data-based decision-making more strongly than school staff. Teachers derived satisfaction from improved teaching, student achievement, curriculum and professional skills while university staff derived satisfaction from publication. Finally, teachers often viewed their own role in research as passive compared to the active role that researchers expected to have.

Such findings suggest a need for a shift in conceptual understanding about the type and nature of research in PDS settings. University staff would need to understand school cultures more and teaching staff would need to have more time to take part and reflect and also to see the impact of the research. Research would need to address issues of key concern to school staff and time would be needed for successful research initiatives to develop.

Finally, given the expanded role of these schools compared to non-PDS counterparts in the public school system, standards for accountability arguably need to reflect this reality. In 2001, The National Council for the Accreditation of Teacher Education (NCATE) developed five PDS standards: 1) Learning

community, 2) Accountability and quality assurance, 3) Collaboration, 4) Diversity and equity, and 5) Structures, resources and roles (Trachtman, 2007). The central role of enquiry in PDS work was recognised in the development of the standards; in order to combine quality assurance and enquiry three principles were adopted:

1. *"Engage in assessment to transform day-to-day teaching and learning practices*
2. *Inquire (sic) collaboratively to determine what works best (or does not) for students.*
3. *Conduct inquiry on the effects of the PDS on teaching and learning."* (Trachtman, 2007, p. 199)

The second NCATE standard is concerned with ensuring internal accountability through a self-evaluation process. The focus on enquiry can thus be seen partly to aid the process of data gathering and analysis. Unlike the more narrow data-based decision-making, however, the use of a wide range of sources of evidence, generated through the internal, localised production of knowledge, potentially allows a more nuanced and authentic form of self-evaluation and quality assurance. Partnerships with other schools or with HE institutions can also help validate and 'peer review' judgements about quality against agreed standards.

The lessons of Laboratory Schools and Professional Development Schools in the USA, have inspired the creation of similar models in several other countries, notably in the Netherlands and in England, with the latter creating National Teaching Schools. Therefore it is important to distil the lessons learned from these cases to the English context. One of the important changes in the historical context of contemporary PDSs is the imposition of an accountability system that relies on narrow data-driven outcomes. This new context cannot be ignored. PDSs thus needed to be clear about their own new expanded role and interestingly, research engagement potentially provides a way for such schools to set their own agenda, taking up their own enquires and evaluating the outcomes of their actions on their own terms. The extent to which they have been able to do so has also been constrained by significant structural and cultural differences between the work of school practitioners and research staff, mainly from universities, who approach research activity in very different ways. What the PDS example has shown is that the type of intellectual freedom and cooperative professional endeavour that the laboratory school aimed for has become even

more difficult in the current performativity and accountability climate. Where funding has been available, it has not always been directed in such ways that allows for productive joint work that respects the purposes of the research while allowing for the worlds of research and practice to come together effectively.

National Teaching Schools. Failing to learn from Professional Development Schools and Laboratory schools?

In the first year of research for this thesis (2011), approximately 100 National Teaching Schools were set-up in the initial cohort, shortly into the new coalition government (Conservative/Liberal Democrat). Although few specific references have been made in policy or academic literature, Teaching Schools, in my view, have several very clear parallels with Professional Development Schools in the USA (see **Table 15** for summary).

Table 15 Similarities Shared by Professional Development Schools and Teaching Schools

Historical Origins:	• Inspired in part by Dewey's laboratory schools movement. • Both inspired by idea of Teaching Hospitals: "centres of educational excellence" (Matthews and Berwick, 2013, p. 10) and places for the vocational development of teachers and educators (like doctors and health care professionals).
Research into practice:	• Promotion of 'research and innovation' and enquiry focus to professional development. • Commitment to collaborative enquiry.
Expanded role in the system:	• Systemic responsibilities for reform. • The development of educators.
Accountability environment:	• Operating in an environment that stresses school autonomy and high stakes accountability (Ofsted and school choice in England, NCLB legislation and data-driven accountability in the USA).

PDS and Teaching Schools share a number of features in terms of their implicit or explicit link to Dewey's laboratory school movement and a stated commitment to bringing research and practice together in order to improve outcomes for learners (Matthews and Berwick, 2013; Teitel, 1998). They also both operate in

external accountability frameworks that do not take into account an expanded, systemic role. Both PDSs and Teaching Schools are meant to have a formal link with universities. The former though, is more likely to be formalised in terms of an ongoing partnership (Brindley, Lessen and Field, 2008); the legacy of the laboratory schools' movement is stronger in this sense. Research activity is also more likely to be generated from within the university, with the school as the site in which experimentation occurs. PDS-University partnerships are also more focused on funding and reward models across institutions that allow for sustainable collaborative research (Teitel, 1998, p. 53). The locus of activity for Teaching Schools is also more explicitly the network of TSAs, with the Teaching School as first among equals (Matthews and Berwick, 2013). That said, both PDS and Teaching Schools clearly work with universities on specific research-based activities and also collaboratively with other schools. Therefore, such differences are most likely a matter of emphasis. Also, as already mentioned above, the challenge of harmonising rewards systems and the structure of time needed to collaborate in research activity, has been an ongoing challenge in PDS-University partnerships (e.g. Darling-Hammond, 1994; Ross *et al.*, 1999; Teitel, 1998). Perhaps the most distinct difference is that Teaching schools have a more explicit school to school improvement function (de Botton, Hare and Humphreys, 2012; Matthews and Berwick, 2013). This includes the identification and development of systems leaders who help by working with other schools and school leaders to drive up improvements beyond the school.

Both PDS and Teaching Schools have been influenced by the laboratory schools movement; in the case of PDSs, this is well-documented in a number of articles and reviews of literature (e.g. Brindley, Lessen and Field, 2008; Hausfather, 2001; Schwartz and Gerlach, 2011; Teitel, 1998). In the case of Teaching Schools, the Head Teacher of a prototype school, Raven's Wood, clearly references laboratory schools (Matthews and Berwick, 2013), as does the 2010 coalition government Bill, the Importance of Teaching (DfE, 2010). However, the Holmes Group, in formally setting out a case for PDSs, distanced these from the Laboratory Schools movement that preceded it (Teitel, 1998, p. 36). In this sense, the severing of links with past philosophical and academic traditions of school-based, teacher-research has occurred in both countries. In England, neither the policy document, 'The Importance of Teaching' (2010) nor key National College

articles (NCSL, 2011) make a single reference to the work of Stenhouse, or indeed other recent developments in England that have attempted to bridge research and practice in schools (see Chapter 2b, below).

A number of reasons may explain the lack of referencing to previous researching-schools initiatives. One may be political. To link Teaching Schools to initiatives that emphasised professional empowerment and emancipation, such as the Collaborative Action Research Movement and the work of Lawrence Stenhouse (see Chapter 2b, below) may risk creating a counter-narrative to present neoliberal policies that stress parental choice, accountability and competition. Indeed, in both PDS and Teaching Schools there has been an attempt to provide a more flexible response to teacher training in relation to demand, through greater 'on the job' professional learning. This links to a view of the teaching profession that sees craft knowledge occupying primary importance and the role of research as entirely separate (Winch, Oancea and Orchard, 2013). Within this view, teachers need not learn to reflect critically on research, or be involved in its production, rather their role is to work out ways to implement the empirical findings, as 'executive technicians' (ibid, 2013, p. 6).

Whatever the reasons for a reluctance to draw inferences from previous reforms, initiatives and movements, one consequence is a collective lack of cumulative learning that builds on these lessons of the past.

To an extent, the Teaching School model had been applied before in England, when the Labour Government introduced 'Training Schools' in September 2000, as set out in the Green Paper "Meeting the challenge of change" (from Beardsworth and Lee, 2004, p. 362) This saw hundreds of successful schools being funded to take on a greater role in Initial Teacher Training (ITT), especially through new training routes such as the Graduate Teaching Programme (GTP). The purpose of the programme was *"to develop and disseminate good practice in initial teacher training (ITT), train mentors and undertake relevant research"* (Ofsted, 2003). As this initiative progressed, many such schools (including Trinity Green School in this sample) developed a greater R&D role. Around a quarter of Training Schools received modest funding to conduct and disseminate research into effective models of teacher training. Other schools supported individual teacher research through Master's programmes or through the Best Practice

Research Scholarships (see Furlong and Salisbury, 2005 for an evaluation of this programme). The Ofsted (2003, p. 10) report concluded that "*Involvement in research activities of this kind generally raised the profile of staff development, both for new and experienced teachers, and encouraged them to think more deeply about what facilitates effective teaching and learning*". The same report identified research dissemination as a particular weakness and recommended greater use of the national network of training schools for this purpose.

The National Teaching Schools programme replaced this initiative, with a role more clearly-defined and wide-reaching than its predecessor's. The National College for Teaching and School Leadership (re-named in April 2013, after merging with the Teaching Agency) set out the so-called 'Big Six' objectives for Teaching Schools, which are to:

1. Lead the development of a school-led initial teacher training (ITT) system, either through School Direct or by securing accreditation as an ITT provider
2. Lead peer-to-peer professional and leadership development (continuing professional development)
3. Identify and develop leadership potential (succession planning and talent management)
4. Provide support for other schools
5. Designate and broker Specialist Leaders in Education
6. Engage in research and development activity (NCTSL, 2014)

The remit of Teaching Schools is ambitious and challenging. Joining a network overseen by the NCSL they need to be "*outstanding schools led by outstanding head teachers (National Leaders of Education), which have a track record in improving pupil outcomes through supporting other schools.*" (DfE, 2010, p. 23).

In order to be eligible for Teaching School designation, schools need to demonstrate "*clear evidence of strong engagement in school-based practitioner-led research and support for teachers gaining academic and professional awards*"[28].

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[28] The Teaching Schools Prospectus, http://www.nationalcollege.org.uk/docinfo?id=146256&filename=teaching-schools-prospectus.pdf

Those successful in achieving designation are expected to:

- "*show evidence of engagement in research and development which reflects agreed priorities, builds on existing external research/evidence, and contributes towards the alliance's overall priorities*
- *ensure that new initiatives within the alliance are based on existing evidence and include a rigorous evaluative focus, drawing on external expertise*
- *demonstrate an ability to work with other teaching schools on research and development activities as part of regional or national networks where appropriate*
- *ensure that existing evidence can be accessed and used by staff and that appropriate staff have the time and support needed to undertake research and development activities*
- *effectively disseminate learning from research and development work across the alliance and the wider school system*" (NCTSL, 2014)

The elements of a research-engaged school will be discussed in greater detail below, however there are a number of similarities with the above list, in particular, supporting staff engagement in research and engaging with existing evidence and expertise. The research-engaged school's outward looking focus is very strongly encouraged in the Teaching School responsibility to 'disseminate' R&D work across not only the alliance but the school system as a whole. This ambitious idea sees the schools as agents and catalysts in knowledge mobilisation and in having a role in building a cumulative research knowledge base. Whether such a reality is likely in an environment where cooperation exists hand in hand with vigorous competition between schools is a moot point. Husbands (2014) points to the example of Chile and its highly autonomous schooling structure as an example of how schools working alone are unlikely to be able to mobilise such knowledge effectively across the system. Other writers (e.g. Caldwell and Spinks, 2013b) see new incentives and possibilities for successful cooperation and view the school 'unit' as potentially able to change 'despite' ('unchained from') the system itself.

Where the research-engaged school (see ch.2b, below) idea differs to the Teaching School notion of Research and Development (R&D), is in the latter's greater focus on the Alliance as the locus of activity, rather than the school itself. This raises rather different questions about the nature of engagement that might support such cross-alliance research engagement. The focus of research or enquiry work, through JPD (NCSL, 2012) underpins the aim to improve 'practice' (as opposed to 'schools' or 'teachers') through reciprocal learning, including the

lead school learning from others in the Alliance. Handling relationships in cooperative R&D activities is often crucial within JPD activities, where cross-school 'politics' and the perception that the lead school is in a position of great power/prestige may apply. Building a high level of trust is seen by some as an essential environment for effective collaboration (e.g. Coleman, 2012; Kochanek, 2005) and this applies strongly to Teaching School networking.

While the R&D activity should occur across the alliance, the Teaching School is encouraged to take a leading role in shaping this. Although there has been an increase in research activity among TSAs, this aspect has been the lowest priority strand among the 'Big Six' for many Teaching Schools (Gu, 2014). This supported my own finding that the level of experience and preparedness for research activity among the first cohort of Teaching Schools in the sample was variable.

The NCTSL website[29] attempts to guide school leaders further in this respect, suggesting ways that Teaching Schools can get involved in R&D:

- *"undertaking research and development projects within their alliance to identify and/or help tackle key school improvement priorities*
- *participation in the national Closing the Gap: Test and Learn scheme designed to test school and classroom interventions with groups of schools that make a positive difference in closing the attainment gap*
- *networking with other teaching school leaders, enabling the dissemination of learning from research including attendance at the research and development annual conference in November and participation in an online forum."*

The focus of the research activity in Teaching Schools is clearly intended to be closely matched to the school's development priorities and build upon previous evidence. Although this sounds perfectly reasonable, and sits well alongside the notion of the school as a learning organisation, this also suggests a bias towards a particular kind of research approach and a particular notion of 'evidence'. Thus, 'exploratory' or 'blue-skies' research is not specifically mentioned. Equally, action research often stems from a response to a practical problem faced by a teacher in his/her own practice, rather than from looking at previously-published work.

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[29] http://www.education.gov.uk/nationalcollege/index/support-for-schools/teachingschools/teachingschools-programme-details/teachingschools-research-and-development.htm

Moreover, such research may not be aiming to build on an existing body of work, rather as a reflective mode of response to an immediate problem of practice.

The research-engaged school movement clearly references work by Lawrence Stenhouse, who suggested a critical engagement with research often conducted at small scale by teacher-researchers. By contrast, under the coalition government, since 2010, large-scale quantitative approaches to research have been especially valued, particularly Randomised Controlled Trials (RCTs) (e.g. Goldacre, 2013).

Where some qualitative research may be concerned with exploring an issue or building theoretical concepts, RCTs are focused on seeing educational interventions as 'treatments' in a 'what works' mode of enquiry. This may steer Teaching Schools towards a limited research discourse, which sets certain types of evidence as outside of what is considered 'useful'. Alternatively, many practitioners may see what they do as not constituting 'research' at all, rather a form of 'enquiry'; 'proper research' may be deemed as outside the scope of teachers and schools and best left to universities and researchers. This relationship between research-based evidence and practice, has important consequences for the long-term shape of teaching practice and ideas about the profession.

A further tension within Teaching Schools has been the place that research should take among its priorities. As already mentioned, these schools have had to implement radical changes to school-based teacher training, leadership development and support for struggling schools in their area alongside their researching remit. Although some have built on an existing culture of research engagement (e.g. Bubb, 2009), having R&D on a list of six priorities may create the impression that this is just one (additional) strand of activity that the school engages in, rather than being something that underpins all else. According to one evaluation, there is increasing reason to believe that Teaching Schools are seeing research engagement as underpinning all else, i.e. taking a research-informed stance on school development and decision-making at every level, thus leaving a 'Big Five' (Gu, 2014).

Some of the TSAs had been able to apply for specific additional funding to take part in NCTLS research around three themes. By the 2013/14 academic year, the third cohort of Teaching Schools had joined, adding 153 schools to the existing 210, to make a total number of 363 schools (Stephens, 2014), of these:

> "*99 teaching schools alliances have participated in one of the three national research and development themes projects which will report in 2014:*
>
> - *what makes great pedagogy?*
> - *what makes great professional development which leads to consistently great pedagogy?*
> - *how can leaders lead successful teaching school alliances which enable the development of consistently great pedagogy?*"(NCTSL, 2014)

These projects have helped initiate Teaching School involvement in R&D but further activity is likely to be strongly dependent on gaining access to funding for specific, time-constrained projects.

The need to balance out the wider aims of Teaching Schools while measuring up to high-stakes (and narrow) external accountability mirrors the situation with PDSs.

In England, the dual challenges of remaining 'Outstanding' according to external (Ofsted) inspections and developing innovative practices, are redolent of Hargreaves and Hopkins' important distinction between a school's maintenance and development activities (Hargreaves and Hopkins, 2005). The mentality of school leaders and practitioners is thus one that needs to try out new ideas in order to improve practice; including taking risks; while at the same time remembering the basics of an effective school, in particular benchmarked student attainment data. One Head Teacher at a 2014 National Conference in London about Teaching Schools[30] remarked that, while it was good to collaborate with other schools, to innovate and to engage in wider systemic responsibilities tasks of Teaching Schools, she advised other Headteachers to, "*always look over your shoulder*" and "*remember the key areas on which the school is judged*"(anonymous headteacher). Such contradictions are reflected strongly in interviews conducted with school practitioners involved in the case study schools (see Chapters 7a-e).

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[30] https://www.belmas.org.uk/Latest-News/teaching-schools-conference-11th-march-2014

In the case of PDSs, their focus on research and enquiry has been seen as taking an important function of balancing internal and external measures of accountability (Rallis and MacMullen, 2000b). The NCATE standards sought to address the restrictive data-driven accountability in the US system (Trachtman, 2007) and collaborative research can be seen as a form of peer-reviewed self-evaluation. At present, the National College, while having a role in quality-assuring the work of Teaching Schools (EGFL, 2011) has no established framework for doing so. Teaching School work is therefore in danger of being seen as an additional and (however, difficult and time consuming) 'peripheral' function of the school, the core of which is assessed externally in an environment of high-stakes accountability.

A further challenge to the sustainability of Teaching School activities lies within the funding model. With core funding set at £60,000 for the school in year one, decreasing to £50,000 in year two and £40,000 in year three and subsequent years, the ability to substantially free up teachers to engage in research and other non-teaching activities remains limited. Substantial past research points to lack of time and funding being key inhibitors of school-based practitioner research (e.g.Cordingley, 2002; Cordingley, 2008; Cordingley, 2011; Everton, Galton and Pell, 2000; Everton, Galton and Pell, 2002; NTRP, 2011; Rickinson, 2005). In the long term, the school will also need to build up its own income generation by charging for some of its services. This also raises the question about whether Teaching Schools (and hence their research activities) are going to be working toward the public good or whether they are going to be self-serving, self-promoting 'market traders' (Husbands, 2014).

Appendix 21: Initial coding notes

Coding notes for second sweep of the interview data:

People's own stories – including how they have come to teach and what they like/dislike and what and how they have learned as a teacher

 Vignettes:
Such as Lauren at tB, talking about the ALS vs her Masters – what is research, what is development/professional learning?) and
Carl at Tr, Mode 2 knowledge/defining research (in relation to TLA, Masters and development groups in the school)
Lee: encouraged to be a reflective practicner – tla research where he reflected on how to mobilise resources to get things done! He is also a good example of how research makes actions more systematic (also of teacher leadership).
Sasha: How the school is taking its own, organic approach to developing an understanding of thinking school. (Tr)

Descriptions of how research among staff leads to enquiry learning among students (see Madelyn script at Tr).

Look for mention of work with external partners:

e.g. consultants (Patrick at Tr)
other organisations, e.g. TLA

Evidence of a shared professional language:

Eg. Patrick's description of learning ethos at Tr
Sasha's Thinking school (Tr)

Definitions of research (one node with sub nodes coming off)
Advantages of labelling activity as 'research'
The overall 'framework' for research (e.g. TLA (at Tr) or the ALS model at school TB

The ethos of the school (including Christian in case of TA)
The culture of the school in terms of the students and parents (e.g. ofsted, PLTS, ECM) , see senior leaders interviews especially.

Examples of how schools set their own agenda in general – e.g. Sasha's description of how school Tr took longer to get the thinking school status as they wanted to develop it in their own way, not the Exeter university prescribed way.

Overall vision for the school:

Including vision for how students should develop/learn (e.g. Sasha at Tr, the description of the thinking school

Leadership:

Ideas about leadership in the school
Comment about leaders in the school
Leading by example – lead learners

Objectives of the school:

External vs internally generated agendas (e.g. ECM and PLTS agendas at TA(see Neal))
meeting ofsted grades vs internally generated ideas (split-personality of school – one that pleases ofsted..is it possible to also have another enduring ethos or ideas about teaching and learning not purely driven by results?)
The types of comments about ethos

Comments on professionalism:

Ways that teachers are trained (GTP practice heavy, vs PGCE more theory – see Jade, TB)

Teachers describing how they go about their jobs, how they try to teach

Ideas about teaching in general (e.g. Rhys at school TA comparing teachers to doctors and lawyers).

E.g. 'Neal's conversation with the observer who 'trots out a line from a govt document about a three part lesson

Comments on the 'type' of teachers you get at the school (e.g. TA 'nearly half are career changers' – see Neal).

How people relate to each other (the community):
How new staff become socialised in to the school
Patterns of interaction (cross-school, inter-departmental) – i.e. within school knowledge mobilisation
How professional development sessions structure patterns of dialogue (e.g. action learning sets)
Ways in which decisions get passed on (upwards for example).
Professional development opportunities – are they open to all? How are they promoted?
Individual differences in grasping opportunities for professional development

How the person leading the research takes up leadership and goes beyond the confines of their normal role. (e.g. Paul talking about the infrastructure needed for ipad use at the school).

How other people get to read/find out about published research

How learning is defined (and what roles research plays in this)
How innovative is the school?
What is given as an example of innovation?

What kind of practices can be challenged?
Sharing of practice (see Katherine in TB)

Attitudes towards research and the role of research in teaching as a profession:
Motivations for engaging in research (including the way the school context 'makes' some teachers research (see lauren, school TB)
Opinions about specific pieces of published research
The usefulness of engaging with published research
Applying research to the local, school context
How much negotiation with SMT or freedom that teachers have in formulating own ideas for research and how much is defined by school SMT or targets

Examples of artefacts from research activity:
Reports that are written up – what form they take, what audience they get

Division of labour:
e.g. learning walks open to all, not just SLT
How hierarchical the management/leadership structure is
How the innovative ideas/changes are initiated and how they are 'controlled' or supervised.
Differences in attitudes between people depending on their job role in the school

'Spaces for learning':
e.g. the new building at school TB for teacher development

Techniques for learning:
Using videos in lessons
Learning walks
Encouragement to reflect
Three part lesson (GTP
Leading by example

How published research is:

 Manipulated (e.g. by slt before passing on)
Used
What form it takes, such as newspaper, Govt report

Connections between school and the 'outside world':

Professional networks, e.g. SENJIT (school TB, Faith)

The effects of research:

How research encourages collegiality
The discourse of research
How the findings/ changes brought about by research, are received by staff

The objectives of research:

Different people wanting different things out of a research project, e.g. Judy in school C, who talks about how she favours nurture group approach to the 'achievement group'.

Outside influences on the school:
e.g. changes to the curriculum imposed by Govt (see BTEC changes etc at TA (Louise)
The effects of becoming an Academy or Teaching School
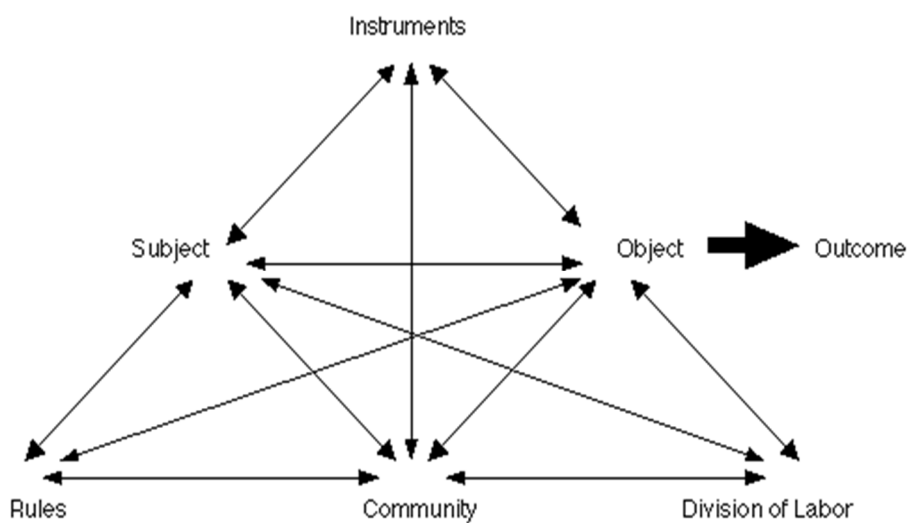
Also- tensions produced by teacher training routes (short-termism of TF etc – see Professional Capital) and also potential insularity of school-based 'grown your own' ideas.