

**UNDERSTANDING RESEARCH ENGAGEMENT IN ENGLAND'S
EVIDENCE-INFORMED TEACHING PROFESSION: A '3D' VIEW**

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Declaration

I declare that no portion of the work referred to in the thesis has been submitted in support of an application for another degree or qualification of this or any other university or other institute of learning.

Abstract

This thesis reports on a mixed-methods study into understanding the role of research engagement in the teaching profession. There is currently a focus upon ‘an evidence-informed teaching profession’ in documentation from England’s Department for Education (DfE, 2016) and as a teacher, the author was interested in the perspectives of teaching practitioners themselves.

By addressing the following research questions, a more comprehensive understanding of the perceptions, practices and potential of research engagement was formed:

- a) How do different teaching practitioners in a variety of settings perceive research engagement?
- b) How may socio-cultural factors in schools influence practices of research engagement?
- c) What potential worth does research engagement have for teaching and learning?

Each question was addressed using a range of research approaches to achieve a holistic understanding of teachers’ research engagement. Findings from a survey (n=109), semi-structured interviews (n=6) and case studies (n=3) formed a three-dimensional view of research engagement in the teaching profession by illuminating the phenomenon from different angles. The survey established the breadth of evidence-informed teaching, whilst the interviews and case studies added depth to the understanding. Adding a further dimension, a user-focused evaluation, revealed the ‘reach’ that research engagement could have in the teaching profession.

To present the findings, Carr and Kemmis’ (1986) conceptualisation of the critical teacher was adapted to take into account the different forms of research engagement that became apparent during the study: reflective practice, passively using findings from research, critically engaging with research and conducting one’s own research. A new way of theorising these research activities has been created and are presented collectively as a spectrum, rather than a scale with reflective practice at one end and research conduct at the other extreme. This thesis concludes that an evidence-informed teaching profession can be inclusive of all, or even just some, of the above.

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Table of Contents

Declaration	2
Abstract	3
Acknowledgements	4
Table of Contents	5
List of Figures	10
List of Tables.....	11
List of abbreviations	12
Chapter One: Introductions.....	13
1.1 Policy Context	13
1.2 Rationale.....	13
1.3 Definitions	15
Chapter Two: Review of Literature.....	21
2.1 Theoretical Perspectives on Research Engagement.....	21
2.1.1 Interpretations of Stenhouseian teacher research	22
2.1.2 Five views of teacher professionalism via research engagement	25
2.1.3 Teacher reflections as research	27
2.1.4 Teachers using research.....	30
2.1.5 Teachers engaging with research	35
2.1.6 Teachers engaging in research.....	37
2.1.7 Engaging with and in research.....	46
2.1.8 Theoretical framework	48
2.2 Research Engagement in Policy	50
2.2.1 Re-searching	53
2.2.2 Engaging findings from research	54
2.2.3 Engaging with research	57

2.2.4 Engaging in research	59
2.2.5 Summary of research engagement in policy.....	64
2.3 Research Engagement in Practice.....	66
2.3.1 <i>Re</i> -searching.....	66
2.3.2 Teachers engaging findings from research.....	68
2.3.3 Engaging with research	72
2.3.4 Engaging in research	75
2.3.5 Combinations of research engagement.....	82
2.3.6 Summary of research engagement in practice	91
2.4 Concluding thoughts	92
Chapter Three: Methodology	95
3.1 Axiology, Ontology and Epistemology	95
3.2 Research Methods Linked to Questions.....	96
3.3 Mixed methodology	98
3.4 First Dimension: breadth.....	100
3.4.1 Survey.....	100
3.5 Second Dimension: depth.....	109
3.5.1 Semi-structured Interviews.....	110
3.5.2 Case study using ethnographic methods	113
3.5.3 Case study using mixed methods	118
3.6 Third Dimension: ‘reach’	123
3.6.1 User-focused evaluative case study	123
3.7 Ethical Considerations	129
3.7.1 Phase One: survey and interviews	129
3.7.2 Phase Two: case studies	131
3.8 Summary of Methodology.....	133
Chapter Four: Findings and Analysis	135

4.1 Survey and Interviews.....	135
4.1.1 Research participants and their contexts	136
4.1.2 Teacher re-searching	147
4.1.3 Engaging findings from research	150
4.1.4 Engaging with research	159
4.1.5 Engaging in research	163
4.1.6 Conclusion	184
4.2 Ethnographic Case Study	184
4.2.1 Teachers Re-searching	188
4.2.2 Engaging Findings from Research	193
4.2.3 Engaging with Research	200
4.2.4 Engaging in Research.....	207
4.2.5 Concluding thoughts	222
4.3 Mixed-methods Case Study.....	223
4.3.1 Re-searching	226
4.3.2 Engaging findings from research	227
4.3.3 Engaging with research	232
4.3.4 Engaging in research	240
4.3.5 Concluding thoughts	244
4.4 Evaluative Case Study	245
4.4.1 Research engagement practices	247
4.4.2 Perceptions of participants.....	250
4.4.3 The potential of Lesson Study for research engagement	254
4.4.4 Conclusions from phase three.....	267
Chapter 5: Discussion.....	271
5.1 Perceptions	271
5.1.1 Teachers' Views about Forms of knowledge	272

5.1.2 Forms of research engagement	277
5.1.3 Concluding thoughts	282
5.2 Practices	283
5.2.1 School Infrastructure	284
5.2.2 Wider Networks	290
5.2.3 Individual Teachers	293
5.2.4 Concluding thoughts	295
5.3 Potential.....	296
5.3.1 Teaching and Learning.....	297
5.3.2 Process rather than product.....	299
5.3.3 Outcomes for individuals	301
5.3.4 Concluding thoughts	303
Chapter 6: Conclusion	306
6.1 Original Contribution to Knowledge	306
6.2 Recommendations.....	309
6.2.1 Teachers.....	310
6.2.2 Academics	310
6.2.3 Policy-makers	312
6.3 Reflexive Account of Limitations.....	313
6.4 Future developments.....	316
References.....	317
Appendices.....	341
Appendix 1a: Email to gatekeepers	341
Appendix 1b: Letter to gatekeepers.....	342
Appendix 2: Survey Pilot Outcomes	343
Appendix 3: Survey Questions.....	344

Appendix 4a: participant information sheet and consent form (semi-structured interview).....	351
Appendix 4b: interview schedule	354
Appendix 5a: gatekeeper information sheet and consent form (ethnography)	356
Appendix 5b: participant information sheet (ethnographic case study)	358
Appendix 6a: gatekeeper information sheet and consent form (mixed-methods case study).....	360
Appendix 6b: evaluative survey for mixed-methods case study	363
Appendix 7a: participant information sheet and consent form (evaluative case study).....	366
Appendix 7b: parental consent/ assent forms (evaluative case study)	368
Appendix 8: photograph of SRS’s Research Library	370

List of Figures

Figure 1: research engagement in models of professionalism	26
Figure 2 : Carr and Kemmis (1986) re-conceptualised	49
Figure 3: the research process	98
Figure 4: 3D Research Marsden, 2020	99
Figure 5: stacked bar chart of role and length of service.....	137
Figure 6: pie chart displaying ITE programmes of participants	139
Figure 7: stacked bar chart of research collaborations in geographic locations	140
Figure 8: stacked bar chart of ‘Teaching Schools’ in each sector.....	142
Figure 9: stacked bar chart of research facilitation according to deprivation index .	143
Figure 10: stacked bar chart of school type and school prioritisation as a barrier....	144
Figure 11: clustered bar chart of students rating training in accessing research.....	153
Figure 12: clustered bar chart of students rating training in applying findings from research.....	154
Figure 13: clustered bar chart of students rating training in assessing research	162
Figure 14: bar chart of how beneficial research is for performance management....	172
Figure 15: variations of Research Engagement	185
Figure 16: research engagement process	187
Figure 17: reflection as re-searching	192
Figure 18: research cycle highlighting findings from school research being re- deployed	197
Figure 19: engaging in research before engaging with research	204
Figure 20: theory of change	270
Figure 21: the over-lapping enablers and constraints of research engagement	295
Figure 22: a product of research engagement being research engagement	304
Figure 23: Carr and Kemmis (1986) re-conceptualised	308
Figure 24: Practices and Potentials of Research Engagement Marsden, 2020	309

List of Tables

Table 1: combinations of research engagement in practice	89
Table 2: research objectives and how they are addressed	97
Table 3: justifications for survey questions	102
Table 4: statements in Question 11	104
Table 5: statements in Question 12	105
Table 6: statements in Question 16	106
Table 7: the numbers of participants from different sections by job role.....	108
Table 8: interview themes justified	110
Table 9: demographics of respondents to Question 18.....	112
Table 10: use of Guskey’s first two levels of PD evaluation.....	119
Table 11: Guskey’s upper levels of PD evaluation	120
Table 12: evaluation methods	126
Table 13: mean ranking of research practices by importance.....	146
Table 14: mean scores of research engagement in ITE	156
Table 15: how each research question is addressed	246
Table 16: methods used to evaluate aspirational outcomes	253

List of abbreviations

AR	Action research
BERA	British Educational Research Association
CCT	Chartered College of Teaching
CPD	Continuing Professional Development
DfE	Department for Education
EBT	evidence-based teaching
ECF	Early Career Framework
ECT	Early Career Teacher
EEF	Education Endowment Foundation
EYFS	Early Years Foundation Stage
FSM	Free School Meals
HE	Higher Education
INSET	IN-Service Training
ITE	Initial Teacher Education
JPD	Joint Practice Development
KMb	Knowledge Mobilisation
LA	Local Authority
LS	Lesson Study
MAC	Multi-academy Chain
MAT	Multi-academy Trust
NCTL	National College of Teaching and Leadership
NQT	Newly Qualified Teacher
Ofsted	Office for Standards in Education
PD	Professional Development
PGCE	Post-graduate Certificate of Education
PGDE	Post-graduate Diploma of Education
PP	Pupil Premium
R&D	Research and Development
RCT	randomised controlled trial
RiS	Researchers in Schools
RL	Research Lead
RS	Research School
SCITT	School-centred Initial Teacher Training
SD	School Direct
SEND	Special Educational Needs and Disabilities
SLE	Specialist Leader of Education
SLT	Senior Leadership Team
TA	Teaching Assistant
TDT	Training and Development Agency
TLR	Teaching and Learning responsibility
TS	Teaching School
TSA	Teaching School Alliance
TTA	Teacher Training Agency

Chapter One: Introductions

This thesis begins with introductions in the plural: an introduction to the researcher, which is necessary when outlining the professional and personal motivation for this doctoral study, and an introduction to the research, including definitions of ‘research engagement’ and other key phrases that the reader may find helpful. First, an outline of the policy context of England alluded to in the title of this thesis is explained, followed by the rationale for the research topic and the mixed-methods design chosen to understand this from three angles, making it three dimensional.

1.1 Policy Context

The purpose of this research is to understand how research engagement in the teaching profession may align with the Department for Education’s intention for an ‘evidence-informed teaching profession’ (DfE, March 2016, p.37). If the view is taken that evidence originates from some form of research, being informed by evidence must require teachers to engage with research on some level. There is no mention of this in the Teachers’ Standards (DfE, 2011), however, and in initial teacher education (ITE), there has been a move from preparing new teachers to access, assess and apply evidence from research (NCTL, October 2015) to the more passive activity of staying up-to-date with educational research (NCTL, 2017). If teachers are not pro-active in their research engagement, how can they be part of a ‘profession’ as opposed to an occupation? Linking research engagement with a sense of professionalism is, therefore, also a focus of this research.

1.2 Rationale

The policy context is explained in more detail in 2.2 below; for now, it is necessary to acquaint the reader with the researcher as ‘no research occurs in a vacuum’ (Punch and Oancea, 2014, p.41) and researchers ‘quarantining’ (Thomas and James, 2006, p.781) themselves is inappropriate in the constructivist paradigm. It is appropriate here, then, to switch to a first-person narrative of my experiences as a teacher-researcher, as I will

periodically do throughout the thesis when appropriate. This reflexive account positions my inquiry transparently (Fielding, 2012) and exposes the inevitable ‘biases’ that requires all researchers ‘to be suspicious of ourselves’ (Frankham, 2013, p.5). This account begins, therefore, with an explanation of my background as a teacher-cum-researcher.

During my teaching career of seven years, the first notion I had of being a teacher-researcher was during my Post-graduate Diploma of Education (PGDE) in Scotland, in which I was required to construct a research proposal for a potential project once qualified. The intention was for those awarded with a merit or distinction in this course to add to the masters-level (M-level) credits already achieved via a Master’s of Education (MEd) within their first five years of their teaching career. I enrolled in this part-time MEd in my fifth year of teaching, by which time I was teaching English full time at a secondary school in the North-West of England. To attain the M-level credits needed for the full Master’s, I conducted my own research project within my workplace. An opportunity for a doctoral scholarship then presented itself, requiring me to pause my teaching career to become a researcher. Alongside this role, I have worked in ITE but have now returned to teaching, in a sixth-form college, and am also a governor of a primary school.

Research engagement became part of my professional life but I was cognisant that being ‘evidence informed’ was understood differently by colleagues so wanted a fuller exploration of what this could mean for my profession. My experience of research engagement in my first school in Scotland was more about using existing research, which was different to the practices of my next school, which was a designated ‘Teaching School’ (TS) in England, with a remit for research and development (DfE, 2010). Colleagues there were using evidence from their own research but without an ethical framework for research, as I had from the university where I was completing my MEd. The importance of examining the perceptions of what research engagement means in teaching and the practices of teaching practitioners was highlighted by Godfrey (2016), who proposed that research-engaged schools are a phenomenon set to expand in England over the coming years, therefore are of considerable interest to the research community. More than this, it is important for practising teachers to know how research engagement can be perceived and practised, as well as being presented with some of the potential outcomes of incorporating these into their workplace. According to Musset (2010) it is teachers’ perceptions of the impact of continuing training activities that influence their participation in them so if teachers know what the impact of

research engagement can be, they can make an informed decision as to what might be the best research approach for them to take, if any.

Understanding the perceptions and practices of research engagement, therefore, became the aims of my doctoral research, but I was also interested in the potential impact that these have upon the individual teacher and the profession of teaching more generally. For me personally, researching as part of my MEd motivated me to introduce the subject of Classics (which I am also qualified to teach) as an extra-curricular class, with the intention of examining the impact upon disadvantaged young people as social justice has a personal significance for me. Being research engaged, however, led to me pausing my teaching career due to receiving a PhD scholarship, thus possibly having a negative impact upon the teaching profession, which is already seeing teachers leaving the profession (Higgins, 2016). It is important, therefore, to evaluate the possible effects of teaching being evidence informed, which are not just the obvious outcomes of improved teaching and learning. What is significant about this study is that it is conducted by a teacher-turned-researcher who values the role of participating teachers not just as subjects in an investigation but as co-constructors of knowledge. This perspective has enabled an original contribution to the knowledge base in the form of a spectrum of research activities, of which there are many definitions, outlined next.

1.3 Definitions

It is important to offer some explanation as to what research engagement in the teaching profession might mean, though it must be emphasised that no definitive version was used during the research process and the conceptual framework that was eventually used (Fig. 1 below) was built around the emerging definitions found in situ. It was important not to impose an ontology upon the participants as disparate definitions of ‘research’ were encountered by Hammersley-Fletcher et al. (2015) in their study involving respondents’ understanding of, what they called, evidence-based teaching (EBT). The participants did not define ‘research’ as the team (made up of academic researchers) understood it. This was in relation to teachers using the research of others, which was what I first experienced as a student teacher, so will be explored first.

Godfrey (2016, p.310) has speculated that there are two ways that teachers use research, which he defines as ‘evidence-based practice’ and ‘research-informed practice’, with the former implying that teachers’ judgement is ignored. Passively engaging findings *from* research is, therefore, defined next. Creswell (2012) referred to teachers as ‘consumers’ and ‘producers’ of research and this was echoed in the BERA-RSA (2014) inquiry, which was particularly influential in this doctorate. It recommended that all teachers should have the research literacy to engage *with* research as discerning consumers, as well as there being opportunities for some to engage *in* research, which is the next facet of research engagement to be defined in this section.

The dual nature of research engagement can be seen also in Kushner et al.’s (2001) evaluation of the School Based Research Consortia Initiative commissioned from 1997 to 2000 by the now defunct Teacher Training Agency (TTA). This programme established consortia, each consisting of schools, a local authority (LA) and a university, with the intention of helping teachers to engage with existing research, collaborate on research proposals for further research and collate quantitative data on pupil attainment for further analysis. Again, this was an informative study for this doctorate as it was ‘an analysis of the strategies and infrastructures that supported or were needed to support teachers engaging (in programme terms) ‘in’ and ‘with’ research’ (ibid. p.2). Engagement in and with research were interpreted by the authors as:

- a) Discussing existing research;
- b) Teachers conducting their own research;
- c) Discussing their results with colleagues;
- d) Formalised reflections;
- e) Contributing to research proposals, such as identification of focus; and,
- f) Working with school colleagues and university academics who were doing research.

The first three activities have already been covered here but teachers reflecting upon their practice as a form of research engagement has not yet been touched upon, so will be the next definition to be described. Finally, teachers involved in the research *of* others will be explored, whether that is in the facilitation of research or as a research participant. ‘Research’

is, therefore, referred to throughout this thesis in conjunction with the prepositions ‘with’, ‘from’, ‘in’ and ‘of’, sometimes italicised to highlight these contrasting practices.

Engaging with research

Engaging with research implies that teachers, as consumers of existing evidence, actively critique research rather than being passive in basing their practice upon strategies from an evidence base. According to Godfrey (2016), this embodies all three Aristotelian types of knowledge: scientific, craft and practical (i.e. scientific research, tacit knowledge that one builds up as a teacher and the knowledge that a teacher has of their particular workplace). Teachers engaging with research, therefore, assess the relevance of existing research to their own context as opposed to applying findings from research as a panacea. This emphasis upon teachers being informed by research instead of basing their practice upon evidence is reflected in the evolution of nomenclature used in literature from ‘research-based teaching’, used by the pioneer in research engagement in the teaching profession, Stenhouse (1981). The suffix ‘-based’ has become synonymous with the passive use of research, whereas ‘-informed’ is used to refer to teachers judiciously engaging with research.

Lingard and Renshaw (2010) deconstructed the phrase ‘evidence-based’, pointedly changing ‘evidence’ to ‘research’ and ‘based’ to ‘informed’ and this semantic change was also made in empirical studies. During the School Based Research Consortia Initiative, the phrase ‘evidence-based’ was recast as ‘evidence-informed’ (Kushner et al., 2001) because evidence-based practice implies that there is a ‘best’ way to teach that will only be revealed through research (Simons, 2003). Another influential text, referred to throughout this thesis is Coldwell et al.’s (2017) evaluation of ‘practice that is influenced by robust research evidence’ (ibid., p.5) for the Department for Education (DfE). Whilst this phrasing implies that teachers should passively engage findings from research, they go on to refer to ‘engaging with research evidence’ (ibid.), explaining that their initial use of ‘evidence-based’ was changed to ‘evidence-informed’ as this is what most participants used. This was also thought to be more accurate in the portrayal of teaching as a profession in which practitioners critique evidence with their own contexts in mind rather than teachers passively basing their practice upon research findings. Some teachers they studied, however, did focus upon implementation of evidence-based strategies, as explained next.

Engaging evidence from research

Instead of using the phrase ‘evidence/ research based’, the verb ‘engage’ is paired with the preposition ‘from’ to demarcate the difference between engaging *with* research and its more passive counterpart – engaging findings *from* research. This may involve teachers relying upon evidence from randomised controlled trials (RCTs), systematic reviews, meta-analyses and experimental design interventions (Simons, 2003), as recommended by government via their Evidence Endowment Foundation (EEF). This is an online platform that presents teachers with evidence-based strategies to narrow the gap in attainment between children from disadvantaged backgrounds and their more affluent counterparts.

It is worth noting here that there appears to be more of a focus upon teachers as passive recipients of research in England in comparison to Scotland. For example, the process of becoming a teacher in Scotland is known as initial teacher *education*, which implies a broad education informed by research (Beauchamp, Clarke, Hulme and Murray, 2013). Similarly, in the Republic of Ireland, those embarking upon a teaching career are involved in initial teacher *education* but a review concluded that there were discrepancies in how providers understood the role of research, concluding that the Finnish model of student teachers learning about educational research from researchers should be followed (Department of Education and Skills, 2012). This is in contrast to the ‘initial teacher training’ (Carter, 2015) offered in England, which places emphasis upon training new teachers to apply findings from research (NCTL, 2017). Carter (2015), in his independent review of initial teacher training (ITT) for the DfE, was critical of student teachers taking an active role in research engagement, particularly engaging *in* their own research, as defined next.

Engaging in research

Simons et al. (2003) found that many teachers believed it was necessary to engage *in* research if using the findings from research were to be meaningful, which led them to advocate ‘practice-based evidence’ as an alternative to ‘evidence-based practice’. Similarly, Lingard and Renshaw (2010, p.27) ‘reject a model of teachers as simply translators or interpreters of educational research done elsewhere’, believing that ‘they are, can and ought to be researchers too’, calling for a ‘researcherly’ disposition through initial and continuing education. This can take various forms, which Godfrey (2016) has placed on a continuum of ‘enquiry’ at one end,

where teachers experiment and reflect, polarised by more formal ‘research’ which is more academic and systematic. Cochran-Smith and Lytle (2009) refer to ‘*inquiry as stance*’, an Americanism which will be known as ‘*enquiry*’ in British English. Kushner et al. (2001) described teachers’ data collection as collegial observations, sometimes using recordings and sometimes triangulated with pupil lesson logs and teacher diaries.

These activities are not obviously research-related, being more akin to the regular continuing professional development (CPD) of teachers, but when conceptualising research engagement, ‘it is a question of epistemology and what kind of knowledge counts as evidence’ (Simons, 2004, p.413) and as these practices do create evidence they can be included as a form of research engagement. Rea et al. (2015a, p.93) described teacher-researchers as ‘pedagogical explorers’ who were trying something out and testing whether their innovations had been successful. Whilst not collecting data in a systematic way, conclusions are still being made by teachers via their reflections upon their practice.

Finally, research engagement can involve teachers being involved in the research of others, sometimes as collaborators and often as participants. Goswami and Stillman (1987) used the notion of ‘big R’ research to illustrate that formal research in which teachers are merely participants cannot provide directions for the teaching profession as teachers need to be more involved in the generation of this knowledge. Researchers need teachers’ knowledge to answer ‘why’ questions and to illuminate the research conducted by external others. The School Based Research Consortia Initiative sought to rectify this by pairing teachers with research mentors from higher education (HE), similar to more recent NCTL (2014; 2015) projects with National Teaching Schools. These are high-performing schools with research and development (R&D) as a focus so inevitably became an important focus for this doctoral study.

Research Questions and Design

Influenced by Guba and Lincoln (1989), rather than revealing a definitive ‘truth’ about the phenomenon of research engagement within the English policy context, this thesis presents what some school teachers see as ‘research engagement’. It is a ‘three-dimensional’ view of teachers’ perceptions and practices as well as the potential that their disparate forms of research engagement are thought to have upon their profession. The following research questions were constructed to illuminate these three ‘Ps’:

- a) How do teaching practitioners in a variety of settings *perceive* research engagement?
- b) How can socio-cultural factors in schools influence *practices* of research engagement?
- c) What *potential* worth can research engagement have for teaching and learning?

For this holistic understanding, a mixed methodology was employed that included:

- a) a survey (n=109);
- b) semi-structured interviews (n=6); and,
- c) case studies (n=3), each with a different approach (ethnographic, mixed-methods and evaluative).

The survey provided a breadth of perceptions and practices, whilst the interviews and case studies added depth. Although all research methods revealed the perceived worth (Lincoln and Guba, 1980) of research engagement, the final evaluative case study evidenced the impact according to criteria set by evidence-informed teachers themselves. In this way, a third dimension, presenting the ‘reach’ that research engagement can have, completes this three-dimensional study. This innovative methodology is explained in more detail after a chapter on the literature of research engagement, which culminates in an adapted theoretical framework used throughout the thesis.

The findings of each study are presented according to the phase in which they were conducted; therefore the survey and semi-structured interviews are analysed together, followed by each case study. In the discussion chapter, all studies are brought together to address each research question more comprehensively, before conclusions are drawn in the final chapter and recommendations are made to teachers, academics and policy-makers.

Chapter Two: Review of Literature

The review of literature will begin by exploring theoretical perspectives relating to research engagement in the teaching profession, followed by an analysis of educational policies that facilitate these practices, and will end with a review of studies that examine research engagement in practice. In the first section, the philosophical thinking and conceptual models related to research engagement are presented. This first section culminates with the presentation of a theoretical model that will be used as a conceptual and analytical framework that will be applied to the thesis as a whole. The next section focuses upon England's policy context and how the ideal of the 'evidence-informed' teaching professional is enabled or constrained by policy. Following the policy review, studies on evidence-informed practice that have been enabled through policy, or enacted in spite of the policy discourse, will provide insights at a 'micro' level. The chapter, therefore, elucidates the ideals of evidence-informed teaching and contrasts these with how these have been realised in practice, either facilitated by policy or not.

2.1 Theoretical Perspectives on Research Engagement

Rather than tracing the origins of research engagement in the teaching profession as others have done (McLaughlin et al., 2008), this review of literature begins by exploring how notions of a 'teacher researcher', first conceptualised in the United Kingdom by Lawrence Stenhouse in the 1970s and 1980s, have been re-cast over the years. Once the geneses of the teacher's active role in conducting research and using findings from research in the Stenhouse tradition have been critiqued, their placing on a continuum of teacher professionalism by Carr and Kemmis (1986) will be presented, followed by a detailed examination of how each element has been theorised over the years. Taken together, a new theoretical framework has been developed that combines the different formations of research engagement with notions of an evidence-informed teaching *profession*, as opposed to teaching as an occupation.

2.1.1 Interpretations of Stenhouseian teacher research

Through researchers collaborating with teachers, Stenhouse's (1975) goal was a 'cross-fertilisation of theory and practice' (Stenhouse, 1975, p.207) but the extent to which this was a mutually beneficial process for academics and practitioners is debatable. Elliott (2009, p.179) has noted that educational research in the 1960s and 1970s 'did not go far enough in building the bridge between theory and practice', only including teachers in research to verify theories about the classroom. Stenhouse's (1972) Humanities Curriculum Project, however, involved teachers in the conduct of the research, which focused upon the teaching of humanities subjects in secondary education before there was a standardised National Curriculum in England. The teachers' role was to provide the research team with quantitative data of pupils' scores following participation in a particular curriculum programme and offer their own perceptions of the impact of taking a particular pedagogical approach to the curriculum offer being researched. Whilst appearing to be inclusive of the practitioner perspective in the generation of theory, the rationale for triangulating these qualitative data with pupil attainment data was actually to give 'a high degree of verisimilitude' (Stenhouse 1975, p.136) rather than any moral obligation to include teachers in the research process as they can still be seen as the researched rather than co-researchers.

What the Humanities Curriculum Project of 1972 did do, though, was include teachers' reflections in the form of case studies, which were more contextualised, allowing teachers elsewhere who read about the research to decide whether the findings would be relevant to their educational setting. This was Stenhouse's (1975) attempt to make research more accessible to the teaching profession, where it can make the most difference. For Stenhouse (1981), making new knowledge available in the form of case studies requires teachers to have a more active role in engaging with research rather than teachers passively engaging (or deploying) the findings of research regardless of research site(s). This notion has continued into the twenty-first century, with Elliott (2001) advocating research collaborations between teachers and researchers to produce case studies that are useful for other teachers to learn from. Stenhouse's (1981, p.110) assertion that 'using research means doing research' also continues to resonate via Elliott (2001, 2009), who perpetuates the ideal of teachers thinking deeply about the contexts behind research, therefore having a more active role as discerning consumers of research.

It may be argued that Stenhouse's original research project may have encouraged teachers to engage *with* research but not *in* their own research with any sense of ownership. However, another interpretation is that what participating teachers in the Humanities Curriculum Project were required to do could be regarded as a form of research involving teachers reflecting upon their practice. In the 1972 project, teachers were asked to tape-record their teaching. In addition to these data being analysed by researchers, it was also suggested that the data could be used by teachers as 'a means of monitoring and reflecting on their own work' (Stenhouse, 1975, p.134). In this way, teachers were actively engaging in research, but almost by proxy as they were gathering data for the researchers, which, as a by-product, could be used by them for their own development.

The potential of these teacher reflections, coupled with the attainment measurements that are already likely to be part of regular pupil assessment (Stenhouse, 1975), was later developed, placing more emphasis upon the teacher as a researcher rather than a research participant. Stenhouse (1983) developed the idea of a role-reversal of teachers employing the researchers to facilitate them with their own research rather than researchers exploiting teachers as experimental subjects. Refuting the claim that a teacher's role as the subject or facilitator of research is exploitative, Hammersley (1993) argued that it is teachers who are actually in a position of power during the research process as the researcher can be refused access at any time. In a later paper, Hammersley (1997, pp.155-6) claimed that it is teachers conducting their own research that can be exploitative as it 'involves extending the accountability of teachers... to justify the details of classroom practice in terms of research evidence'. Teachers researching was not originally intended to be for accountability reasons but for their own professional development (PD), as in Kennedy (2005), and Cochran-Smith and Lytle (2009) have stressed that teacher research should become part of professional practice, critiquing Stenhouse's Humanities Curriculum Project, which was a transitory initiative.

Stenhouseian teacher research has inspired other initiatives that see the research of teachers as useful for others as well as for those teachers involved. Echoing Stenhouse's (1981, p.110) observation that 'the teacher is surrounded by rich research opportunities', Cochran-Smith and Lytle (2009, p.121) agreed that 'every site of professional practice becomes a potential site of inquiry', which may be interesting for others to know about. Cochran-Smith and Lytle (1990) used teachers' unique position in the field to make a case for

the research (or inquiries) of teachers which could be utilised by the academic research community as well as other teachers.

As well as the academic community potentially benefiting from teachers researching, academia has been identified as a facilitating factor for this research, which is not always available to teachers. The synthesis of qualitative data from teacher reflections with quantitative data of pupil progress was espoused by Williamson McDiarmid and Clevenger-Bright (1990, p.148), who recommended discussing these data with researchers to allow teachers to 'step outside of one's practice and examine it'. Williamson McDiarmid and Clevenger-Bright (ibid.) acknowledged that teachers need time and opportunities to develop 'the skills, knowledge, and disposition to collaboratively collect, analyze, and interpret evidence and translate interpretations of evidence into improved learning opportunities'. Throughout Stenhouse's (1981, 1983) work, too, he continued to emphasise the limited time teachers have for what he called 'systematic self-critical inquiry' (Stenhouse, 1981, p.1). From Goswami and Stillman's (1987) point of view, these enablers from academia were not necessary. They equated research with the usual teacher development practices of reflecting on how lessons had been taught and what learning took place, proposing that in this way, teachers could be the new researchers. According to Campbell and McNamara (2010), though, reflective practice and self-evaluation should not be regarded as research unless it meets the Stenhouse requirements of being intentional, systematic and public (Stenhouse, 1985), but this not always possible for teachers without support.

Carr and Kemmis (1986, p.1) called Stenhouse's Humanities Curriculum Project 'pragmatic, uncoordinated and opportunistic' as it relied upon social conditions in a particular context, which will not be possible in all schools. Both Elliott (2001) and Hammersley (2007) realised that it was also unique to a particular point in time when the role of the teacher was more of a facilitator of their students' learning. Thus, the progressive thinking in the classroom mirrored the view of researchers as facilitators and teachers having a more active role.

In an inquiry into the role of research in teacher education by the British Educational Research Association (BERA) and the Royal Society for the Encouragement of Arts, Manufactures and Commerce (RSA), the notion of teachers as 'active agents in research, rather than passive participants' (BERA-RSA, 2014, p.8) that began with Stenhouse has continued to resonate. However, it is Carr and Kemmis' (1986) focus upon the potential for

research engagement to professionalise teaching that is relevant in the understanding of today's 'evidence-informed teaching profession'.

2.1.2 Five views of teacher professionalism via research engagement

Although Carr and Kemmis (1986) were, like Stenhouse, writing about curricular research, their work provides a useful theoretical perspective on research engagement in the present policy context in England. In *Becoming Critical* (1986), they identified five different views of professional competence, depicted in Fig.1, with varying degrees of research engagement required in each. The first is the 'commonsense' view, requiring no research engagement, just intuition developed from experience. This is different to Stenhouse's (1975, p.223) concept of 'self-disciplined intuition', which is more conscious. This can be recognised in Carr and Kemmis' (1986) 'philosophical' view, which is the next conception of teacher professionalism on the continuum and may not involve engagement with published research as it simply requires the teacher to be reflective. Third is the 'applied science' view, focusing upon 'what works' according to the research the teacher has encountered but here the teacher is a passive consumer of research. Taking this further is the 'practical' approach, which combines knowledge gained from research evidence with the previous, contemplative approach, referred to as 'reflecting with purpose' by Carr and Kemmis (1986). Finally, there is the 'critical' view of professionalism, which encourages a dialogue with research. This scale is depicted in Fig. 1 using segments of a whole circle as it is acknowledged that research engagement is only one aspect of teacher professionalism.

Figure 1: research engagement in models of professionalism



Further Perspectives on Teacher Research and Professionalism

The move from reflective practice to more purposeful and critical practices can be seen as a way for teachers to take ownership of their work in a more professional capacity. For Cochran-Smith and Lytle (2009), what makes teaching a professional occupation is when practitioners identify problems and construct new knowledge to meet the challenges they face in a collective inquiry process. From this point of view, teaching may only be considered as a ‘profession’, if those within it actively create new knowledge through research and share this within their communities, though this may still be achieved via reflecting if this is purposeful.

Reflecting with purpose

What makes communities of teachers, collectively, a profession depends upon the extent to which the new knowledge being shared is encouraged to be critiqued. Menter and Hulme (2010, p.109) identified that practitioner research is often seen as a way of moving away from ‘communities of practice’ towards ‘professional learning communities’ in that rather than practitioners sharing reflections with others in their community, teacher-researchers are disseminating new knowledge to be reviewed by their peers. Although Wenger-Trayner and

Wenger-Trayner's (2015) conceptualisation of Communities of Practice emphasises that practitioners themselves are in the best position to create, share and manage the knowledge they need, the criticality needed in a profession is not stressed so this endeavour may be identified as reflecting with purpose. Teachers actively engaging in their own research, on the other hand, has the potential for a critical dialogue, either with other teachers or researchers, or just between the teacher-researcher and existing educational research.

Applied science and dialogue

Each of the elements of Carr and Kemmis' (1986) continuum do not have to occur in isolation. For example, the term 'Knowledge Mobilisation' (KMb) is used to describe how research organisations seek to make their findings accessible so practitioners can implement strategies to improve outcomes for their pupils, which appears to treat teachers as passively engaging findings from research. There is a sense that in this way 'knowledge is recontextualised (selected, appropriated and transformed) for the teachers at a 'safe distance' by governments who do not enable (or trust) those teachers to develop the capability to recontextualise knowledge for themselves' (Hordern, 2015, p.439). However, Nelson and O'Beirn's (2014) report on KMb, commissioned by the National Foundation for Educational Research (NFER), includes the active participation of practitioners in the development of this knowledge in the first place. They believed that the education system in its entirety could be improved by teachers fully engaging in research, proposing that 'schools, collaborative networks, training providers and professional associations have a role to play here in defining the purpose of teacher-led research and enquiry and supporting best practice' (ibid, p.7). This contemporary view of research engagement clearly includes the 'applied science' model of research engagement but also alludes to a dialogue with research, thus becoming critical, as Carr and Kemmis (1986) conceptualised. Although there are clearly overlapping features of research engagement, for the purposes of this literature review, theorisations of each are explored in turn.

2.1.3 Teacher reflections as research

The first element to be reviewed in the literature, therefore, is teacher reflection as a form of research and this subsection explores this theory. It starts with the preference of teachers' reflections presented as case studies as opposed to educational research being conducted

using RCTs, where children are allocated to an intervention group or a control group to measure the effects of different 'treatments'. There is then the assertion that teachers' everyday reflections, whether or not written up as case studies, is a form of research in itself. Supporters of this theory cite the research tools that are used in reflections as well as the reflective elements that are inherent to forms of practitioner research favoured in the teaching profession.

Goswami and Stillman (1987) advocated the use of case studies of teachers' reflections, which they saw as a form of research. They called for teachers to 'make their own records, collect their own data, and modify their teaching in accordance with what they find' (p.23). Though this might not be considered 'research' due to the absence of critical analysis, by 'looking – and looking again' (Goswami and Stillman, 1987, p.30), teachers can be identified as researching in that they are 're-searching' their own practice.

Calderhead and Gates (1993, p.1) associated reflection with 'inquiry oriented teacher education' and the concept of the 'teacher as researcher'. Teachers are always moving through iterations of trying and refining their practice (Elliott, 2009) but Calderhead and Gates (1993, p. 9) thought these reflections could be more formal, particularly in the formative phase of a teacher's career when 'student teachers need to develop a vocabulary for talking, writing and thinking about practice' as well as 'using other public knowledge such as research evidence'. Linking thoughts of practice to current theory may not be considered 'research' but Campbell et al. (2010, p.10) state that 'the reflective practitioner is by definition a researcher, researching not only their own professional context but, crucially, researching that context as they act within it'. The link between research engagement and self-evaluation is also evident in the BERA-RSA (2014) report.

Acknowledging that the concept of reflective practice is understood in different ways, Fordham (2016) defines it as the use of research tools by teachers to understand their own context to develop their practice further. This contextual knowledge could then become useful public knowledge, usually via partnerships between other schools and universities, citing Lesson Study (LS) as one manifestation of this process. LS involves a group of practitioners collaboratively planning, teaching and reflecting upon a lesson, which is often delivered as a public 'research lesson' for others to observe. This is not considered teacher-research by Fordham (2016), not because teacher reflections are insufficient as research

(Cochran-Smith and Lytle, 2009; Menter, 2016) but because it does not necessarily focus upon curriculum and pedagogy, in the Stenhouseian sense.

Action Research

As well as research tools, such as observation, being used for reflection, tools for reflection also appear in action research (Calderhead and Gates, 1993), which can be seen as a way of teachers reflecting more systematically, though it has also been argued that this need not be considered ‘research’. According to Nolen and Putten (2007), action research (AR) originated from the need for more relevant and practical knowledge in the social sciences and is favoured by practitioner-researchers as it is a practical and systematic method to investigate their own teaching. Critiquing how the intentions of AR have not been fulfilled, Higgins (2016) referred back to debates about what counts as knowledge for use in education and who generates this knowledge. Higgins (2016) saw the rise of AR by teachers as a response to the displacement of practical intelligence by propositional knowledge from research. In this way, teachers feel obliged to label their reflections as ‘action research’ to present their conclusions as more credible, which should not be necessary.

Action research has also been theorised as something more than reflecting upon practice, yet not amounting to what Goswami and Stillman (1987) would refer to as ‘big R research’. For Luttenberg et al. (2017), reflections are an integral part of AR but the cyclical process of reflecting and acting make AR more than just reflective practice. Reflecting can precede AR by providing awareness of practice to change, as well as being part of the lever for change once at the end of an AR cycle. This process is recursive, involving reconsiderations which is why Luttenberg et al.’s (2017) conceptualisation of AR as reflective practice corroborates the notion of ‘re-search’ theorised in this thesis. Action research, like any other research, has a question to answer but it is not concerned with generating data in a technical sense.

What distinguished AR is that it is more about providing a space in which teachers can reflect upon tensions in their teaching (Foreman-Peck and Heilbronn, 2018) rather than producing research outputs. For Foreman-Peck and Heilbronn (2018, p.7), critically reflecting in AR goes beyond ‘thinking back over what happened and how one felt about something’ and requires teachers to question whether the aims of the lesson were met for all pupils, the suitability of materials, the wider contexts that are at play and what might be done differently.

These questions are more useful if discussed with a colleague who has observed the lesson, as in LS. There is more to AR than these reflections, however, as the aim is to address a specific problem, which might not be fully formed until a cycle of investigation has been complete. Merely reflecting might not uncover what the pertinent problem is that needs to be addressed. According to Edwards and Brunton (1993, p.157) AR allows practitioners to engage in ‘active professional hypothesizing’ so reflecting using AR has the potential to involve more criticality, therefore professionalism, than Carr and Kemmis’ (1986) model suggests.

Re-search

Recently, Saeverot and Kvam (2019) called for an alternative model of researching educational practice, which can be identified as ‘re-search’. Taking inspiration from Kemmis (2012), they identified two broad ways in which education can be researched: autobiographical (using an insider perspective) and biographical (from an outsider perspective). Although much educational research is ‘biographical’, this is flawed in that it ‘may not be relevant for those who are involved in educational practice; that is, the practitioners’ (Saeverot and Kvam, 2019, p.205). For this research-based theory from a biographical perspective to have relevance in practice, Saeverot and Kvam (2019) suggested that teachers should be enabled to test findings in practice via autobiographical research. This could include reflections upon teaching and learning, which they equate with the everyday pedagogy that teachers are always engaged in. Wieser (2018) has recently identified the knowledge used by teachers as ‘knowledge-that’ (propositional from research) and ‘knowledge-how’ (personal reflections). Ideally, the professional teacher will combine both as using research evidence alone is insufficient due to the unique contexts of the learning environment, as will be explored next.

2.1.4 Teachers using research

The reliance on research findings at the expense of the intuitive knowledge built up by a teacher through their reflections is reviewed next. Starting with the notion that the passive use of evidence could displace the variations of critical reflections outlined above, the review then presents the intentions of teachers basing their practice upon evidence, which was borne out of a desire for teachers to use evidence in a similar way to medical professionals basing their practice upon evidence. The positivistic research methodology associated with this evidence-based discourse is then explored, arguing, again, for teachers to be more active in

this element of research engagement to reverse the de-professionalisation of teachers as passive consumers of research evidence.

The worry that teacher intuition could be subverted by scientific evidence is not new (Carr and Kemmis, 1986). Carr and Kemmis (1986) saw this as diminishing the professionalism of the teacher, who is merely expected to implement the findings from research that claimed to provide definitive answers to questions of pedagogy. This is known as ‘evidence-based’ teaching and Campbell and McNamara (2010) offered two interpretations of this phrase, which was common in the literature at the time of writing. They proposed that ‘evidence-based’ teaching had the potential either to create autonomous teachers who make informed decisions based upon evidence or to de-professionalise by reducing teachers to technicians (Winch Oancea, and Orchard, 2013) who merely act upon the evidence produced by distant expert others. To illustrate this dichotomy, metaphors of a ‘kitchen orderly’ compared with a ‘master chef’ are employed. Continuing this metaphor, Higgins (2016, p.237) has identified that in the current discourse ‘pedagogy is tightly scripted according to ‘what works’ recipes’.

In this ‘evidence-based’ discourse, teachers are not encouraged to challenge findings from research (Cochran-Smith and Lytle, 2009). This ‘more scientific approach’ (Coe, 2013, p.16) to pedagogy has been critiqued (see Kincheloe (1991) and Winch, Oancea et al. (2013) but the extent to which teaching can be based solely upon evidence from research is not the focus of this review. What will be analysed is how teachers’ use of research may be theorised as part of their wider research engagement as professionals so attention is now turned to the inspiration for this - the medical profession.

The Medical Model

The appropriation of the medical model by education is evident in Hargreaves’ (1996) lecture for the TTA, where he pointed to ways in which teaching could adapt to be more like the medical professions, particularly in the use of research. Hammersley (1993, p.430) had previously pointed out that ‘most teachers do not read much educational research’ and Hargreaves (1996) suggested that one reason for this is that unlike doctors, who are trained in the technical language of the natural sciences, therefore are able to understand research related to their profession, teachers do not necessarily have this fundamental training. This has been compounded in more recent years with the move towards school-based ITE, where

novice teachers are based in a school rather than a university that provides work placements in schools. Lingard and Renshaw (2010) anticipated that this would reduce student teachers' exposure to formal research, therefore their use of knowledge from this research.

In their predictions of the future direction of educational research, Carr and Kemmis (1986) foresaw the use of RCTs from the medical model, which they critiqued as inappropriate in education as it requires control that is not possible in a classroom and this argument continues to be used to counter the privileging of this method (Biesta, 2010; Lingard and Renshaw, 2010; Simons, 2003; Wrigley, 2018). Whilst successes of RCTs in medicine and agriculture have been used to advocate a move in this direction for education (Petty, 2014), others believe that the model of RCTs should not be privileged in the teaching profession, as it is in other more scientific professions such as medicine and engineering (Whitty, Anders, Hayton, Tang, and Wisby, 2016). Koutsouris and Norwich (2018) questioned whether RCT findings alone are useful in education, arguing for more contextual insights to be the focus of this kind of research, particularly in the case of negative results.

The argument for the use of findings from RCTs alone, therefore, is unfounded, not least because even in the medical professions, which education is supposed to be emulating, there is still a debate about the use of trials that overlook contextual nuances (Whitty et al, 2016). In health care also, the reliance upon evidence from RCTs precludes the experiences of individuals, knowledge from practice and alternative research strategies (Porter and O'Halloran, 2011). Biesta (2013) has questioned whether practitioners using interventions that have been proven to achieve pre-determined outcomes is appropriate in the field of education as it is in medicine, not least because of the unintended outcomes that research in the social sciences can yield. For education, Simons (2004, p.410) advocated for the use of qualitative data as educational research 'without the contextualization and understanding of personal experience that qualitative methods provide... is sorely lacking in explanatory or educative power'.

Hargreaves advocated that teachers should have access to 'what works' as medics do, which is contentious in education due to the research methodology associated with this discourse - syntheses of RCTs (Whitty et al., 2016). The main disadvantage of syntheses of RCTs is the limited evidence base that will not necessarily 'meet the ever-evolving challenges of professional practice' (Hordern, 2016a, p.428). Whitty (2016, p.9) has pointed out that 'what works today may not work tomorrow', which is reminiscent of Biesta (2010),

who noted that the results from an RCT would only present what had worked in the past tense, not ‘what works’ in the present tense.

De-professionalising

The phrase now favoured by policy-makers is ‘evidence-informed’ practice but Harrison and McCaig (2017) state that it is the inherent ‘what works’ rhetoric that permeates the ‘evidence-informed’ discourse that should be critiqued from a post-positivist perspective. First, their critiques pertain to epistemology of experimental research in education which does not address the complexity of educational problems and the social contexts in which they inhabit, making claims of ‘what works’, from their perspective, naïve. Their next critique refers to the analysis of data from experiments, which does not consider the law of unmeasured consequences, passage of time, overlapping interventions and experimentation effects. What Harrison and McCaig (2017) have opposed is the presentation of evidence, such as from RCTs, as proof that interventions should be adopted by practitioners, which they claim is de-professionalising.

Reducing the complexity of education to a knowledge base of findings from RCTs requires teachers to subscribe to the same axiological goals as the researchers, which may be mismatched. Biesta (2007a, p.6) noted that educational research is being directed to what is considered ‘useful’ according to the values of the decision-makers who initiate research, which he called ‘effectivity’. This may not align with what stakeholders deem educationally desirable. Similarly, Menter (2016, p.34) saw ‘evidence-based teaching’ as a way of teaching becoming ‘‘more effective’ rather than about questioning underlying values, purposes and motives’, as Carr and Kemmis (1986) predicted 30 years previously. In this way, teachers may be passively using findings from research that is being conducted for a narrow ‘research-for-use agenda’ (Whitty et al., 2016, p.2), rather than to address what matters to them. In the seminal methodology book by Cohen et al. (2011), they observed that the move to educational research becoming more evaluative to measure the impact of policies has given rise to evaluative studies that ‘find positivist methodologies attractive, often debasing the data through illegitimate summary’ (Cohen et al. 2011, p.53).

Carr and Kemmis (1986) warned that researchers collating evidence for teachers to implement (Cochran-Smith and Lytle, 2001; Ball, Maguire and Braun, 2012) subjects teachers to agenda of external others, reducing teachers to the ‘recipients of other people’s

knowledge' (Cochran-Smith and Lytle, 2009, p.11). For Higgins (2016, p.232), the dominant perception that all enquiry into professional practice needs to include research disproportionately benefits those involved in creating knowledge (researchers), 'while others (teachers) do as they are told' (parentheses in original). This can be countered in initiatives which actively involve teachers in the research process in the first place (McKenney and Schunn, 2018, p.1086). Alternatively, rather than relying upon evidence, Wrigley (2018) highlighted the importance of using professional experience in context when making use of research. This is conceptualised here as engaging *with* research as it requires more active involvement of teachers as opposed to engaging findings *from* research in a passive way.

Williams and Coles (2007) suggested that seeking information and enquiry should be part of professional practice in this knowledge-based society, linking using research evidence with professionalisation. They acknowledged, though, that researchers could do more to disseminate their findings more widely so teachers can have access to full research reports, if wanted. BERA-RSA (2014) reinforced this message, with the addition that it is teacher-researchers as well as academic researchers who should be making their findings freely available for others to use.

User-friendly

Access to research is not just physical, however, but intellectual also and evidence from RCTs is presented in the literature as more user-friendly. Cordingley (2013) saw this method as producing quantitative data for easy use by teachers in their CPD. The presentation of RCT findings are often in the form of meta-syntheses (Petty, 2014) and centrally maintained research summaries (Nelson and O'Bierne, 2014) but these have been critiqued for simplifying the complexity of educational research with a concise 'package' of knowledge (Hordern, 2015, p.436). Like Whitty (2016), Harrison and McCaig (2017, p.294) voiced concerns of what they call 'crude utilitarianism'.

Gough (2004, p.60), whilst admitting that there may be a government agenda that controls research syntheses to exclude creative and critical research, reminded that the protocols followed in gathering findings are transparent, which is 'moving away from traditional reviews and expert opinions with no explicit account of the source of conclusions'. In this way, teaching may be informed by objective evidence but as Williams and Coles (2007, p.204) found, syntheses 'cannot compensate for the richness of the knowledge base

available to a teacher with the motivation and skills to search more widely'. If the teaching profession is up-skilled and there are incentives to be more active in research use, other forms of evidence could be used in education.

At the moment, however, positivism prevails, with the 'tyranny of the majority' (Harrison and McCaig (2017, p.294) in meta-analyses and what Wrigley (2018, p.359) called 'the cultural status of numbers' in the 'what works' discourse. This reverence of meta-analyses in education has existed since at least the 1970s, however, as Gage (1978, p.94) predicted that 'better meta-analyses will bring together the results of the research in more valid and interpretable ways'. Wrigley (2018), however, claimed that presenting syntheses of results from several RCTs is actually unhelpful to teachers. Preferring the term 'statistical synthesis' to meta-analysis due to the lack of analysis in such presentation of data, Wrigley (2018, p.360) discounted the relevance of statistics alone for being too simplistic and misleading teachers. Therefore, both the conduct of RCTs and the presentation of findings from this research method de-professionalise the teacher.

2.1.5 Teachers engaging with research

One way of teachers being active in their engagement with research is explored below in an understanding of evidence-informed practice that allows teachers to create their own knowledge base by contextualising existing research. In this way, teachers may critique evidence from research and this subsection ends by introducing another way to achieve more active research engagement by reconciling the values of teachers with the evidence found by external others.

Carr and Kemmis (1986) condemned the positivism that they identified in contemporary educational research as functionalist, calling for a more critical teaching profession that actively engaged with research rather than passively implementing the findings from research that might have no bearing upon their own teaching context. Lampert (1990) proposed that it was important for researchers to know how the evidence they produce generates new knowledge for users of that evidence when it is contextualised, implying that knowledge from research alone is incomplete until theories are tried out in practice. More recently, Moss (2016, p.941) has highlighted that knowledge gained from educational research is not static as 'knowledge changes in the interactions between teachers and

learners' so there needs to be more active engagement with this existing research rather than simply engaging pedagogical strategies suggested by the evidence (see also McPhail, 2016). Moss (2016) emphasised that teachers, as professionals, can add to the evidence base rather than merely being recipients.

Kincheloe (1991) called this praxis, which involves the production of new knowledge when teachers combine their own experiences with the research they read. Campbell and McNamara, (2010) also saw the potential for educational research to create praxis, the synthesis of theory and practice (see also Groundwater-Smith, Mitchell and Mockler, 2016). The need for teaching to combine teacher expertise, or 'artistry' as Gage (1978, p.94) called it, with research evidence from the discipline of education and other fields is, therefore, not a new theory and continues to appear in the literature.

It appears that although combining research with teachers' reflections of their own practice may be the ideal, it has been misappropriated. Hammersley (1997) criticised Hargreaves' (1996) lecture to the TTA for implying that utilising research is always the best course of action in teaching which he argued it is not because of the unique contexts of learning. Hargreaves' (1997), in his rejoinder, clarified that the ideal is not for teachers to make judgements based upon research alone but to combine research with experience. A decade later, however, Biesta (2007a) identified that teaching practice is still being based solely upon research evidence, proposing that this is undemocratic as it precludes the opinions of educators. In another paper, he emphasised that research should only ever assist professional judgement (Biesta, 2007b). As Moss (2016, p.941) warned, 'any form of research can show us something, none will show us everything' so evidence from educational research should not be relied upon by teachers seeking to improve their practice.

To engage actively with research rather than passively using findings from research without critique requires training that the literature implies is lacking in the teaching profession. Punch and Oancea (2014) pointed out that to understand and apply research findings requires training in research methods, which they propose could come from HE, as did Cochran-Smith (2016). For Nelson and O'Beirn (2014, p.7) 'a focus on the role of evidence should be strengthened amongst initial teacher training and CPD providers and providers of school leadership training'. It was the DfE's (2016) intention for the Headteachers' Standards to include the development of research literacy amongst school leaders to develop a research-rich school culture.

For Orchard and Winch (2015), engaging critically with research involves using research findings judiciously based upon one's own knowledge of contextual factors. Acknowledging that this criticality is needed throughout a teaching career, they thought that it is particularly necessary to impart to student teachers, advocating that universities are in a better position to provide training in this criticality, which includes the ability to assess research quality and relevance to practice, by introducing the principles of research in the social sciences. Claiming that ITE in England does not place enough emphasis on theory and research, they proposed that upon obtaining qualified teacher status (QTS), newly qualified teachers (NQTs) should be enrolled on a higher-grade apprenticeship delivered by a university whilst teaching in a school, being awarded a Master's degree at the end of two years. For the CPD of in-service teachers, Orchard and Winch (2015) praised the grassroots movement, ResearchED, which they say has made critiquing research findings popular amongst teachers. The ResearchED events could also be seen, however, as focusing upon the dissemination of 'best practice', a concept that Simons (2003) has critiqued for implying the possibility of uniformity in education. She emphasised that the use of research by a teacher should depend upon its relevance to their context.

Another proposal has been a move from evidence-based to value-based practice, which does not completely disregard the use of evidence in education but relegates its importance in favour of the values unique to different contexts of education (Biesta, 2010). In what Biesta (2010, p.500) called 'the less-strong option of evidence-*informed* practice' (emphasis in original), judgements about how to use evidence are based upon the values of individual teachers, which is preferable to relying upon apparently generalisable research findings to solve educational problems (Whitty, 2016), as Biesta (2010) claimed that policy makers do. Values-based practice has also been offered as an accompaniment to evidence-based practice in the medical professions, for example, psychiatry (Fulford, 2008).

To rely upon theory or research belies the complexity of education in practice, which requires a more individualised approach (Luttenberg et al., 2017), perhaps involving teachers bringing their values and contexts into their use of research or maybe even using existing research as a catalyst for their own investigations into their practice, as will be explored next.

2.1.6 Teachers engaging in research

Cochran-Smith and Lytle's (2009) concept of 'inquiry as stance' goes beyond teachers engaging with research; rather, it is 'the capacity to generate and critique knowledge, figure out how to use (or not use) knowledge generated by others' (p.125). The 'inquiry as stance' movement was established by Cochran-Smith and Lytle (2009) to re-conceptualise: (1) who generates knowledge about teaching, (2) what this professional knowledge is and (3) how this it is produced and used. It is these three concepts that will be explored here, both in relation to 'inquiry as stance' and from other theoretical perspectives of teachers engaging in their own research.

Who generates knowledge?

Questions relating to who should conduct educational research and how this should be done precede Cochran-Smith and Lytle (2009). Williamson McDiarmid and Clevenger-Bright (1990) also believed that practitioners need to be part of research, not just participants and consumers of research. This would be made easier with the use of qualitative data that teachers already generate daily in their reflections (Kincheloe, 1991; Lampert, 1990), which would be relevant to both practitioners and researchers. Rather than 're-search', as defined here as teacher reflection, Lampert (1990) saw the potential for these qualitative data to be more systematically collected and analysed and saw the evolution of qualitative research as enabling this. Today, 'much educational research is qualitative and applied, and has much engagement with, and relevance to, its participants' (Campbell and McNamara, 2010, p.12), but is not as dominant as Lampert (1990) anticipated.

Action research may be used by teachers to generate qualitative data robustly, rather than as a mechanism for reflection as discussed above, but this research method does not necessarily fit in the current discourse of research engagement in the teaching profession. In the foreword to Stringer's book on action research, Guba (2007) called for radical changes in educational research to be more inclusive for practitioners but a reading of Elliott's (2009) chapter in the book *Changing Teacher Professionalism* suggests that these changes are problematic. Guba (2007) proposed that educational research should become decentralised in order to become local, not general. According to Elliott (2009), though, 'practitioner research' has become more about viewing outcomes as statistics in order to generalise, rather than having the philosophy of learning as its core. The next change that Guba (2007) desired was for educational research to become deregulated so as not to be constrained by conventional rules of epistemology. However, Elliott (2009, p.174) believed that 'positivism

is being confidently reasserted in the context of educational research' and that this is supported by policy. Finally, Guba (2007) hoped that educational research would become cooperative in execution so that the researched are also the researchers. By contrast, Elliott (2009) noted that practitioner research is often practised within the teaching community rather than between teachers and academics.

The absence of the research community in educational research has been considered a negative and a positive trait of teacher research. Hammersley (1993, p.441) concluded that, while teacher research can be useful, 'it does not substitute for educational research of a more conventional kind', which has more reach. For Goodson (1994), this was not the case as he saw research as being conducted by, and for, academics as opposed to the teaching profession. What Hargreaves (1996) opposed in this discourse was the difficulty of communicating findings when the producers of research are different to the consumers of research, which is not the case in the medical profession. Cochran-Smith and Lytle (2007) noted how knowledge about teaching and teachers originates in universities, not in the field of teaching and blamed this disjointed process on the age of accountability, where academics are expected to offer their expertise for practitioners to implement.

Not only do teachers possess useful knowledge for educational research to harness, it has also been pointed out that they have a unique axiological position that an external researcher is lacking. For Cochran-Smith and Lytle (2009), it should be teachers who decide what is important to find out more about how young people learn, particularly those young people on the periphery, as teaching is generally considered a vocation motivated by social justice. Teacher inquiries themselves, they advise, should originate from practice (as in Punch and Oancea, 2014) rather than a management or external research agenda. Describing educational research as 'values driven with an emphasis on doing what is regarded as equitable and honourable', Campbell and McNamara (2010, p.12) also acknowledged that the creation of knowledge depends so much upon the subjectivities of the researcher. Educational research that is limited to an external researcher's agenda is, therefore, problematic.

Whereas Whitty et al. (2016) point out that educational research in academia is not necessarily produced for practitioners to use, teacher research can be useful for both the teaching and academic communities (Campbell et al., 2010; BERA-RSA, 2014). For Cochran-Smith and Lytle (2010), inquiry as stance is about teachers being empowered to find out what they believe to be important for the development of the young people they are

responsible for, but their knowledge should not be seen as useful only to them. Their findings will still be interesting to other practitioners as well as academics and may serve as inspiration for further studies.

What is professional knowledge?

As well as problematising who should conduct educational research, Cochran-Smith and Lytle (2009) also questioned the sources of evidence used in the creation of professional knowledge via research. They critiqued the view that teaching is purely technical, preferring to see it as more complex, being a social endeavour that is both political and personal. Taking inspiration from Lincoln and Guba (1990), they rejected the notion that findings from research can be generalised independent of context. What Cochran-Smyth and Lytle (2009) refer to as knowledge and data are, by their own admission, varied and inclusive for professionals who use many sources to make decisions on a daily basis.

Cochran-Smith and Lytle (2009) believed that practitioner inquiry should be part of the teaching profession and coined the phrase ‘inquiry as stance’ as opposed to phrases like ‘teacher research’, ‘action research’ and ‘the scholarship of teaching’ (pp.45-6), which they see as unduly discriminating between what teachers and academic researchers are capable of. It was Cochran-Smith and Lytle’s (2009) intention that teachers using an inquiry as stance would revolutionise how knowledge about education is acquired but ideas about teachers researching as part of their development are not new. Carr and Kemmis (1986, p.2), for example, proposed that ‘professional development of teachers requires that they adopt a research stance towards their educational practice’. Lingard and Renshaw (2010, p.32) called this ‘teacher knowledge in action’, which consists of the teacher as a person (intuition) and the teacher as researcher.

How is knowledge produced and used?

Attention is now turned to how teachers could engage in their own research. First, the criteria for classroom research set out by Torney-Purta (1985) are presented and countered by a more current perspective before turning to recent principles of teacher ‘inquiry’, as Wall and Hall (2017) refer to it. Starting with the principles of action research (AR) as an approach that frequently appears in the literature on teacher research, the methodology to enact these principles is then explored. Research methods are then touched upon before proposals for

research facilitation from, and collaboration with, HE are examined as a way for teachers to engage in research using these methods.

Wall and Hall (2017) have articulated what they call three principles of teacher inquiry: autonomy, disturbance and dialogue. These are grounded in their experiences of working with teachers who, they say, need a degree of autonomy in deciding upon research questions, have gained metacognition from disturbing accepted practice and have opened up a dialogue to add to the wider knowledge base. This dialogue, they argued, is preferable to ‘telling teachers what to do or how to do it’ (ibid., p.45) and is reminiscent of Carr and Kemmis’ (1986) conceptualisation of the critical teacher who is able to generate their own professional knowledge to question knowledge from external others.

A way for teachers to add to the knowledge base as part of their own PD may be via AR (Punch and Oancea, 2014), though this is contested. Action research has already been introduced above as a way of teachers reflecting upon their practice to instigate change, therefore ‘re-searching’ but if this goes beyond reflecting upon practice as theorised above and if data are deliberately gathered and systematically analysed (Stenhouse, 1981), this could be legitimately considered as research. Punch and Oancea (2014) have noted that the popularity of AR in education during the 1970s has now declined because of the absence of academic rigour and the burden of researching alongside teaching.

The importance of rigour was also mentioned by Torney-Purta (1985) but Cochran-Smith and Lytle (2010) counter the notion of rigour in their inquiry as stance model. They acknowledge that teacher inquiries might not be equal to research conducted at a university but that this argument should only be seen as ‘intended to safeguard traditional approaches to knowledge generation and teacher development and preserve the hegemony of outside expertise’ (ibid., p.47). Lingard and Renshaw (2010) proposed that teaching should inform research just as much as teaching is informed by research. They saw practitioner research as part of educational research more broadly which, they believed, should consist of a wide range of methodology and theory, including the small-scale research that teachers may conduct.

This is not to say that the complexity of the classroom is simply ‘solved’ with teacher research but Campbell et al. (2010) praised the kind of classroom research that consists of inquiries of interpersonal relationships rather than de-contextualised quantitative data, though numerical data may be useful in part. Campbell et al. (2010, p.8) speak of ‘descriptions of

social phenomena ringing true, rather than being true' in a positivist sense and propose that teachers collecting both qualitative and quantitative data to share with colleagues is a legitimate research approach.

Criticality in teacher AR has always been important (Torney-Purta, 1985) and Campbell et al. (2010) have more recently emphasised the importance for teachers to remain critical of their research focus and findings. Enablers of this criticality were described as teacher autonomy in the research design, support in the research process and a platform to disseminate findings that allows for debate. Higgins (2016) rejected AR as a way of teachers enquiring, however. One argument was that although actively participating in a research process, teachers experimenting and collecting data on a small scale can still leave teachers feeling inferior to researchers, with 'one more hat to wear' but little further training (Higgins, 2016, p.235). In a reply to Higgins (2016), it is argued that AR should not be completely dismissed if it is part of a HE course, like a Master's, or as part of a whole-school or inter-school initiative in which there is training and support (Foreman-Peck and Heilbronn, 2018).

Teachers engaging in AR is also critiqued by Higgins (2016) on epistemological grounds. He argued that briefly casting aside the role of 'teacher' to take on the role of a 'researcher' could result in them noticing less than they would in their role as a teacher who has a unique relationship with their pupils. The knowledge that *is* gathered is also problematised by Higgins (2016) for it is lauded as more relevant to practice than knowledge about education generated by other means, such as by external others, therefore the dominance is reversed but there is still a privileging of one kind of epistemology over another. This can be seen in Groundwater-Smith and Campbell's (2010) writing, who proposed that teachers should value dialogues with other teachers engaged in enquiry more than the research of academics (though this is not the case in the current policy context; see 2.2.4) and called for dialogic learning for both teachers and academics. Whilst Cochran-Smith and Lytle's (2009) inquiry as stance movement also elevates practitioner knowledge, they present it as additional to that generated in academia, rather than preferable to other research. Orchard and Winch (2015) proposed the use of AR as part of teacher education. They stressed that new teachers collaborating with teacher educators on an AR project is successful when the respective strengths of all involved are utilised so there is no dominant outlier.

What makes AR an ideal research approach for teachers is that the research methods used are observation and experiment, which is what teachers already do to bring about change in the classroom (Kincheloe, 1991). This may complement the findings from external researchers, who are rarely able to immerse themselves in the research context as teachers are, with the access to research participants that teacher-researchers have. Kincheloe (1991) advised that the quickest way for teachers to research is to listen to pupils, which can be identified as an ethnographic research method that has the potential to produce rich qualitative data.

As well as the qualitative data produced by teacher-researchers being useful, Kincheloe (1991) also saw teachers researching using qualitative inquiry as empowering. This requires teachers to have the what the BERA-RSA (2014) referred to as 'research ability', which includes the capacity for research within a school or college setting, the motivation from individual teachers to want to engage, how confident they feel in doing so and the research-related opportunities they are offered. Research facilitation from, and collaboration with, HE may be a way to meet these criteria and will be explored next.

Higher Education as an enabler

It is acknowledged in the literature that teachers conducting their own research would need guidance, which may be offered by university advice and direction. Goswami and Stillman (1987, p.28) proposed the establishment of research communities where there would be 'the cooperation of inquiring teachers and the drawing in of expertise from all sorts of sources'. The intention was that the initial investigations of an individual teacher in an ethnographic study could be repeated by other teachers to reveal patterns, stressing the importance of networks within school and beyond to facilitate this. In this way, teachers, working together can create their own theories more relevant to their practice. This was not to be a replacement for more academic research, however, as the objective was for these 'inquiring teachers' to then progress to studies within HE.

As well as teachers requiring help with their research, teachers are also portrayed in the literature as important facilitators for the research of external others. Instead of academics and decision-makers initiating research, Goswami and Stillman (1987, p.22) believed that teachers 'can, and should, be the chief source of both the questions and the data from which the questions may be answered'. Rather than teachers being passive consumers of other

people's research, teachers are more active in this research process because 'if the questions and the answers are not continually REformulated [sic.] by those who are working in the classroom, educational research is pointless' (ibid., p.30).

From a critical perspective, teachers facilitating the research conducted by others can be seen as exploitative. Although Kincheloe (1991) had an idealised vision of teachers as active producers of research evidence, he pointed out that in the teaching profession, there was not the expectation for teachers to be able to research; therefore, there is a deficit of the skills needed so that teachers can view their classroom as, in his words, 'a laboratory' (p.1). Without teachers being actively involved in the process of research, they are just passive consumers of research evidence, which could lead to teachers' personal authority being undermined. Kincheloe (1991) believed that teachers should be equal partners in R&D but was sceptical as to how far there could be an egalitarian research-informed teaching profession. One solution that Kincheloe (1991) referred to is that research should focus upon goals decided by teachers, but this was dismissed as this could lead to teachers being exploited by researchers. For Kincheloe (1991), the way forward was for research methods to be taught to teachers so that they may have the agency to develop their teaching practice through their own research. Though he acknowledged that there are research methods courses for teachers, he criticised these for favouring quantitative data.

As well as the importance of research facilitation, research collaborations between teachers and researchers also appear in the literature, though the extent to which the proposed collaborations are on equal terms is debatable, with the researcher taking the superior facilitation role. Torney-Purta (1985) theorised the potential of academics collaborating with teachers in classroom research to allay feelings of isolation, encourage reflection and transform theory into practice. The dynamics of collaboration are important, with the academic partner acting as a 'knowledge broker' (ibid, p.75), especially at the beginning of a collaborative research project and particularly with regards to research methodology. Later, the academic's main role is to ask questions rather than provide answers so discussions between participating teachers can be fostered. They are also role models in the research process, being more experienced in research and able to reassure teachers along their research journey. Finally, being an 'outsider', the academic provides an alternative perspective to what is found in the school by the teachers. An outcome of this collaborative research for teachers may be 'a less passive role in educational improvement and an enhanced sense of

professionalism' (ibid., p.75). Although referred to as researcher-teacher collaborations, what Torney-Purta envisioned is more akin to research facilitation.

A more equal exchange of knowledge between teachers and university-based researchers was proposed by Cochran-Smith and Lytle (1990), stressing that these school-university relationships should be 'reciprocal and symbiotic, not unilateral or top-down' (Cochran-Smith and Lytle, 2009, p.89). They saw collaborations in teacher research as essential for the teaching profession as well as being beneficial for academics if a collaborative effort is embraced. For these collaborations to work, there needs to be 'time that is protected from absorption into the rituals of school life' (ibid., p.154) and what is produced in this time needs to be valued. Lingard and Renshaw (2010) stressed that the findings from research collaboration should be valuable to both parties. Arguing 'for more collaborative relationships between researchers and research-informed teachers' (ibid., p.27), in their conceptualisation of teacher-research collaborations, 'the identities of teacher and researcher, of insider and outsider, of producer and consumer, are collapsed' (ibid., p.36).

Lingard and Renshaw (2010, p.37) found it 'difficult to envisage the field of educational research progressing without academic researchers entering into design research partnerships with teachers' but this can be seen as an idealised view of teachers collaborating with researchers on equal terms. Groundwater-Smith and Mockler (2010, p.170) took a more realistic stance, believing that at the time of writing 'universities and schools operate in parallel universes' so expertise is not shared. The desire to improve this has continued, with Winch, Oancea and Orchard (2013) similarly advocating the convergence of educational research and teacher knowledge and Burn and Mutton (2013) calling for a dialogue between research and practice. The importance of partnerships between researchers and teachers is especially important in educational research according to Punch and Oancea (2014) because of the applied nature of the field.

The BERA-RSA (2014) report highlighted the importance of partnerships between researchers and teachers as well as within the teaching community. As part of this inquiry into the role of research in teaching and teacher education, Winch et al. (2013, p.5) theorised that 'if teachers are not educated to be researchers, they cannot aspire to be expert practitioners of educational research' but raised concerns about the practicalities of teachers being researchers in addition to their daily teaching responsibilities. They therefore proposed

that partnerships in educational research would be a starting point for teachers to progress eventually to teaching and researching simultaneously as part of their PD.

Teachers collaborating with researchers can be regarded as even more profound than for the PD of individual teachers. For Hordern (2016a, p.438), what makes a profession is an occupation that ‘engenders the ‘co-creation’ of knowledge by practitioners and academic researchers’ so teachers collaborating with educational researchers arguably elevates their status as a profession. From a more immediate perspective, Mincu (2013) saw collaborative research projects as having the potential for school improvement. Again, an effective model is presented of teachers collaborating with researchers and *being* researchers in a conduit role to recontextualise research evidence. In this way, teachers would be engaging *with* existing research, then engaging *in* their own research to ascertain whether the findings from another researcher’s work is applicable to their context. How this manifests in the literature is explored next.

2.1.7 Engaging with and in research

This subsection presents views relating to teachers engaging *in* their own research as a way of critically engaging *with* existing research. It begins by continuing the theme of collaborations between researchers and teachers before detailing proposals for how teachers could take evidence from research (theoretical or empirical) and transform it into new knowledge.

External research has been seen as useful for providing a starting point for teachers to experiment in their own settings with help from academics (Elliott, 2001). Petty (2014, p.83) has called these ‘supported experiments’ based upon the evidence from systematic reviews, his preferred research output for teachers to engage with. In this way, teachers produce their own contextualised evidence.

The way in which teachers can legitimately and effectively generate their own knowledge requires a complete re-think of teaching and learning according to Higgins (2016). Teachers need to be enabled to be life-long learners and he argued that the starting point for this is in university-based ITE, where theory is not merely transmitted but engaged with in order to be transformational. Once qualified, teachers need the freedom to continue to enquire.

Clinical Research

As explained above, Higgins (2016) rejected AR as a way for teachers to generate robust knowledge but Bulterman-Bos (2017) has conceptualised a form of AR whereby teachers engage with academic theory and combine this with their own intuition from practical experiences to construct a professional knowledge base that is formed from an insider perspective. Calling it clinical research, it differs from a purely academic approach that relies upon logic at the expense of imagination, emotion and skill; in clinical research, all components are utilised.

Clinical research can be seen in various guises within the literature, such as ‘design-based research’ and ‘learning study’. Design-based research has been identified as an emerging paradigm for enquiring about educational innovations using theory and empirical research of practice by the Design-Based Research Collective (2003). They stressed the need to utilise existing theory in education to inform each part of the iterative process of designing, enacting, analysing and redesigning teaching to disseminate to other teachers. Like design-based research, learning study is based upon theory and practice but it also includes collaboration (Thorsten, 2017). As a form of participatory AR, learning study necessitates that the teacher-researchers involved know the learners and the context well. Lessons, therefore, are able to be analysed through an experiential and theoretical lens. As the Design-Based Research Collective (2003) advocated, learning study according to Thorsten (2017) also intends to generate knowledge to be used and built upon by others.

Professionalising Teaching

Action research can be transformative in countering the audit culture of checking that teachers are conforming to supposedly evidence-based pedagogy (Foreman-Peck and Heilbronn, 2018). Teachers can use their own research to open up a dialogue with research rather than passively using an existing knowledge base. Cochran-Smith and Lytle (2009) proposed that teachers engaging *with* and *in* research democratises educational research. They saw research-engaged teachers as forming a new form of professionalism, as later seen in the BERA-RSA (2014) inquiry.

In the wider debate of teacher professionalism, Clarke (2018, p.80) included ‘evidence-based practitioners’ in the ‘professional’ quadrant of her ‘place model’, which

theorises the location of teachers in terms of their status in society and their own learning journey within their career. According to Clarke (2018, p.72), professional teachers are ‘teacher-learners’ involved in ‘consuming and, perhaps, even contributing to, research’ (ibid., p.80) as their careers progress.

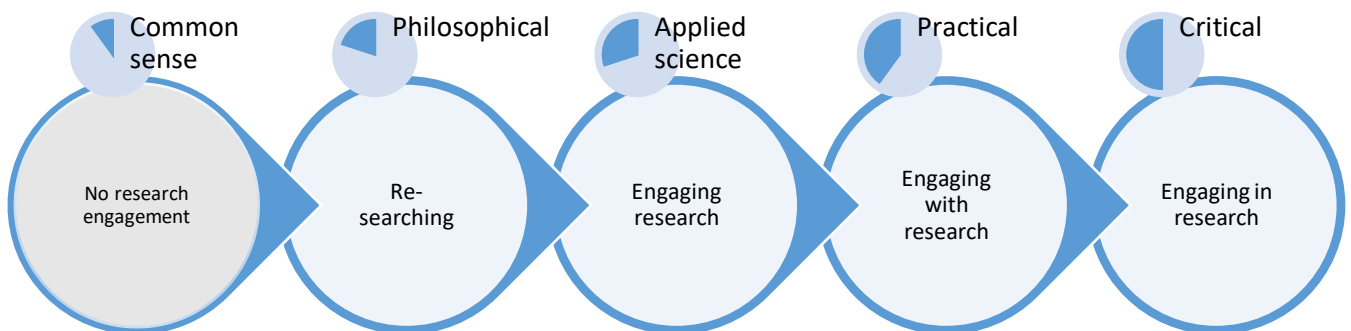
La Velle and Flores (2018, p.532) formed a model of research-based knowledge enhancement for teaching, which they claim ‘raises the role of teachers as not only consumers of research, but also generators of it’. Current thinking of teaching employs a ‘craft-based notion of professionalism’ (ibid., p.525), which would not be the case if research evidence that has the potential to be useful in practice was made available to teachers. In their cycle, new knowledge is generated by teachers who have engaged with this research evidence and this is applied in a way they believe might improve their practice. Through this process, research-based knowledge is enhanced by teachers’ tacit knowledge, their values and contextual factors. The cycle continues with teachers reflecting upon the findings from research that they have implemented, thus *re-searching*. Together, engaging *with* research, engaging findings *from* this research and *re-searching* its impact ‘enhance[s] teacher professionalism’ (ibid., p.533).

Whilst Cochran-Smith and Lytle (1990) saw teacher enquiries as democratising research, Kincheloe (1991) warned that if teachers are empowered to engage *with* and *in* research, their efforts could be subsumed by management, which is a danger that the BERA-RSA (2014) inquiry has been mindful of more recently. To end this subsection on a more optimistic note, Winch et al. (2013, p.2) assert that engagement *with* and *in* research will benefit all areas of teachers’ professional knowledge as well as enriching educational research itself. This echoes Carr and Kemmis’ (1986) work, which presents teachers critically engaging with research and in their own research as empowering to the teaching profession. A re-imagining of their work on the criticality of teachers is used as a theoretical framework for this thesis and is explained below.

2.1.8 Theoretical framework

From this literature review, an adapted version of the work of Carr and Kemmis (1986, re-published in 2002) has been developed (Fig. 2). In this framework, the ‘common sense’ model of teacher professionalism is equated to an absence of research engagement, which Gage (1978, p.93) described as the ‘unaided common sense or raw experience of the teacher’. Research engagement at a reflective level can be conceptualised as ‘re-searching’ in that it involves teachers looking again at their practice philosophically (as in Goswami and Stillman, 1987). Teachers passively using existing research in an ‘applied science’ approach is re-cast as ‘engaging research’ as it only requires teachers to deploy or engage the findings from research. Combining research evidence and reflective practice will be referred to as ‘engaging *with* research’ as a way for ‘teachers to discriminate autonomously between good sense and common sense’ (Winch, Oancea and Orchard, 2013, p.2). Finally, critically engaging with research, involving teachers producing their own evidence to put into dialogue with the existing knowledge base, is identified as ‘engaging *in* research’.

Figure 2 : Carr and Kemmis (1986) re-conceptualised



This continuum of teacher professionalism is a helpful framework with which to understand the different forms of research engagement but does not cover the constraints teachers may face in moving through this model of professionalism. Research collaborations and facilitation appear in the literature as enablers so will be addressed when relevant as each aspect of the framework is explored. For example, Cochran-Smith and Lytle’s (2009, p.89) inquiry as stance praises the benefits of collaborations within the profession as well as with external others. Groundwater-Smith and Mockler (2010, p.170) also advocated teachers learning together in a network to go ‘beyond adapting to the solutions of others, particularly those that are characterised as ‘best practice’ or ‘what works’’. Campbell and McNamara (2010) called for more research in the area of teachers conducting their own research to

contextualise knowledge gained from elsewhere, particularly with regards to the role of HE. They saw HE as a potential facilitator of practitioner research, albeit problematised by shifting priorities in policy (see next section of chapter).

Evidence-informed teaching, therefore, can be conceptualised as a model of professionalism ranging from teachers as reflective practitioners of their own practice and passive consumers of existing evidence to teachers as active producers of new evidence to progress the knowledge base. The elements of this continuum that are offered to teachers in the current policy context of England will now be explored.

2.2 Research Engagement in Policy

This section furthers the understanding of research engagement in the teaching profession by exploring the policy documentation of England, which is replete with the discourse of ‘evidence-informed teaching’. Although there is a long history of policy initiatives involving the use of evidence in the teaching profession (Whitty, 2016), this chapter section focuses upon relevant publications issued by government bodies since the Conservative-Liberal Democrat Coalition of 2010 when the focus of a ‘self-improving school system’ (Hargreaves, 2010) was first proposed. Once key concepts relating to evidence-informed teaching have been introduced via two key white papers of this era (2010 and 2016), there will be an overview of the stances the several secretaries of state for education have taken during this period with regards to research engagement. References will also be made to legacy policies from the previous Labour administrations of Blair and Brown (1997-2010) where these are relevant, as well as international perspectives. Rather than tracing the policy relating to research engagement chronologically, however, the overall organisation of this chapter section uses the theoretical framework above as an analytical tool.

In the Schools White Paper of 2010, the DfE established the intention to ‘support the school system to become more effectively self-improving’ (DfE, 2010, p.13), with research engagement being part of this proposal. Drawing parallels with health professionals, the aim was to ‘ensure that schools have access to high quality, evidence-based information’ (ibid., p.29). Further inspiration from the health sector can also be seen in the idea to ‘create a new national network of Teaching Schools, on the model of teaching hospitals, giving outstanding schools the role of leading the training and professional development’ of teachers (ibid.,

p.20). As well as ITE and CPD, these new TSs, rated ‘outstanding’ by Ofsted, were also tasked with talent management, school-to-school support, developing specialist leaders of education (SLEs) and R&D. The use of TSs to ‘spread high quality evidence’ was reiterated in the 2016 white paper (DfE, March 2016, p.39), as recommended by Hargreaves (2012, p.18) for a ‘self-improving school system’. Rather than TSs having R&D as a discrete element, it became the intention of the Teaching Schools Council that R&D is ubiquitous in the new tri-focal remit of the TS: ITE, CPD and school-to-school support. A requirement of this is that ‘wider school communities both engage “in” and “with” research’ (Teaching Schools Council, 2017, p.1).

It was the intention of the Secretary of State for Education in England from 2010 to 2014, Michael Gove, for teachers to use evidence ‘to decide how best to teach their pupils’ (Gove, 2013). This is known as the ‘what works’ discourse and was recommended to the Cabinet Office of the Conservative-Liberal Democrat administration (Haynes et al., 2012, p.15) but started by Labour according to Simons (2003). Despite this, the assessment criteria for attaining qualified teacher status, known as the Teachers’ Standards (DfE, 2011) were changed so that there is now ‘little explicit reference to teachers’ engagement with (and in) research or curriculum enquiry’ (Beauchamp, Clarke, Hulme and Murray, 2013, p.5). One set of standards now refer to teachers at all stages of their career, whereas prior to 2012, the Professional Standards for Teachers in England (TDA, 2007) were divided into incremental phases whereby teachers were expected to be more research engaged further into their career. For example, ‘excellent teachers’ should ‘research and evaluate innovative curricular practices and draw on research outcomes and other sources of external evidence to inform their own practice and that of colleagues’ (ibid., p.27). Whereas research literacy can be seen in the standards for teachers in the other jurisdictions of the UK (Menter, 2016), this is not an official prerequisite in England. This is still the case, despite this being recommended in Carter’s (2015, p.8) Review of Initial Teacher Training and Godfrey and Brown (2018, p.143) proposing that teachers’ pay should depend upon their research engagement and what they called their ‘research-literacy’ (hyphenated in original).

Michael Gove’s successor from 2014 to 2016, Nicky Morgan, repeated the need for an ‘evidence-informed teaching profession’ (DfE, March 2016) in the White Paper, *Educational Excellence Everywhere* but again, emphasis was placed upon passively engaging findings from research. Two aims of Morgan’s proposal for an evidence-informed teaching profession were to ‘increase teachers’ access to and use of high quality evidence’ and ‘ensure

teachers are trained in understanding and applying evidence’ (DfE, March 2016, p.37). Thus, teachers become the passive recipients of evidence from research. Part of this vision was the establishment of the Chartered College of Teaching (CCT). Although the CCT (2015) welcomes evidence from research conducted by teachers (so teachers may be active in the construction of this evidence), the College only supports ‘the types of smaller-scale research that are genuinely worth conducting’ (ibid., p.17), which may exclude the re-search of teachers, as discussed above. Similarly, it is trials yielding quantitative data that are lauded by another initiative introduced by Morgan, the National Research Schools Network (DfE, March 2016). The EEF and the Institute for Effective Education (IEE) were awarded £2.5 million by the DfE to establish a network of schools to focus upon innovation, training and communication of teaching strategies from research. National Research Schools (RSs) are allocated £200,000 to evaluate their own pedagogy to be rolled out to partner schools if successful as well as disseminate findings from other research, approved by the EEF and IEE, to their network of schools.

From 2016 to 2018, England’s Secretary of State for Education was Justine Greening and in a speech made at the Association of School and College Leaders (ASCL), she established her vision of teaching as ‘an increasingly mature profession, with evidence and best practice at the core of everything it does’ (Greening, 2017). Like her predecessor, she linked this with the formation of the CCT, which aims for ‘significant progress as a research-informed profession’ (CCT, 2015, p.9). The policy of the CCT relating to teaching practice, however, can be seen as only arbitrarily encouraging practitioners to be informed by evidence in a passive way rather than teaching professionals being actively involved in critiquing research, as will be elaborated upon later.

Damian Hinds replaced Greening in 2018, before the current Education Secretary, Gavin Williamson, took up office in the following year. Whilst the emphasis upon evidence-informed teaching more generally has abated, there is reference to research engagement in the Early Career Framework, designed to provide ‘the early career support enjoyed by other top professionals’ (Hinds, 2019, p.3). Again, here is the allusion to teaching being on a par with other professions that has been witnessed elsewhere with regards to the medical professions. As will be outlined below, whereby the review of policy is interrogated in light the theoretical framework adapted from Carr and Kemmis (1986), there has been a move towards encouraging criticality within the teaching profession, rather than engaging evidence from

research or developing practice via reflections, conceptualised here as ‘re-searching’, as explained next.

2.2.1 Re-searching

It could be argued that, whilst formal research practices are not mandatory for teachers, there is a need for teachers to re-search as the Teachers’ Standards require practitioners to ‘reflect systematically on the effectiveness of lessons and approaches to teaching’ (DfE, 2011, p.11). This may be done by looking closely at the pupil data routinely collected by schools, which Lingard and Renshaw (2010) say there is pressure for teachers to do. Reflecting upon one’s own practice may be identified as ‘experiential knowledge’, which is what Beauchamp et al. (2013) identified as becoming more prevalent in ITE provision in England, where new teachers are increasingly being taught in schools rather than in HEIs (NCTL, 2016).

Reviewing UK policy and practices relating to research in teacher education as part of the BERA-RSA (2014) inquiry, (Beauchamp, Clarke et al. 2013)(Beauchamp, Clarke et al. 2013)(Beauchamp, Clarke et al. 2013)Beauchamp et al. (2013) raised concerns that research-informed knowledge is being reduced in ITE in England, in contrast to it being strengthened in the other jurisdictions of the UK and the Republic of Ireland (see also Cochran-Smith, 2016). Carter (2015, p.22) stated that all teachers are ‘researchers of their own practice who continue to develop throughout their career’ and this starts with high-quality ITE focusing upon reflection, rather than the systematic collection and analysis of data. A recent report by the Royal Society and British Academy (2018) encouraged the DfE to enable early career teachers (ECTs) to carry out their own enquiries using the data regularly collected in schools and teachers’ own reflections, although it is the latter that is focused upon in the Early Career Framework, due to come into effect in 2021 (Hinds, 2019).

Lingard and Renshaw (2010) identified that governments in many countries ask practitioners to contribute to ‘research priorities’ (see also Calderhead and Gates, 1993), implying that the re-search of teachers is valued as a starting point for others’ research. The DfE has been advised to conduct more research, involving teachers, to generate evidence to be disseminated and utilised in the teaching profession (DfE, 2013) and the government’s response has been to encourage teachers to contribute to the research priorities of the DfE. Goldacre, in his advice to the DfE (2013), implies that teachers are not expected to engage *in* their own research; instead, it is their tacit knowledge through their reflections that should be

harnessed by educational researchers. This is similar to Stenhouse's (1975) original curriculum development programme whereby teachers provided pupil data and offered their perceptions of programme delivery. In his speech on the importance of teaching, Gove (2013) praised this move to teachers being more involved in research, criticising educational research in the past for being dominated by academics who are far removed from the classroom. To take advantage of the knowledge of teachers, the DfE published a suite of 15 consultation documents to 'identify evidence gaps and promote discussion of them with the research community, practitioners and other stakeholders' (DfE, March 2014, p.3) and this was further emphasised in the White Paper, *Educational Excellence Everywhere* (DfE, March 2016).

In the NCTL's (March 2014, p.9) report on the impact of TSs, the CPD section of the document includes what might be identified as *re*-search, describing how one TSA that had 'teachers from different schools undertaking and sharing practical, classroom-based action research'. Other than this reference, only one case study was presented in the R&D section of the document, which was divided into the six original key areas of the TS agenda: ITE, CPD, succession planning, school-to-school support, SLEs and R&D. As a discrete element of the TS remit, R&D is given the least amount of focus in this document (i.e. not quite filling the final page), suggesting that this is area that requires further development, as stated in Gu et al. (2014; 2015).

2.2.2 Engaging findings from research

There is conflict in the policy documentation as to whether teachers should be informed by evidence by passively engaging findings from research or engaging actively *with* the findings as critical professionals (Carr and Kemmis, 1986). This tension is exemplified by tracing the evolution of the annual Newly Qualified Teachers' Survey commissioned by the National College for Teaching and Leadership (NCTL). The access to research evidence for teachers to engage is then explored in relation to the Chartered College of Teaching that received start-up funding from the government.

It can be inferred that criticality is no longer a valued skill as it no longer features in a survey sent to NQTs. Between 2013 and 2015, the NCTL asked NQTs about how prepared they feel to access, assess and apply findings from research (NCTL, October 2015, p.95). Carter (2015, p.8), in his *Review of Initial Teacher Training*, emphasised that 'high-

performing systems induct their teachers in the use, assessment and application of research findings’, citing the BERA-RSA (2014) inquiry to support this supposition. However, this triad of research engagement was streamlined in the 2016 NQT survey, leaving only the first facet of research use at the expense of assessment and application of findings from research. The survey now only asks how well their teacher education prepared them to stay up-to-date with educational research (NCTL, August 2016), so accessing research is still enquired about but assessing how robust evidence is and how new teachers can apply research findings to their own context are conspicuous in their absence. These changes were made, according to the NCTL (August 2016) to reduce the size of the survey. It was thought that respondents did not differentiate between questions they perceived as being similar so, just one question is asked relating to understanding and applying evidence from research (NCTL, August 2016). Respondents of the 2015 survey, however, clearly did differentiate between assessing and accessing/ applying research as the report from that year states that the former ‘is one of the least positively rated aspects of teacher training’ (NCTL, October 2015, p84). Preparedness to assess educational research was clearly an issue highlighted in the survey but if it is no longer a focus in the survey, attention is not drawn to this problematic area of ITE, therefore the discourse is diverted towards a message of implementing up-to-date research findings.

Despite this move by the NCTL, in a recent evaluation of evidence-informed teaching for the DfE, Coldwell et al. (2017) divided their report into the familiar trio of: teachers accessing research evidence, engaging with research evidence and using research evidence. They found that for teachers, integrating evidence from research into their thinking and occasionally their practice was more important than directly engaging the findings from research within their practice.

Whilst most ITE courses based in universities, and some based in schools, have maintained a strong evidence focus (Beauchamp et al., 2013; Murray, 2016), McNamara, Murray and Phillips (2017, p.1) have implied that student teachers are encouraged to use this evidence passively, saying ‘the model of teacher-as-research-literate-technician now dominates formal government policy on the ITT curriculum’. The National Standards for School-based Initial Teacher Training Mentors states that student teachers should be enabled to ‘access, utilise and interpret robust educational research to inform their teaching’ (Teaching Schools Council, 2016, p.12), which focuses upon accessing and understanding research considered to be robust, without critiquing why it should be considered credible. In an evaluation of evidence-informed teaching commissioned by the DfE, Coldwell et al.

(2017) warned that reducing the role of HEIs in ITE could result in teachers not having the foundations upon which to develop research engagement as their careers progress.

Once qualified, teachers should ‘keep their knowledge and skills as teachers up-to-date’ (DfE, 2011, p.10) according to the preamble to the Teachers’ Standards. The need for access to research outputs in order to do this is acknowledged in policy and measures have been taken to enable this. According to the Royal Society and British Academy (2018), teachers in Scotland and Wales have access to academic journals via their mandatory membership to the General Teaching Council for Scotland and Education Workforce Council, respectively. Teachers in England and Northern Ireland, however, do not automatically have this kind of access to research, although the General Teaching Council for Northern Ireland is looking to align with the kind of access available in Scotland and Wales. The DfE (March 2016) stressed the need for teachers to have access to research evidence, taking inspiration from the medical model as Hargreaves (1996) had done two decades earlier. Morgan lauded the new CCT for offering members access to academic journals but membership is voluntary, calling into question the real availability of evidence to inform all teaching as has been proposed (DfE, March 2016).

Even if teachers could access research to ‘take responsibility for improving teaching through appropriate professional development’ (DfE, 2011, p.13) as the Teachers’ Standards specify, they are not currently required to engage critically with this research. The Standard for Professional Development states that PD should be ‘underpinned by robust evidence and expertise’ (DfE, July 2016) but teachers have no involvement in ascertaining this robustness. The policy message appears to be that evidence is robust if the ‘gold standard’ of RCTs has been used (Goldacre (2013).

The Cabinet Office (2013) of the Conservative-Liberal Democrat Coalition of 2010-2015 in England was so keen for practitioners to engage evidence from RCTs that they established the world’s first network of independent ‘What Works’ centres. These centres present evidence from RCTs with the intention that this is used by practitioners in order to make better decisions. Part of this network is the EEF, a meta-synthesis of RCTs in the form of a do-it-yourself (DIY) toolkit, initially established to narrow the gap in attainment between children from low socio-economic backgrounds and their more affluent peers (see, for example, Griggs, Speight et al. (2016). Combining two of the UK government’s favoured research models (Punch and Oancea, 2014), the organisation presents research syntheses of

RCTs to enable teachers to make ‘choices based on the best evidence from the UK and abroad about what really works’ (Morgan 2016). The new Chartered College of Teaching (2016, p.13) has stated that although the ‘‘what works’ approach’ of evidence syntheses will be utilised, they will be cautious not to overstate claims from any kind of evidence. As Koutsouris and Norwich (2018) identified, Goldacre’s (DfE, 2013) frequent references to ‘what works’ in his report to the DfE omits *why* an intervention may or may not be successful as RCTs only reveal *what* has worked, or not.

Whilst the DfE’s (2014) ‘Research Priorities’ offer classroom practitioners as well those in a management position access to direct educational research, it is quantitative data that is privileged in order to provide definitive answers to research questions posed (DfE, 2013), which may not be appropriate for the kinds of questions stakeholders may have, as explored via Biesta’s (2007a) writing above. This government agenda is detrimental to teacher education, where it is important for teachers to develop their thinking from a broad spectrum of different kinds of research (Peiser, 2016).

The policy rhetoric that teachers should engage findings from the ‘best evidence’ can be seen as disenfranchising the profession, as Kincheloe (1991) and Cochran-Smith and Lytle (2009) warned could happen but there is also the argument that this is preferable to education being based upon the personal judgements of policy makers. The latter is what Wyse and Torgerson (2017) discovered has happened in the teaching of grammar according to the national curriculum, which is different to what is effective according to their meta-analyses of RCTs. Wyse and Torgerson (2017, p.1044) do concede that where the combined evidence from RCTs is not compelling, ‘there is the option to further prioritise schools’ autonomy and teachers’ professional judgement’. The professionalism of teachers in making decisions in their own contexts is presented as being of secondary importance to teachers passively engaging findings from research, particularly RCTs.

2.2.3 Engaging with research

There is not much mention of engaging *with* research in contemporary policy documentation from England as the focus has been upon teachers passively implementing the findings from evidence (Godfrey and Brown, 2018). This shift is also found internationally; for example, in

Portugal the ITE framework in 2007 initially required student teachers to engage critically with research but has since been amended so this is not compulsory, though still an essential part of ITE programmes (Flores, 2018). Musset (2010) identified that some countries are returning to traditional models of ITE that consist of more cost-efficient practice-based learning as opposed to academic models via HE where research skills are taught to allow student teachers to engage critically with research. This criticality can still be achieved, however, if the content of these courses is grounded in evidence that the novice professionals are taught to be critical of in order to achieve the ‘professionalization’ (Musset, 2010, p.17) intended.

Whilst not explicit in the policy documentation in England, the importance of beginning teachers engaging *with* research is emphasised in advisory documentation, most notably in Carter’s (2015) Review of Initial Teacher Training. Even Goldacre (DfE, 2013, p.13), a proponent of teachers using findings from RCTs, has stated that this evidence should not be ‘presented as a complete canon of answers’, recommending that new teachers should be taught how to be ‘critical consumers’ of research. He proposed that this could be achieved by introducing new teachers to how research is conducted, as recommended by Punch and Oancea (2014). This may be more difficult in school-led routes into teaching, with Coldwell et al. (2017) advising the DfE that these courses should focus more upon research methods so new teachers can make more informed decisions about their use of findings from research.

For NQTs in recent years, engaging critically with research has not been a priority in policy documentation but has recently returned to the fore with the introduction of the Early Career Framework (DfE, 2019). Being critical of educational research had been encouraged in the past with the introduction of the Master’s in Teaching and Learning (MTL), briefly funded by the Labour government from 2009 to 2010. This required participants (mainly NQTs working in challenging circumstances) to ‘draw on and critique a knowledge base’ (TDA, 2009, p.12) and disseminate their findings to colleagues on a local level (Castle, Peiser and Smith, 2012). The absence of criticality in ECTs was identified by the Royal Society and British Academy (2018), who recommended that the DfE should support ECTs in understanding the nature of research, including the variety of research methods used in the field of education. This is now the case in the new Early Career Framework, which does explicitly mention ‘engaging critically with research’ (DfE, 2019, p.24).

As well as new teachers being aware of how educational research is generated, there is also a move towards more established teachers being enabled to be more judicious in choosing the evidence to inform their practice. Coldwell et al. (2017) have suggested that professional standards for qualified teachers should include a requirement to engage with research, not just use findings from research. This could be done, they proposed, via the Chartered College of Teaching, which aims to ‘present evidence so that practitioners can make professional judgements about the practice that is most likely to work for their pupils’ (CCT, 2015, p.13), thus being more autonomous in their use of research. The Royal Society and British Academy (2018) advised the DfE to acknowledge the importance of research-informed practice in the standards for teachers and in their PD framework.

2.2.4 Engaging in research

Again, there is a dearth of policy relating to teachers engaging in research, despite this being extensively theorised in the academic literature on research engagement in the teaching profession. What does appear in policy is the potential for teachers to engage in their own research as part of their ITE, though this is not as explicit as in other parts of the world, which is the starting point for this subsection. Moving on to opportunities to engage in research once qualified, this subsection explores the agency for TSs to conduct research within the self-improving school system.

International ITE

Whilst initial teacher ITE in England does not focus upon engaging in research, this is not the case internationally or elsewhere in the UK. In a working paper for the Organisation for Economic Co-operation and Development (OECD), Musset (2010), collated the policies of initial and continuing teacher education of OECD countries, identifying the degree of research engagement. In some countries, Musset (2010) found the explicit development of research skills in the content of ITE courses. She has named them as Australia, Denmark, Finland, Ireland, Norway, Sweden and South Korea and whilst not praising such ITE, Musset (2010, p.15) has noted that it is ‘interesting’ that these countries include the development of ‘research capacity’ (ibid., p.20) in their ITE curricula. Whilst it is not feasible to detail the research-related ITE programmes in these countries, the most significant for this study are outlined below: Finland, Sweden (and Estonia) and Ireland.

In Finland, engaging in research is an essential part of ITE. Jakku-Sihvonen et al. (2012, p.269) clarify that it is the focus on ‘research readiness’ as opposed to theoretical substance that is the reason for the ‘exceptional Finnish curriculum’ of teacher education. Maaranen (2009, p.219) explained that teacher educators as well as ‘teacher students’ conduct their own research in Finland, whereas up until the 1980s, ‘the main part of the research which dealt with a teacher’s work was carried out by academics who were not teachers themselves’ (Jyrhämä, 2008, p.2). Aspfors and Eklund (2017) used the experiences of newly qualified primary school teachers in Finland to conceptualise perspectives on research-based teacher education. They inductively found three advantages of a research-based teacher education: personal development, teacher professional competence and research competence. By bestowing student teachers with these characteristics, teachers in Finland start their careers with a strong foundation upon which to build and enjoy high status in society, which constitutes a profession according to Clarke’s (2018) ‘place’ model. They contrast this professionalism with how teaching is viewed in the UK, using the move to school-based ITE as an example of how ‘teaching as a research-based profession is diminishing’ (Aspfors and Eklund, 2017, p.2), even though this is unique to England, rather than to the UK as a whole.

The history of ITE in Sweden is similar to Finland in that the 1977 Act of Higher Education deemed that all post-secondary education should be part of the university system and this should be scientifically based (Drakenberg, 2001). Those training to become teachers are expected to be ‘researchers or at least have the opportunity of regularly engaging in research of their own’ (ibid., p.199). Similarly, Estonian teacher education includes studies of research methods (Jakku-Sihvonen et al., 2012, p.267) within a five-year Master’s programme, with no Bachelor’s-level graduation. Interestingly, the locus and focus of the above ITE programmes are universities and research, as is the case closer to home in the Republic of Ireland.

The setting for ITE in the Republic of Ireland are Colleges of Education (Clarke et al., 2012) with links to schools so that student teachers can participate in clinical practice (Department of Education and Skills, 2012) to synthesise their learning from research with the practicalities of the classroom. Reporting on the developments of ITE in Ireland, Sahlberg (2019) suggested that there could be more collaborative research projects undertaken between student teachers and their colleagues in their school placements as well as their HEI. There is more capacity for this research engagement as both the degree programme for primary school

teachers and the post-graduate diploma for secondary school teachers has been extended by a year. Sahlberg (2019, p.33) stated that although progress has been made, there is more to do to ensure that ‘all ITE students should be actively engaged in research of their own practice, reflecting on it and continuously improving their teaching accordingly’, going on to specify the importance of reading existing research and constructing new professional knowledge via the conduct of research.

Conversely, in the USA, ITE is being transferred from HE to non-university and fast-track programmes (Zeichner and Hollar, 2016). These often involve online tutorials alongside immersive learning in the classroom and rather than teacher expertise being developed by engaging with and in research, new teachers learn a set of pedagogical techniques to implement into the classroom. Zeichner and Hollar (2016, p.111) call this a ‘business capital approach’ because it provides a continuous supply of teachers who qualify fast and enter teaching as inexperienced, low-paid workers but only in the short term because they generally do not remain in teaching for very long. The focus in this paradigm is market competition and deregulation, which is also seen in England’s 16 routes into teaching (Benn, 2016?) and contrasts to the Republic of Ireland’s approved ITE colleges.

ITE in England

In England, there is a similar move towards alternative routes into teaching, possibly linked with teacher shortage, and whilst it might be the case that these school-based programmes lack a research focus (Ovenden-Hope and la Velle, 2015; McNamara, Murray and Phillips, 2017), there is one that actually has an explicit research focus agenda. Researchers in Schools (2014) allows those with a doctorate to become research-engaged teachers, working towards qualified teacher status in a ‘host school’. The objectives of the salaried school-based ITE programme are three-fold. It aims to bring subject expertise to state schools, particularly in maths and physics, for which there is an extra monetary incentive. Linked to this is participants’ role in promoting HE to their students. It is also the intention for the novice teachers on this programme to encourage both students and fellow teachers to take a research approach to teaching and learning, specifically mentioning AR (Researchers in Schools, 2014). A similar graduate training programme first started in Australia whereby a Master’s in Education allowed professionals from engineering, sciences and mathematics to qualify as teachers, with an emphasis on research as well as subject-specific pedagogical knowledge (Musset, 2010). Gibb (2015), Minister of State at the Department for Education, implied that

the programme in England may be a way of addressing the shortage of teachers in STEM (science, technology, engineering and maths) subjects by offering an attractive career trajectory. The Researchers in Schools (RiS) programme, therefore, could be interpreted not as a way to enhance teaching as an evidence-informed practice, but as a recruitment strategy that is research focused by proxy.

Whereas in England, more emphasis is placed upon student teachers engaging *with* research rather than engaging *in* research (Carter, 2015), in Scotland, successful completion of ITE requires candidates to access and apply educational research and know how to research their own practice. To be fully registered, teachers must have a critical appreciation of the implementation of research. Menter and Hulme (2010) conclude that Scottish teachers are not as passive as teachers elsewhere and Menter (2016, p.26) later highlighted how ‘in Scotland, teaching is considered a profession learned through a process of inquiry and intellectual development’, implying that it is the production of new knowledge via research that makes teaching a profession.

In England, Carter (2015) stressed the importance of mastering critique of existing research before new research is conducted by student teachers. He was not averse to student teachers engaging in the latter, however, and he proposed that engaging in research may involve ‘enquiry’, ‘trial’ and ‘evaluation’ (ibid., p.21). These research practices may not be possible in the time allotted, though (Orchard and Winch, 2015). The BERA-RSA inquiry (2014, p.6) suggested that ‘disciplined innovation and collaborative enquiry’ should be initiated in ITE and continue throughout teachers’ careers so this becomes the norm rather than the exception. TSs are obliged to participate in R&D but not the teaching profession as a whole as this is no longer part of the professional standards for teachers to meet (DfE, 2011).

In-service Teachers

Once qualified, teachers may engage in research via a Master’s degree. One such course that was intended for novice teachers to continue their education by engaging *with* and *in* research was the Master’s in Teaching and Learning (MTL), inspired, in part, by the Finnish model of teacher education (TDA, 2009). Critics of the MTL pointed to the ostensible professional autonomy that it promises whilst in reality restricting the PD of teachers with the use of mentors as coaches who guide Master’s students to a ‘prefigured

destination' (Frankham and Hiett, 2011, p.811). This discourse of professionalism within strict boundaries of institutional socialisation has also been identified by Evetts (2013). Perhaps a failing of the MTL was that NQTs had not acquired the research literacy needed to take responsibility for the entire research project, as is the case in Finnish ITE, which is inclusive of the MA qualification (Maaranen (2009). There has also been a Master of Teaching in Australia (Laughland and Bowen 2012), which has been critiqued as being too prescriptive.

Hargreaves' (2011) recommendation to the National College of School Leadership (later merged to form the NCTL, now also defunct) for a self-improving school system included teachers engaging in their own research as part of the development activities in the new 'Teaching School Alliances' (TSAs). TSs were originally assigned duties known as the 'big six': ITT, CPD, school-to-school support, succession planning, developing SLEs and R&D. As a proponent of practice-based professional development, Hargreaves (2011) suggested that teaching staff at TSs could design and deliver their own CPD programmes based upon an evolving evidence base from their own research. The new responsibilities for CPD in TSs were detailed further in the final instalment in the 'self-improving school system' suite of think pieces. In this document, Hargreaves (2012) outlined how to transform teachers' role in CPD from passive to active. He identified that in recent years, evidence-based practice had been identified by government and disseminated to teachers via intermediaries. According to Hargreaves (2012), the benefits of the new system of teacher-led school improvement is that it would involve more innovative thinking, which he recommended should be systematically tested for further development and dissemination. Godfrey (2016) identified that TSs in particular would benefit from Joint Practice Development (JPD), where teachers collaboratively plan, deliver and evaluate lessons, though he identified this process as being at the lesser end of a continuum that presented ways of teachers engaging in research.

It was the intention for TSs to 'spread high quality evidence' via their ITE and CPD courses (DfE, March 2016, p.39) but this evidence is not necessarily from teachers engaging in their own systematic research as envisioned by Hargreaves (2012). Brown and Zhang (2016) have noted that improvement strategies formulated by external others, rather than by evidence-informed teachers at TSs, are preferred by accountability bodies, thus legitimating the latter (see also Hardy, 2016) and making school leaders reluctant to subscribe to the

teaching and learning developments formulated by teachers, even if they are, arguably, more ‘contextually relevant’ (Brown and Zhang, 2016, p.783).

2.2.5 Summary of research engagement in policy

Godfrey (2016) acknowledged that the kind of research engagement that a school pursues will depend upon intentions and resources available, influenced by the current policy context of England, which will now be summarised. The main features of the policy field are the regulations that all teachers are subject to, the research-focused statuses that schools can apply for and the support that is available for both pre- and in-service teachers.

There is no direct reference to research engagement in the Teachers’ Standards (DfE, 2011) but being critically reflective is mentioned, which could be considered re-search as it requires teachers to look again at one’s own practice. There has been an attempt to utilise the knowledge generated by reflective teachers as the starting point for educational research conducted by others; therefore, whilst this appears that teachers are part of the research process, they are only involved in establishing research priorities and have no ownership of how that research is performed.

All levels of research engagement can be seen in Hargreaves’ (2012) self-improving school system but are dependent upon teachers’ roles and the schools or colleges within which they work. He described a successful model as team leaders (identified as outstanding practitioners) meeting to reflect but also ‘crucially look at public research’, which Hargreaves (2012, p.11) believed elevates the process to more than just reflecting (which is a Teachers’ Standard). Those involved in this stage lead inter-school teams in AR; therefore, the lead practitioners at least, engage *with* existing research before engaging *in* research of their own. Godfrey and Brown (2018) acknowledge that this kind of collaborative research across schools within an alliance is advocated in the policy discourse but suggested that this school system is insufficient. School leaders and teachers need to be incentivised more to link with HEIs according to Godfrey (2016). However, Godfrey and Brown (2018) acknowledged that funding for HEIs would be needed to be able to offer their support.

The self-improving school system is manifest in TSs, where R&D was originally part of the focus of schools allocated this status. Gu et al. (2014) praised areas such as ITE and

CPD but R&D did not receive this accolade, leading the research team to propose that R&D should be integrated into standard school-to-school improvement, rather than being a discrete element. This change was made, with the six-part remit been distilled into ‘the big three’ (ITE, CPD and school-to-school support) with R&D running throughout (Teaching Schools Council, 2017).

The place of research within initial and continuing teacher education is, however, contested. There is a divergence of routes into teaching, with a shift towards school-based ITE, with the role of research being less certain than in courses led by HEIs (Peiser, 2016). Carter (2015) had recommended that student teachers should be critical of their own practice and of research but the only research-related area of interest to the NCTL is whether ITE providers prepare new teachers to stay up-to-date with evidence from educational research.

This passive use of research is also seen in the Standard for Professional Development (DfE, July 2016) as part of the ‘what works’ discourse predicated on the medical model of professional practice. Goldacre’s advice to the DfE (2013) in *Building Evidence into Education* advocated the use of RCTs but did allude to teachers being encouraged to critique findings from research rather than being passive consumers. The Early Career Framework (DfE, 2019) stresses this criticality, which is what Coldwell et al. (2017) recommended should be the next step for the DfE’s evidence-informed teaching agenda. This evaluation emphasised the need for access to research in order for teachers to engage with it and use the findings if appropriate.

The CCT allows members to access research and to receive Chartered Teacher (CTeach) status. To receive this accolade, candidates have to demonstrate ‘the professional skills of self-reflection, application of sound evidence within teaching practice, design of interventions and evaluation of their outcomes for learners’ (CCT, 2015, p.13). Here, there is the opportunity to re-search one’s own practice via self-reflection, engage findings from research and conduct one’s own research. This appears data driven rather than exploratory or critical, which is what contributors to the BERA-RSA (2014) inquiry warned could become the misguided dogma of research engagement.

Policy needs to support schools in being research engaged, particularly providing time and the capacity to engage *with* and *in* research collaboratively and to disseminate through what Godfrey (2016, p.316) called ‘top-down support for bottom-up change’. Now that the government has provided the initial start-up fund for the CCT and RS Network, this could be

possible but Godfrey (2016) stressed the need for a research culture at a school level, which, as the last section of this chapter explores, is mainly enacted in TSs in England, as the policy context allows.

2.3 Research Engagement in Practice

The literature review now turns to studies of research engagement in practice, starting with examples of teachers *re*-searching through reflective practices, then teachers as passive consumers of evidence, moving on to teachers as critical consumers of research more directly, and turning towards notions of more active teacher involvement in producing evidence, with academic facilitation and collaboration. It is with this structure, mirroring the theoretical framework derived from Carr and Kemmis (1986), that the practices of teaching as an evidence-informed *profession*, as opposed to an occupation (Evetts, 2013), can be explored.

2.3.1 *Re*-searching

Studies have shown that teachers do not value knowledge from existing theories as much as from their own reflections (Luttenberg et al., 2017). Eberhardt and Heinz (2017) demonstrated this in their project, aimed at supporting modern foreign languages teachers in the Republic of Ireland to conduct inquiries into their own practice through a cycle of AR. The intention was for teachers to identify problems, analyse them (*re*-search), review literature (engaging *with* research) and gather their own data so the evidence-informed intervention could be analysed (engaging *in* research). What their participants valued the most in this cycle by can be identified as *re*-search. Engaging *with* research was, however, not valued and motivations for participating in the project were reported as exchanging ideas and resources to use in the classroom, peer observations for further development and being guided in reflecting more critically. As all three involve looking again at one's own, or others', practice, it can be deduced that what was important for these teachers was *re*-search, as epitomised in the paper's title 'Walk Little, Look Lots' (Eberhardt and Heinz, 2017).

There are examples of other initiatives where teachers only use their own reflections, as opposed to school data, to *re*-search their practice. The action of *re*-searching without

linking reflections to existing research is evident in a report on the impact of TSs. One TS, used as a case study by the NCTL (March 2014), was praised for their deployment of SLEs to analyse pupil data to inform practice. Data were evaluated by the SLEs in an iterative re-search process of tracking quantitative pupil data during the course of interventions. Although described as ‘research-based action research’ (ibid., p.17), there was no utilisation of existing research, just *re*-search of practices within the school, focused upon pupil outcomes. Menter (2016, p.34) has noted a greater use of re-searching quantitative pupil data in what he has called ‘new professionalism’, which involves the pretence of researching but is really geared towards accountability rather than autonomy.

One way for re-search to address a more public than local agenda might be LS. Rather than for accountability, this is a PD activity involving (preferably three) teachers planning a lesson together and jointly evaluating the learning that takes place in the ‘research lesson’ taught by one of the trio. Academics are also encouraged to observe this public ‘research lesson’ and to help the trio to publish of a paper on their work. This helps participating teachers to identify their own ‘practice knowledge’ and again, teaching is compared to medicine here as this knowledge is disseminated and replicated as is common amongst surgeons (Dudley, 2014). The theoretical basis of LS is based upon effective professional learning identified by Cordingley et al. (2004), which includes collaborative enquiry or experiment. Although defined by Hammersley-Fletcher et al. (2015, p.19) as ‘a practitioner-led research approach’, the enquiries or experiments that are part of LS remain as *re*-search rather than research if they do not build upon existing research and involve the systematic collection and analysis of data other than that generated by the participating teachers in their reflections.

Although the *re*-search process is shared amongst a trio in LS, thus alleviating time constraints, there are logistical barriers to its use in schools. A TS in Rea et al.’s (2015a) case study tried what they called ‘Lesson Study’ in triads and felt that teachers planning, delivering and reflecting upon a lesson in a group of three was beneficial, though was not always possible given timetable constraints. From interviews with participating teachers, Rea et al. (2015a, p.33) reported that the lead TS thought they had gathered sufficient evidence, that ‘lesson study has a real impact on teaching and learning’, but this evidence was itself gathered from *re*-search as opposed to research.

Hall (2014) reported on how LS had been practised in the secondary school in which he taught mathematics and acknowledged that it may not constitute research in the conventional sense. Working on the premise that teachers value sharing ideas about pedagogy with colleagues, LS was thought to be a way for teachers in the school to do this by collaborating in departmental triads. After planning teaching together, they used their classrooms as a ‘laboratory’ (ibid., p.12), as Kincheloe (1991) also proposed, to advance their own learning about teaching. Although Hall (2014) refers to engaging in LS as ‘research’, the participants did not use this word, instead referring to experimenting and exploring their own practice. As well as not being identified as ‘research’ by the participating teachers, Hall (2014) also admitted that reflections were not always documented. LS in this form, therefore, lacks the systematicity recommended by Stenhouse (1981).

A similar initiative to LS is JPD, which involves teachers collaboratively reflecting upon practice to generate new knowledge of how to develop. In a think piece for the National College for School Leadership (which later merged with the National College for Teaching and Leadership), Hargreaves (2012) intimated that TSAs have the capabilities to generate and share their own evidence, citing JPD as a way to do this. Based upon data from a national survey and case studies of TSAs, Gu et al. (2014) found that the R&D part of their remit was generally perceived to be daunting but that what they called ‘inquiry-led joint practice development’ was an emerging R&D exercise found to be beneficial in TSAs (Gu et al., 2015). The implication here is that the above practices of re-search, are more conducive to teachers’ work.

Evetts (2013, p.787) identified that ‘for the professional, of all kinds, the needs and demands of audiences, patients, clients, students and children become paramount’, which is possible via *re*-search as it is philosophical and individual to what the teacher, as a professional, deems to be problematic and worth *re*-searching. Research and reflective practice are sometimes conflated (Calderhead and Gates, 1993; Campbell et al., 2010; Jyrhämä et al., 2008; Maaranen, 2009) but this activity is identified as a distinct entity in this thesis. According to Carr and Kemmis’ (1986) model of professionalisation of teaching, this does not go as far as other research engagement practices, detailed below.

2.3.2 Teachers engaging findings from research

In this subsection, plans for an evidence-informed teaching profession via teachers passively using (or *engaging*) findings from research are outlined. These include well-intended initiatives that allow researchers to disseminate their findings to teachers, arguably de-professionalising teaching in the process. A more local and personable way of teachers using evidence from research using the TSA system is then explored before considering the different ways research may be used in schools.

How teachers access findings from research

Nelson and O’Beirne (2014) argued that what they call KMB is key to evidence-based approaches in the classroom. They use this term to describe the process by which evidence produced by researchers is made accessible for teachers to implement; however, they make no mention of teachers being able to understand and critique the evidence. What Nelson and O’Beirne (2014) proposed was summaries of research to be centrally maintained, which is what the EEF does. The Chartered College of Teaching is also ‘developing an online research dissemination and interpretation portal’ (CCT, 2015, p.17), which does not require the criticality that Carr and Kemmis (1986) advocated for the teaching profession.

A recent report by the Royal Society and British Academy (2018) looked into ‘harnessing educational research’, proposing the introduction of an Office for Educational Research made up of policymakers, researcher and teachers. It acknowledged the role of professional organisations, such as the Chartered College of Teaching, in exemplifying how research can be used in practice but proposed that the intention for the Office for Educational Research would be to facilitate collaborations between these stakeholders. Warning must be heeded from the US, however, where similar ‘collaborations’ have been identified as a way for researchers to disseminate their findings in a unilateral way rather than in a reciprocal exchange (Herrenkohl et al., 2010). Whilst seeking to establish a dialogue between research and practice with in-depth collaboration, Herrenkohl et al. (2010) identified that projects where this was supposed to have happened in the past have actually involved teachers passively using research rather than producing new knowledge collaboratively. Reviewing studies of research-engaged teachers in mathematics and science, where this superficial ‘collaboration’ has been funded in the USA, Herrenkohl et al. (2010) identified that these projects were used by researchers to disseminate their findings rather than open up a dialogue between theory and practice as intended. Whilst appearing to be exploitative of teachers, one

could also argue that teachers still benefit from access to research that they might not have had ordinarily.

The report by the Royal Society and British Academy (2018), whilst intending to help teachers harness educational research, may be interpreted as de-professionalising them in the process. It advises that researchers should undertake training in how to make their findings accessible to policymakers and practitioners, rather than putting the onus upon practitioners to access research and implement findings in their practice. Shifting the responsibility to researchers in ensuring that the teaching profession is research informed was also implied by Hammersley-Fletcher et al. (2015) but the Royal Society and British Academy (2018) can be seen as de-professionalising teachers by advocating more funding for the outputs of research to be presented in evidence syntheses. This proposal is well intentioned as they saw evidence syntheses as useful in education but this has been disputed by, for example, Williams and Coles (2007).

Another way of presenting research findings considered useful for teachers to use in their practice is in guides of ‘translational research’. MESH, which stands for Mapping Education Specialist knowHow [sic.] is an online platform of translational research, usually used in the medical professions (for examples of its use in nursing, see Whitty, 2016), which involves findings from research being translated into actionable practices for practitioners to use. Ovenden-Hope and la Velle (2015) studied the use of a MESH guide on the teaching of spelling in 120 primary schools, resulting in the translated evidence being made use of in education. From an online survey of quantitative and qualitative data, participating teachers reported that their use of the MESH guide enhanced their pedagogical content knowledge, which in turn had a positive impact upon their planning and their pupils’ learning. Ovenden-Hope and la Velle (2015) acknowledged that a challenge for the use of MESH guides is balancing prescriptive evidence-informed practice and the autonomy that teachers should enjoy as professionals (see Evetts, 2013). Using the MESH guide judiciously was not evident in this initiative and a focus was upon teachers engaging the findings from research, therefore not being enabled to exercise their professionalism.

MESH guides not only claim to present a variety of research outputs in an accessible form i.e. using graphs, they also aspire to be inclusive. One source of knowledge for the guides is the doctoral thesis, which Younie et al. (2018) believe is underused but useful in that theses tend to focus upon personal research interests rather than institutional remits.

Sources beyond the field of education are also included in MESH guides for use by subject teachers. The approach used is described as participatory, involving researchers and practitioners, though online guides are currently compiled by academics as the authors believe that practitioner contributions would require a cultural shift in the teaching profession. At the moment, Younie et al. (2018) see practitioner involvement in professional associations as a way of teachers contributing to the guides as the topics of the guides often originate in the agenda of these organisations. Younie et al. (2018) describe the guides as always open to new knowledge as and when this is created when teachers make use of the guides in their contexts. The idea of an evidence base not being complete until teachers take ownership of the knowledge (as in Moss, 2016) is a contrast to the reliance upon evidence from RCTs that is considered to provide conclusive solutions to teaching practice (Hammersley-Fletcher et al., 2015). This 'identification of 'finalities' and the 'right manner' of achieving them' (Murray Li, 2007, p.276) is seen in the 'what works' rhetoric where findings from RCTs are lauded in the superlative of the 'best' evidence to be used as the ultimate answer to problems faced by teachers.

An alternative to a repository of research outputs for teachers to access is the use of school dissemination, which has now become possible with TSAs, in which TSs have a responsibility to share R&D via school-to-school support. Williams and Coles (2007) saw inter-school relationships as the most effective way of encouraging use of strategies from evidence due to the accessibility and trust inherent in these networks. An example from the practices of TSAs that supports this can be found in Coldwell et al.'s (2017) evaluation of evidence-informed teaching. They reported that teachers were not convinced by research alone, contrary to what Brown and Zhang (2017) found, preferring to observe results for themselves or listening to other teachers talk about the benefits of evidence-informed strategies for young people.

How teachers use evidence from research

Now that teachers' access to research for use has been explored, attention is turned to how teachers use the research they may be exposed to. Cain (2015) studied how teaching practitioners from two schools understood and used research, concluding that there are three ways of using evidence in teaching: instrumental, strategic and conceptual. Instrumental research use is utilitarian in that it sees research as being able to solve problems in education. Using research instrumentally can be proactive or reactive, with the former involving new

research being commissioned or undertaken to solve the perceived problem and the latter being the use of existing research. An example of this in practice is that Gu et al. (2015, p.127), in their evaluation of TSSs, noted that ‘in some alliances School Development Plans are increasingly being influenced by research’. Cain (2015) identified that there is a perception here that the relationship between research and practice is linear. Strategic use of research starts with a solution and evidence from research is used to support this as a way forward. Again, either new research is commissioned or existing research found. Cain’s (2015) findings suggested that when research was used instrumentally and strategically, some research findings were ignored. Finally, conceptual use of research is indirect and dialogical in that teaching practitioners take ideas from research but do not necessarily implement them straight away - they synthesise knowledge from research with their personal expertise. This more intellectual relationship with research is more akin to the practice of engaging *with* research in the theoretical framework, which is the focus of the next subsection.

2.3.3 Engaging with research

It is Carr and Kemmis’ (1986) ‘practical’ model of teacher professionalism that involves teachers engaging *with* research. This subsection begins by exploring how this may be done in ITE, before moving on to how engaging with research is enacted by in-service teachers.

Initial Teacher Education

The notion of engaging with knowledge from both theory and experience was explored by Tann (in Calderhead and Gates, 1993), who highlighted the challenges faced by student teachers in articulating their critique of existing research. The latter is focused upon by Tann (1993), who concludes that it is the acquisition of professional educational terminology that needs to be addressed early on in the ITE course so student teachers can link educational research to their practice. Hargreaves (1996, p.2), in his seminal lecture ‘Teaching as a research-based profession’, noted that doctors are trained in the technical language of the natural sciences so are able to understand research related to their profession more so than teachers who ‘largely lack a shared technical language’. This need to ‘learn a new professional language’ in order to interrogate experience and research evidence is also noted by Counsell et al (2000, p.480).

The best way for student teachers to learn how to engage critically with research may be in a university setting. Musset (2010) has highlighted that the advantage of ITE being based in an HEI is that there is more contact with research, which is lacking in a school-based ITE programme such as Teach First, aimed at graduates with a first class honours degree. However, in a report on the new programme for the Teach First route, ‘critical engagement with research’ (Teach First, 2017, p.4), both during the course and once qualified, was cited as an important factor in the teaching profession. Elaborating upon what ‘an intelligent consumer of research’ means (ibid.), the report mentions having ‘professional scepticism’ (ibid., p.10) so teachers do not rely upon the findings from research but use their professional judgement to decide whether an evidence-informed approach is applicable to their teaching context. Keeping abreast with the latest educational research was seen by those interviewed by Teach First in the development of this programme as particularly important for school leaders, a role which Teach First participants are encouraged to pursue. The issue of teachers not having access to academic research was, however, raised in the report as a potential barrier to this engagement.

Continuing Professional Development

Attention is now turned to research engagement for in-service teaching practitioners, which is particularly viable in TSAs where there is the capacity for teachers to discuss research collegially. However, as will be explored, teachers exercising professional autonomy have engaged with research of their own volition. Whether in a network that supports engagement with research or doing this independently, access to research in the first place is needed, as is the ability to critique findings.

A way in which one TSA has been helping teachers to engage with research is through the use of a ‘research champion’ (Griggs et al., 2016, p.4). This involves a senior leader at one of the participating alliance schools working with ‘research leads’, other teachers and senior leaders to promote ‘engagement with research evidence’ (ibid.). The intention was to develop teaching and learning in each participating school with the longer-term goal of a positive impact on pupil outcomes (ibid., p.7). This initiative was evaluated by the EEF and although the evaluation only focused upon early outcomes of teaching and learning, with inconclusive results from their RCT, the initiative was discontinued. The intervention was referred to as a ‘dosage’ (Griggs et al., 2016, p.32) and outcomes were measured objectively via an RCT, which epitomises the current climate of positivism in

educational research (Elliott, 2009) that is reminiscent of the medical profession. Wyse and Torgerson (2017), however, posit that RCTs have begun to utilise qualitative data from process evaluations and ethnography in more recent years.

In Australia, there is a similar policy discourse of implementing or discarding strategies based upon the objective outcomes of research but there is an example of teachers in one primary school who decided to engage with research on a more intellectual level. Hardy (2016) looked into how teachers in one Australian primary school implemented ‘explicit teaching’ into their practice as research had suggested that this approach was effective in an elite private school and the policy context encouraged the uptake of evidence-based practices such as this. Some teachers did not merely engage the findings from the research but critiqued why it might be the case that a pedagogic strategy might work in one context but not in their own, citing economic, socio-political and cultural factors as reasons for this. In the example, therefore, teachers were engaging *with* the research critically.

Engaging with research by discussing academic outputs with colleagues has been found to be useful for teachers, though it is debatable whether the engagement with research itself is beneficial as there are other factors at play in this process. Ovenden-Hope et al. (2018) piloted a CPD programme aimed at retaining ECTs in the profession by facilitating their access to research findings and their interpretation of the evidence according to their situated practice. In professional learning communities, ECTs could discuss the evidence they were presented with rather than being provided with evidence-informed approaches (to literacy, in this case). This initiative was based upon suggestions by Cain (2015), who identified that engaging with research requires three ‘voices’: from the teacher, their colleagues and the research. An independent evaluation, funded by the EEF, found that the programme was successful due to its collaborative nature, combined with the taught elements and the coaching that the ECTs were provided with. The success of the scheme, therefore, may have been due to the support that was available to ECTs rather than the research engagement element itself. Coldwell et al.’s (2017) study also noted a link between collegiality with other schools and retention, which may have made more of a difference than the research engagement that was the focus of their study.

Brown et al. (2018) acknowledged that research engagement is a social process and recommended systemic dedication to enable teachers to engage with research collaboratively. This could be on a school level or, with TSs having the responsibility of R&D, on an alliance

level. From analysing data from a survey and social networks used by 389 teachers in 42 primary schools in England, they concluded that encouragement from senior leaders and being part of a trusting and innovative workplace enhanced what they called research-informed teaching practice (RITP). This is because schools with these characteristics facilitate access to research, enable teachers to discuss this research, and hold this process in high esteem.

Lack of access to journals and support in engaging with existing research reinforces perceptions of research being burdensome according to Menter and Hulme (2010). Access to research could come from participation in a Master's level qualification, which could also enhance teachers' 'information literacy' (Menter and Hulme, 2010, p.113). The BERA-RSA (2014) report also proposed that these resources could be provided by university faculties of education and beyond, for example by organisations like the Chartered College of Teaching. A vision in this report was for teachers to have online and on-site resources to develop what is referred to there as 'research literacy' in engaging *with* research as well as *in* research. The latter is the focus of the next subsection, which explores the final element of the theoretical framework that presents teaching as a true profession in its own right whereby teachers are enabled to advance a critical dialogue with the existing knowledge base by engaging *in* their own research.

2.3.4 Engaging in research

In reference to evidence from educational research, the CCT has noted that 'an increasing proportion of the relevant evidence is generated within or in partnership with, the profession' (CCT, 2015, p.12). What follows is a review of studies concerning teachers engaging *in* their own research and the benefits of this being contextual. There are examples of teachers conducting research independently and some are researching in partnership with others, as alluded to by the CCT. The impact, both positive and negative, is explored in the international context, before different forms of collaborative research are explored: with academia, other teachers and with learners. Attention then returns to academia, with the focus switching to this being an enabler of teachers researching, through research facilitation.

Independent Research

In an evaluation of the School Based Research Consortia initiative, participants perceived research to be pertinent to the needs of teaching in general (Kushner et al., 2001), with research in this context referring to evidence gathered by teachers engaged *in* their own research projects. Simons et al. (2003, p.348) later linked this scheme to the promotion of ‘a profession that is guided by the systematic use of research evidence – in particular, classroom research’. This could be, as Zeichner and Klehr (1999) found in the US, because when teachers directly select topics meaningful to them and research their own practice to inform improvements, this is seen as effective PD. Using Carr and Kemmis’ (1986) model of the professionalisation of teachers, this research engagement practice does indeed elevate teaching to a profession as teachers are generating their own knowledge.

The methods used by teachers conducting their own research are varied and contested, not least because of the limitations of small-scale research (CCT, 2015). Teachers researching in TSs use observations, questionnaires and AR (Hammersley-Fletcher et al., 2015; Rea et al., 2015b). In Maxwell et al.’s (2015, p.37) study, 'two interviewees from different schools, in different interviews and without any prompting from the interviewer, raised the issue of teachers' perceptions of control groups, explaining that personally they did not feel it ethical to adopt this approach to enquiry'. RCTs, however, continue to be promoted to teachers (Churches, 2016; Torgerson and Torgerson, 2013).

Cordingley (2013) has suggested that effective CPD includes enquiry and this has also been found in international empirical studies by the Organisation for Economic Co-operation and Development (OECD). Findings from the OECD’s Teaching and Learning International Survey (TALIS), found that, globally, teachers researching either individually or collaboratively is considered one of the three most effective activities that could form CPD. Teachers responding to the TALIS survey reported that effective ‘products’ (or outcomes) were linked to the research engagement that was part of their in-service education (Musset, 2010). Similarly, Barrera-Pedemonte (2016) deduced from more recent TALIS data that teachers who participated in individual or collaborative research activities were more likely to report the use of the teaching practices that were deemed effective in the study. Concluding that teacher PD is best when collaborative, this report further suggested that this could include researching with other teachers.

Collaborative Research in the International Context

Reporting on the PD of teachers in Norway, Sweden, Finland and Australia, Hardy et al. (2010) concluded that collaborative AR was the ideal PD but that this is being overlooked in favour of teachers passively using evidence from existing research. It was found that in Australia, effective collaborations with academic researchers in ‘praxis’ (combining theory and practice) had been happening from the early 1990s (see also Lingard and Renshaw, 2010) but that now technical approaches are replacing teacher-directed PD in order to focus upon improving educational outcomes for disadvantaged young people. Contrary to this social justice aim, it is suggested that this method of PD ‘may marginalise teacher learning likely to address the needs of students in the most dire material circumstances’ (Hardy et al., 2010, p.83). Parallels can be drawn here with the Education Endowment Foundation (EEF) in England which seeks to help schools use ‘Pupil Premium’ (PP) funding wisely by presenting teachers with ‘what works’ for children eligible for this funding i.e. children who are socio-economically disadvantaged.

In a similar way, collaborative AR in Sweden and Norway has been replaced by specific training in key curriculum areas to improve outcomes in international tests. Jyrhämä et al. (2008, p.3) note that Finnish pupils score well in international comparative tests and speculate that this could be due to their research-based approach to teacher education, where ‘teaching and research on teaching are integrated’ and they conclude that teachers appreciate this. Jakku-Sihvonen et al. (2012) linked this research-rich ITE with it being a part of HE since 1971.

Although PD via teacher research was found to be prevalent in Finland, it was inferred by Hardy et al. (2010) that it is too localised to individual teachers as it does not involve collaborative AR. However, Hardy et al. (2010) extolled the strong sense of professionalism in Finnish teaching, which Maaranen (2009) linked to engaging *with* and *in* research. Hardy et al. (2010) concluded that respect for teaching in Australia and other Anglo settings has diminished over the last 30 years, ending with a warning to Sweden and Norway to be mindful of this direction. As the policy context of this thesis alludes to, this link between professionalism and research engagement is relevant to contemporary teaching in England.

In the US, Herrenkohl et al. (2010) identified some projects identifying as ‘collaborative research’ as exploitative in comparison to their own a teacher-researcher collaboration. Their collaborative research project involved a post-doctoral researcher and

two school teachers, one new to the profession and one more established and they were all named as authors, unlike in Broadhead (2010). They saw the ‘researcher-teacher’ model as consisting of a researcher based in a university working with a school partner to provide access to teaching practices for them to research (see something similar in the UK by Lingard and Renshaw, 2010). The project in the example presented by Herrenkohl et al. (2010) can be seen as truly collaborative as although they began with the discrete roles of ‘researcher’ and ‘teacher’, these demarcations became blurred as they worked together on designing a unit of work to be taught and evaluating the impact it had upon learning. The two teachers studied for advanced degrees during the project (see also Passy et al., 2018) and were involved in disseminating findings at conference and amongst the teaching community, which added to the career satisfaction of the teachers. Herrenkohl et al. (2010) concluded that such initiatives should be supported by HEIs to aid the co-ordination of theory, research and practice.

Collaboration with Higher Education in the UK

An initiative in the UK that encouraged teacher research in collaboration with HE was the Best Practice Research Scholarships (BPRS), awarded by the Department for Education and Skills (DfES) to some practising teachers between 2000 and 2003 (Lambert and Hollinshead, 2004). For teacher-researchers working with the University of Wolverhampton, this funding allowed access to all of the university’s resources, tutorials on ‘research skills’ and support and guidance from researchers to report their findings at local and wider levels. Mutually beneficial collaborations between teachers and researchers in HE were encouraged, with the result of ‘linking theory and practice in a very concrete way’ (Lambert and Hollinshead, 2004, p.8). As with the School Based Research Consortia Initiative, which enabled HE academics to become more sensitive to the realities of practice and policy contexts (Kushner et al., 2001), this project was not repeated when funding ceased (Godfrey and Brown, 2018).

Passy et al. (2018) reported on an example of a learning partnership between a university and local schools whereby ‘university practice schools’, which are common in Finland, Japan and Hungary, were assigned a ‘University-based Researcher-in-Residence’. This enabled collaborative school-based research to take place, for the benefit of teachers’ education as well as allowing university staff to re-connect with school practice. The project intended to facilitate the evaluation of innovative approaches to teaching and for teachers and university staff to disseminate the outcomes of their collaborative research to other schools in the region. There are also implications of financial gains for the university, with participating

teachers paying for a Master's degree, for example, and also mentioned is the possibility of attracting research funding as potential research projects would have already been piloted in the university practice schools. What the schools acquire is the research expertise of their Researcher-in-Residence (RiR) who would have similar research interests to the school, for example special educational needs and/or disabilities (SEND).

In Norway, there is close collaboration between student teachers and teacher educators, based in both schools and universities, to teach ITE via research projects. Husebo (2012) studied student teachers in Norway who were working towards a Bachelor of Arts degree using collaborative AR to examine practical issues pertinent to their learning supported by a community of practice made up of school-based educators and university-based educators. This process is similar to LS, which Dudley (2014) has said works well with three practitioners of varying teaching experience who plan a lesson together and jointly evaluate the learning that takes place in the lesson taught by one of the trio. The project started with the researchers defining research questions but the participating student teachers later settled on their own research objectives. They developed principles of pedagogy and methodology in research groups then applied an intervention to at least two different classes which would be observed and evaluated collaboratively in order to develop lessons further. The second iteration involved implementing the revised strategy in a different class. This process was very well received by all involved and changed practice. Husebo (2012) concluded that university-based educators, school-based educators and student teachers collaborating on theory and practice is key.

Collaboration with Learners

In the UK, there are examples of teacher-researchers collaborating with their pupils. Cooper and McIntyre (1996) believed that educational research to inform practice should consider the perspectives of teachers and pupils. Building on Stenhouse's (1975) use of pupils as observers in the Humanities Project, Cooper and McIntyre (1996) found the benefits of teacher-researchers discussing with pupils what they had observed in the lessons under investigation. A similar practice was used in the LS reported by Hall (2014, p.18), although pupils were called 'students as learning partners' in this case, rather than being known as a 'research informant' (Cooper and McIntyre, 1996, p.36). Interestingly, the latter placed more

validity on events as observed by the collaborating researcher, which were seen as more reliable than events reported by the teachers and pupils but not observed by the researcher.

There is an ITE model in Scotland involving student teachers staging co-inquiries with pupils and other stakeholders such as parents. This initiative was implemented by two universities with shared interests in ‘an inquiry approach to learning and teaching’ (Livingston and Shiach, 2010, p.87). The Standard for Initial Teacher Education in Scotland necessitates knowledge production as well as research use, whereas there is no such expectation in England to warrant such an initiative. This project also required close collaboration between the universities and the schools in which the students carried out their practicum, which is not necessarily possible in England where there is a move to school-based ITE. Livingston and Shiach (2010, p.88) saw the importance of school-university collaborations for the logistics of this ‘investigative approach to school experience’ but also thought that the ‘collaborative, responsive, ongoing inquiry approach is the only effective way for teacher education institutions and schools to recognise and develop a sense of co-responsibility for teacher preparation’.

Facilitation by Higher Education

There have been numerous initiatives to aid teachers in conducting their own research; for example, in 2008 in England, an independent charity called Campaign for Learning which specialises in life-long learning, received government funds to facilitate practitioner research. Thomas et al. (2014) reported on 41 participating primary and secondary schools, including three in the SEND sector, where teacher research was cyclical throughout a school year, aided by two universities. Mostly, this involved lead teacher researchers trialling something new with their pupils. They worked with researchers, who advised them to gather data that were pertinent to them and their colleagues rather than to the researchers guiding their research methods, as in Wall and Hall (2017), outlined below. At the end of the academic year, the teachers presented their findings as case studies. The role of researchers from the two facilitating universities was praised by participants, who said that this partnership not only helped with the process of research but their motivation.

Wall and Hall (2017) have reported on their involvement in the same Campaign for Learning partnerships, which consisted of more direction from academics than in the above

example. In this version of the scheme, school teachers and university academics were paired up so that the latter could advise in an ongoing dialogue via email or telephone. Advice could pertain to the development of research questions and success criteria, the construction of research tools such as questionnaires and the analysis of data. The university team also formatted the case studies written by the teachers so all adhered a pre-agreed presentation of findings.

The facilitation offered by researchers does not have to be as prescriptive as above, with the role of the researcher being one of a 'critical friend'. Duncalf et al. (2017) reported on a CPD project that involved academics from a university working with teachers on a Master's level course that required practitioner enquiry. The role of academics was to facilitate criticality in what teachers were discovering for themselves about their own practice. The perceptions of participants, gathered through questionnaires and interviews, was that this scheme was successful in cultivating the professional learning of teachers.

According to McLaughlin (2010), teachers want their professional learning to involve more research opportunities but external support may be needed for research training and bridging ideas and existing evidence. McLaughlin (2010) was reporting on a project called the Networked Learning Communities Programme, where teachers collaborated with each other, aided by researchers, for the benefit of all involved. The aim of the project was school improvement via collaborative research projects as part of their CPD using a variation of LS, named as Learning Study, as a vehicle for teachers collaboratively reflecting. Data were systematically collected and analysed, elevating it from *re*-search to engagement *in* research. In the example reported, the methodological 'tools' (ibid., p.174), chosen by the participants but guided by academic partners, were observation, student feedback, post-lesson discussion and reflection. Those present were randomly assigned three students to keep a time log for, focusing upon behaviour and engagement. Notes were also made of teacher questions, digressions and time management to make connections between teaching and learning. An academic partner who has experience of teaching practice was recommended to take their research further. This academic partner could justify the process, assist teachers with data collection and interpretation strategies, be a critical friend, help teachers to write papers for professional associations and they themselves learn from the 'natural experiment' (ibid., p.171) as well. This symbiotic learning process for both teacher and researcher was also proposed by Cochran-Smith and Lytle (1990) and demonstrated by Livingston and Shiach (2010).

McLaughlin's (2010) study of the Networked Learning Communities Programme revealed that the research evidence produced by teachers, with help from researchers, was more valuable to other teachers than research outputs from academics. In this scheme, 'schools collaborate on the agendas of research and share with each other and the outside world the knowledge and learning' (ibid., p.163), which is quite different to the policy agenda of research coming from teachers' agenda rather than the research community (DfE, 2013; 2014). Rather than teachers setting the research agenda for researchers to fulfil, it was the intention of McLaughlin's (2010, p.158) project for a reverse of this so that it is teachers who 'produce research to be publicly shared'. According to McLaughlin's (2010, p.160) survey, 'teachers were a credible source for research and that hearing colleagues share their research motivated other teachers'.

Research facilitation schemes require co-ordination, either from the facilitators or the schools receiving the research support. The evaluation of the TTA Research Consortia Initiative, which allocated grants to universities for helping teachers in 'developing a common 'language' for research' (Kushner et al., 2001, p30), acknowledged that 'neither schools nor LEAs were able to sustain the focus or to devote the resources to central co-ordination of the research organisation' (ibid., p.32). Co-ordination of school research is now the responsibility of certain schools with TS status and whereas Campbell and McNamara (2010) have suggested that previous government funded research initiatives excluded the necessity of HE, reports of TSs found that schools with this designated status benefit from HE (Gu et al., 2014; Taylor et al., 2014; Stoll, 2015). There is, therefore, a vital role for academic researchers in the 'self-improving school system'. A TS in Rea et al.'s (2015a, p.87) case study focused upon 'teachers as researchers' and with help from a local HEI, this philosophy ran from the TS's commitment to ITE up to the succession of SLEs. In Gu et al.'s (2015) case study, the majority of TSs reported HEI partners as positive facilitators of R&D, notably because of the resources available to them, their knowledge of research and skills in researching.

2.3.5 Combinations of research engagement

Of course, the elements of research engagement as set out in the theoretical framework do not necessarily occur in isolation in practice; in fact, they often complement each other, so this

next subsection explores combinations of research engagement practices. Following the continuum inspired by Carr and Kemmis (1986), this subsection begins with combinations of ‘*re-search*’, both in conjunction with the passive use of existing research and engaging more critically *with* research. The focus then shifts to the use of research to inspire engagement *in* research. There is then a move towards more critical practices of research engagement, involving engagement *with* existing research combined with engagement *in* the creation of new research, followed by how this new knowledge may be engaged *with* by other teachers. Finally, examples of teachers participating in all forms of research engagement are presented.

Re-searching and engaging findings from research

As in the Finnish model of research engagement (Jyrhämä et al., 2008), student teachers in an ITE programme at the University of Melbourne were encouraged to use their *re-search* of pupil data by way of reconnaissance to engage findings *from* research that may improve educational outcomes in what was termed ‘clinical praxis’ (Dinham, 2013, p.229). This was part of a Master of Teaching, which replaced undergraduate teacher education degrees, under the rationale that ‘one of the key principles underpinning the programme is the focus upon evidence or data about learners’ (Dinham, 2013, p.228). A reason for this focus was the perceived need for teachers to ‘diagnose’ problems in educational settings and implement ‘prescriptions’ (ibid., p.227) like health professionals.

In the UK, Burn and Mutton (2013) have critiqued the ‘what works’ rhetoric which implies that solutions to problems in education can be solved by engaging findings from research; instead, they proposed that student teachers should be researchers of their own evidence-informed practice via a problem-solving approach. The evidence used to inform practice for student teachers to research is inclusive of pupil data as well as academic outputs. Their review for the BERA-RSA inquiry focused upon research-informed clinical practice in ITE, similar to the Australian model of Dinham (2013). They highlighted the importance of dialogue between research and practice, stressing that research does not simply translate into practice and that teacher education should enable student teachers to reflect upon the research they use in practice. They believed the move to ITE models consisting of longer school experience could displace research-based knowledge so there is *re-search* but no use *of* existing research.

This supposed absence of research is not the case in the Teach First school-based ITE programme in England. Their definition of ‘evidence’, which student teachers should use to inform their practice, includes teacher-generated evidence about their pupils’ characteristics and attainment data as well as findings from academic research (Teach First, 2017). Teachers’ reflections upon practice alone were considered as insufficient for in-service teacher education if there is no challenge to current practice and changes made according to an evidence base from research. Student teachers on this programme, therefore, are encouraged to *re-search* their own practice critically as well as use external research to develop their teaching, both in their ITE and beyond.

Re-searching and engaging with research

One ITE programme, the Oxford Internship Scheme planned between 1985 and 1987, has fully integrated ‘research and theory-based knowledge’ with the practical perspectives of practitioners (McIntyre, 1997, p.5) thus combining *re-search* and engagement *with* existing research. Evetts (2013, p.785) identified that a feature of a profession rather than an occupation is that ‘new recruits develop the expertise to put theoretical knowledge into practice’ but Mutton (2016) believed that this does not go far enough. Mutton (2016, p.212) has recently praised the Oxford Internship Scheme for rejecting the ‘theory into practice’ paradigm, which relies upon findings from research alone, and the ‘apprenticeship’ model where there is no research engagement at all.

Student teachers in the Oxford Internship Scheme were encouraged to question sources of knowledge, both from the school in which they completed their practicum and from the existing research they were engaging with during their time at the university (McIntyre, 1993). It was the role of ‘university staff to bring research perspectives and research-based knowledge’ to teacher training but McIntyre (1997, p.3) recognised that teacher educators had a tendency to be too idealistic in their advice, which was removed from the realities of the classroom. All knowledge, therefore, was intended to be critiqued. Universities and schools each offered their expertise to students: ‘research and theory-based knowledge and perspectives from the former, and situated knowledge of teaching and schooling and practical perspectives from the latter’ (McIntyre, 1997, p.5). The intention was that each source of knowledge would be used to interrogate critically the other, thus the novice teachers were engaging *with* academic research as well as engaging with their own *re-search*. McIntyre (1993) admitted that even in the Oxford Internship Scheme where

engagement with experiential and academic knowledge was a focus, the constant questioning of all knowledge from *re*-search and existing research is not always possible to do (see also Campbell and Groundwater-Smith, 2010).

Counsell et al. (2000) have studied the more traditional form of ITE, typically manifested in Post-graduate Certificate of Education (PGCE) courses, and again stress the importance of engaging with educational research, in dialogue with professional practice. The authors used examples from secondary PGCE students at the University of Cambridge to demonstrate how educational research integrated into ITE is useful when relevant to the student teachers' experiences and of significance to the teaching community. In this model, the so-called 'answers' (ibid., p.469) from what Counsell et al. (2000, p.470) call 'shelf-knowledge' are not just adopted but critiqued by beginning teachers and used to inform their knowledge base. This knowledge can then be used to question individual practice, which simultaneously requires awareness of practice in the classroom and reasons for that practice. This awareness is challenging even for an experienced teacher (Burn, 1997) but is 'a necessary precursor to the use of educational research in developing one's teaching' (Counsell et al., 2000, p.468). Using *re*-search to critique existing research is what sets engagement *with* research apart from engaging findings *from* research.

Engaging evidence from research and engaging in research

Burn and Mutton (2013) warned against the underuse of evidence from research as well as its misuse as a panacea (see also Simons, 2003). To prevent the reliance upon research alone, there are examples of teachers engaging *in* their own research to re-contextualise the findings *from* research done elsewhere, as explored next.

In the Teach First ITE course, a school-based route into teaching in England, the focus is upon teachers using research evidence to inform their teaching but the possibility of engaging *in* research upon completion of the programme is also alluded to. For example, the programme is now across two years 'for smooth progression into further study or research' (Teach First, 2017, p.2).

There are examples of TSs where teachers are encouraged to engage the findings from research then evaluate the impact of the evidence-based strategy that has been implemented. Rea et al. (2015a) reported on a project where school leaders received support from a university research team to help them to evaluate a strategy recommended by other groups of

schools. Whilst this can be identified as engaging findings from *re*-search, rather than research, several participating TSAs decided to review evidence from external research before implementing a strategy. One TSA noted the valuable input from a local university in sourcing this literature. Rea et al. (2015b) highlighted that future projects seeking to enhance pedagogy should be based upon existing evidence and data should be collected to identify impact. These school-based enquiries, it was recommended, could be used to inform the content of staff CPD and one TSA was reported as producing their own journal of the practitioners' enquiries made within the alliance. Rea et al. (2015b) concluded that this kind of R&D within a TSA could be beneficial for schools, learners and teaching practitioners.

Another TS studied by Rea et al. (2015a) had introduced a CPD model that they called teacher learning communities (TLCs) to create 'a culture in the school where improvements in professional practice is informed by evidence' (Rea et al., 2015a, p.81). These TLC groups involved reviewing interventions that had the most efficacy according to meta-analyses. As well as engaging the findings *from* this research, teachers also used the EEF DIY toolkit to engage *in* their own research as to how effective the strategies were for them. Each TLC was led by a teacher who had been trained in enquiry according to a handbook created by the TS. Surveys issued by the TS show that the majority of participating teachers reported that 'an enquiry-led, evidence-based professional culture was beginning to bear fruit' (Rea et al., 2015a, p.83).

Participants in one TSA studied by Maxwell et al. (2015) had engaged findings from research via an intermediary who sourced research outputs for them, allowing them to build on these findings through their own research. The opportunity to observe their own classes and classes in other schools and to analyse data on attitude and behaviour was found by Maxwell et al. (2015) to be particularly helpful for their PD. This was the first time they had worked with data other than the routine attainment data collected as standard in schools and the participants reported that the main benefit of engaging *in* research was generating new knowledge.

Evidence-informed practices in research-engaged schools usually involves teachers using findings from research to trial for themselves rather than passively accepting what the evidence suggested (Coldwell et al., 2017). In their evaluation of evidence-informed teaching, Coldwell et al. (2017) reported the characteristics of the most highly research-engaged schools, determined by criteria which included promoting research use, valuing

quality evidence and evaluating the changes that had been informed by evidence. How systematically this further research was carried out varied from *re*-searching at one end of the spectrum and engaging *in* research at the other extreme, via ‘action research, other forms of research or lesson study’ (ibid., p.31).

Systematicity when engaging the findings *from* research and engaging *in* one’s own research was important for Simons et al. (2003) in relation to the School-based Research Consortium Initiative. From their perspective, a strength of this scheme was that it encouraged teachers to ‘do and use research’ (ibid., p.349) in conjunction with Local Education Authorities (LEAs) and universities. They praised how teachers were encouraged to ‘use evidence of research elsewhere in a more systematic way’ as well as enabling them to participate actively in research that would be ‘more than engaging teachers in action research’ (ibid., p.351). What can be inferred from this is that some versions of AR are missing either the systematic use, or generation of, research evidence.

Coldwell et al. (2017) concluded that for more schools to achieve high levels of research engagement:

1. evidence needs to be more accessible;
2. research should be part of the culture of the teaching profession; requiring,
3. research skills.

From the content analysis of TS websites, Coldwell et al. (2017, p.38) reported that the weakest areas of research engagement were ‘recognising the value of quality evidence’ and ‘promoting evaluation’. Links between schools and universities were cited as one consideration for the DfE as all of the schools identified as highly research engaged had partnerships with HE to promote criticality. It is criticality, when engaging *with* existing research and engaging *in* one’s own, that is dealt with next.

Engaging with research and engaging in research

Burn and Mutton (2013) have proposed that there should be a fully-integrated system which acknowledges teachers as researchers, which is the case internationally. In the Portuguese context, where a two-year Master’s degree is required to teach any age group, Flores (2018, p.13) emphasised that ‘student teachers and teachers are not only consumers but also producers of their professional knowledge’, pointing to collaborations between schools and universities to enable teachers to transform existing research about education into

contextualised knowledge via teacher research. Similarly, all comprehensive school teachers in Finland have a Master's degree, which has also been the case in Norway since 2017 (Aspfors and Eklund, 2017). ITE in Finland involves student teachers conducting enquiries and critically reading educational academic literature (Jyrhämä et al. 2008). Through research engagement, student teachers in Finland learn to reflect upon their own practice, often via the systematic collection of data in AR, and they 'question established research results' (Aspfors and Eklund, 2017, p.9), therefore engaging *with* and *in* research. By doing this for a Master's dissertation, student teachers 'were able to relate the research projects they carried out to teaching in a practical context' (ibid., p.8). Not only do teachers in Finland have a research-orientated approach to their own practice, they also develop the findings of other researchers through further evaluation. Burn and Mutton (2013) attributed school and system improvement to this clinical practice. Whilst praising this research engagement, Aspfors and Eklund (2017) also acknowledged that participants reported the over-use of research activities, at the expense of other areas of education they were interested in learning about, such as SEND provision.

The research project undertaken during ITE for the MA thesis, which is normal practice even in BA ITE courses in Finland, is followed up in PD once qualified and elsewhere on continental Europe, the importance of this continuation has been acknowledged. In Sweden, there was a problem with in-service teachers not engaging *with* research so an initiative was put in place that not only solved this problem but also encouraged teachers to engage *in* research (Drakenberg, 2001). Acknowledging that engaging *with* research can make a great contribution to classroom practice but much of what is produced is not read by classroom teachers, resource centres were established, which bring student teachers, teachers and researchers together regularly. This has led to educational research playing a pivotal role in PD rather than the 'quick fixes' (ibid., p.200) of the past when findings from research were engaged without individuals critiquing it with context in mind. These fora also 'facilitate the active involvement of classroom teachers in the research process' (Drakenberg, 2001, p.203).

The importance of continuing to engage with and in research is also acknowledged in the English context. Tann (1993, p.468) proposed that in-service teachers should continue their engagement with research and 'engage to some extent in the process of research' if they are to impart their expertise to novices (also Burn, 1997), particularly with school-based ITE courses gaining momentum. Hammersley-Fletcher et al. (2015), however, found that 'staff are far less confident about engaging in their own research than engaging with research'

(emphasis in original) so more needs to be done, especially in TSs, where teachers have a responsibility to participate in R&D.

Rea et al. (2015a) published case studies of how 12 TSs approached the R&D network national themes project that ran from 2012 to 2014. One TS was part of a multi-academy trust (MAT) where all members were encouraged to engage in R&D. The vehicle for their research project was named as JPD but it appeared to go further than the usual JPD cycle of collaboratively planning and observing lessons. Their research engagement involved reading academic literature and research published by the British Film Institute (BFI) to develop the teaching of writing by making use of moving images. There was a project leader in each participating academy who evaluated impact via pupil questionnaires and writing assessments before and after the project; therefore, teachers were engaging *with* and *in* research.

In three of the five participating TSAs in Maxwell et al.’s (2015) study, funding was used to commission external support, which gave additional capacity and access to knowledge, with Maxwell et al. (2015) concluding that it was the collaborative nature of R&D that had impact. Although 44% of responding participants from TSAs said they had not used external expertise, it was found that collaborating with ‘research experts’ (ibid., p.9) gave teachers the confidence to engage *in* research, which had been an issue in Kushner et al.’s (2001) study. For example, a vignette described one alliance using a local university partner as a mediator of current academic literature and in the design of research instruments, ethical considerations and the collating of data. Table 1 displays the combinations of research engagement and is followed by the use of the outcomes of these practices by other teachers.

Table 1: combinations of research engagement in practice

	Engaging findings from research	Engaging with research	Engaging in research
Re-searching	Clinical praxis in ITE	Questioning research and practice i.e. Oxford Internship Scheme	
Engaging findings from research			Evaluating strategies from research i.e. Teach First ITE and TSA projects
Engaging with research			Academic support to be a critical consumer and producer of knowledge

Teachers using teacher-research

Simons et al. (2003, p.358) praised the UK School Based Research Consortia for the ‘situated generalisation’ that projects allowed, whereby the research by teachers was ‘shared-for use’ (ibid.) by other teachers who acknowledge the situation in which it was conducted and re-generate the research in their own context. Rather than employing the replicability tests that quantitative data are subjected to in order to produce definitive answers, situated generalisation encourages perpetual dialogue in order to re-contextualise (Hordern, 2016a).

In Wall and Hall’s (2017) Campaign for Learning project, findings from teacher-research were presented in the form of academic posters. Using questionnaire data, Wall and Hall (2017) reported that almost two thirds of teachers involved in the sharing of these teacher enquiries intimated that their practice would be influenced by the research of other teachers in the project. They claimed that this is probably an under-representation of impact, though this is unfounded as it was only perceptions that were gleaned as opposed to, for example, a follow-up evaluation of the impact of the project.

Evidence from teacher-research has been considered more useful for other teachers than evidence from academic research. Eberhardt and Heinz (2017) sought to help school teachers to engage with existing research as part of an AR project but found that teaching practice that had been trialled by other teachers and found to be successful was more valued by the participating teachers. Participating teachers were critical of research literature that was not relevant to their context (in Ireland), not new, too academic and too ideal, therefore not trustworthy.

All elements of research engagement

There are also examples of when all of the elements of research engagement, as conceptualised in the theoretical framework adapted from Carr and Kemmis (1986), are present. The NCTL commissioned a report on how TSs engage in school-led R&D to improve pedagogy and CPD, with the intention of exemplifying how these outcomes might be achieved by ‘helping teachers to engage with and contextualise existing research and to

reflect on their practice in ways which enhance their effectiveness' (Maxwell et al., 2015, p.50). As well as including *re*-search and engagement *with* research, the final part of the theoretical framework, i.e. engaging *in* research, can be identified in the practices of research engagement in this study. The report was based upon a survey, interviews and case studies of R&D in five TSAs using an initiative called Connecting Professional Learning (C2L), which involved repeated cycles of what can be identified as:

1. *re*-search;
2. engagement *with* existing evidence;
3. engaging the findings from this *re*-search and more conventional research; and,
4. engaging *in* research to evaluate the impact of changes.

In the Teach First (2017) report 'Putting Evidence to Work', an effective process of practitioner inquiry was similarly proposed as: questioning current practice, sourcing and evaluating the evidence base of the topic in question, making changes to practice as appropriate and evaluating the impact.

2.3.6 Summary of research engagement in practice

What is apparent from the literature is that research engagement in practice varies from how it is conceptualised in theory and policy. There are constraints that only become apparent in the realities of a working school and some practices are seen as more useful for the teaching profession than others, though not always because of research engagement but because of some other proxy activity.

Re-search can be seen as an easy form of research engagement because it may only require routine data that are already collected by the school and the reflections of teachers that lie dormant until stirred via LS or JPD. There are, however, logistical factors for schools to consider but if these are overcome, rich, values-based PD can be achieved.

Engaging findings *from* research has been seen as preferable to *re*-search because it is scientifically based but this renders the professionalism of teachers redundant. This proposition is apparent in the promotion of research summaries and guides but is particularly crystallised in the recent report by the Royal Society and British Academy (2018). It appears

to recommend researchers working closely with teaching practitioners, as fellow professionals, to improve the quality of their research and its use in practice, including within ITE. However, whilst ostensibly recommending collaborations between all those involved in creating and using educational research, it is apparent that the Royal Society and British Academy (2018) report focuses upon teachers passively engaging findings from research.

A more active form of research engagement involves teachers engaging critically *with* research, which is present in forms of ITE and CPD, though the access to academic papers and the skills needed to critique these research outputs is variable. The success of this form of research engagement may be due to the social element that is often required to discuss research literature with colleagues.

Teacher inquiry has been linked with the PD of teachers (Punch and Oancea, 2014) and there are examples of this working well for teachers, whether new or experienced. Collaborations are common in this form of research engagement, and these might be between teachers and other teachers, their pupils or academics, with the obvious power dynamics to navigate in these working relationships. ‘Collaboration’ with researchers is sometimes a misnomer and may actually mean research facilitation or could even be teacher exploitation.

2.4 Concluding thoughts

This review of literature began with the evolution of Stenhouse theories of teacher research and these still have relevance today. With the formation of the National Curriculum in England, the kind of curriculum research that Stenhouse (1975) originally advocated became seen as obsolete but Fordham (2016) has identified that curricular constraints in the teaching of secondary-level history enabled the knowledge generated by teachers to be transferable to other teachers of the same subject. Through citation analysis of publications by history teachers, Fordham (2016) demonstrated that history teachers have been instrumental in constructing and disseminating their own knowledge base and proposed that teachers in other subject areas could do the same. This knowledge base, consisting of re-search that is published and utilised by history teachers, included assessment techniques and links to other curricular areas, mostly by exploring the relationships between one teacher’s classroom, how they enact the National Curriculum and the discipline of history as an academic endeavour. This may be more appropriate in certain subject areas in secondary teaching; for example,

Jyrhämä et al. (2008) found that student teachers in Finland thought a research-based approach to teacher education was less important for arts, music, craft and PE than in history and maths.

It became apparent that there are different understandings of research engagement and a theoretical framework was drawn up from Carr and Kemmis (1986) to categorise these within a continuum of professionalism, as that is what the policy context reiterates. In this, the action of teachers reflecting is considered the polar opposite to teachers constructing knowledge via their engagement *in* research, which is seen as the apex of professionalism, with, for example, Campbell et al. (2010) linking teachers constructing their own knowledge base with their dedication to their vocation as educators. The current policy context in England, however, only gives agency to certain schools to be able to do this, and even in these establishments, research engagement of any sort is not necessarily done well according to studies of the TS initiative in practice.

For Godfrey (2016), ‘research engagement can be seen as a powerful and effective vehicle to underpin the activities of the Teaching School’ and the importance of R&D running throughout the work of TSs in this way was later acknowledged by the Teaching Schools Council (2017). He also highlighted, however, that the R&D requirement of TSs could become burdensome. This is perhaps the case with the ITE remit of TSs, which should include R&D but studies of research engagement in TSs focus upon its role in CPD more. Whereas a TS studied by Rea et al. (2015a) saw R&D activity as an approach that is used to develop and improve all aspects of the TS’s work, Coldwell et al.’s (2017) content analysis of TS websites revealed that use of research was typically linked to school improvement and CPD.

What is omnipresent in ITE, of every variety on offer in England, is *re*-searching one’s own practice, which perhaps is unfairly placed at the opposite end of the continuum to engaging *in* research as it still requires the criticality that Carr and Kemmis (1986) said marked teaching as a profession. Winch et al. (2013) explored the potential for educational research to feed into the professional knowledge of teachers. They identified this professional knowledge as including tacit knowledge (‘*phronesis*’), technical knowledge and critical reflection. This last category of professional learning consists of reflective practice, scholarly sourcing of evidence and systematic enquiry, which is particularly pertinent to this doctoral work on research engagement as it includes *re*-search and engagement *with* and *in* research.

Chapter Three: Methodology

As the researcher's own history and background influence choices about what is considered important to research and the appropriate ways of researching these chosen questions (Morgan, 2007), the axiology of the researcher will first be explored, using the first person where appropriate, with links to ontology and epistemology. As Brannen and Moss (2012) note, it is important for research questions to be tailored to the researcher's epistemology; therefore, it is appropriate to present the research questions in more detail next. The research approaches and methods, including sampling, undertaken to answer these questions are then explained, along with the methods of analysis used for each. The chapter ends with ethical considerations, which were even more pertinent in a research project about the research conduct of others.

3.1 Axiology, Ontology and Epistemology

The purpose of this research is to understand the perceptions, practices and potential of research engagement as it is agreed that 'it is always useful to understand things, even if you cannot work out how to change things for the better' (Frankham et al., 2013, p.12). As a former teacher who engaged *with* and *in* research alongside teaching practice in a secondary school in England, I sought to understand the place of research engagement in England's 'evidence-informed teaching profession' (DfE, March 2016), with the intention that these understandings may be of use to decision-makers. It is hoped that by presenting the perspectives of teaching practitioners themselves, the proposal for evidence-informed teachers may be influenced by the inversion of this phrase - teacher-informed evidence.

As it is acknowledged that perspectives gained are constructed by both the participants and the researcher, the ontology can be identified as constructivist. Greene (2007) has referred to the constructivist approach as a deep understanding that can legitimise the knowledge of those being studied, which is linked to the researcher's own values of amplifying teachers' perspectives of 'research engagement' and 'evidence-informed teaching'. Whilst an understanding of multiple viewpoints rather than one 'truth' is the aim,

social phenomena can still be adequately represented in constructivism, without being representative in the positivist sense (Greene, 2007, emphasis from original). What is represented in this study are the perceptions, practices and potential of research engagement according to teaching practitioners, including the researcher as Labaree (2003) noted that teachers who become researchers take on a different worldview but their previous worldview should not be relinquished.

Adopting a mixed methodology links back to the researcher's axiology in highlighting the importance of 'understandings' as it is agreed that 'better understanding takes its most important form as generative insights, which are in turn best attained through a respectful conversation among different ways of seeing and knowing' (Greene, 2007, p.79). Although this could imply the use of one particular method, it is taken here to mean understanding one phenomenon (in this case, research engagement in the teaching profession) from different points of view. Taking Greene's (2007, p.97) view that 'methodology is ever the servant of purpose, never the master', the research purpose, in this case 'understanding', is the most influential factor in methodological concerns (Biesta, 2012). It was deemed appropriate, therefore, to employ different methods, producing both quantitative and qualitative data as this 'provides a more complete understanding of the research problem than either approach by itself' (Creswell and Plano-Clark, 2011, p.8). Again, there is a focus upon 'understanding' with this mixed-methods research approach, which fulfils the main aim of the study.

3.2 Research Methods Linked to Questions

Derived from the researcher's axiology, ontology and epistemology, the following research questions were chosen that allow for a three-dimensional view of research engagement in the teaching profession by seeking to illuminate the phenomenon from different angles (perceptions, practices and potential) and at different levels (individual, school and wider profession).

- a) How do teaching practitioners in a variety of settings perceive research engagement?
- b) How can socio-cultural factors in schools influence practices of research engagement?
- c) What potential worth can research engagement have for teaching and learning?

Each question is addressed using a range of research approaches (Table 2) to achieve a holistic understanding of teachers’ research engagement. This synergistic research design was inspired by the VITAE (Variations in Teachers’ Work and Lives and Their Effects on Pupils) project in that it started with an initial ‘template’ for analysis, translated this into the research design (by combining qualitative and quantitative approaches) and integrated these in data collection (see Fig. 3 below), analysis and interpretation (Day, Sammons and Gu, 2008).

Table 2: research objectives and how they are addressed

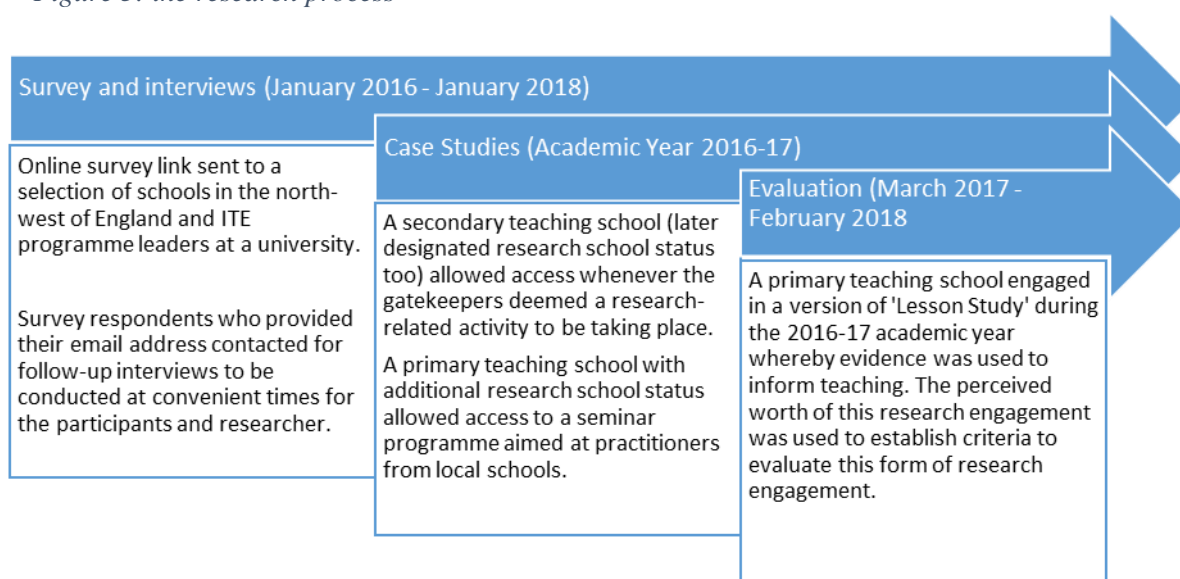
	Research Approaches				
Research Objectives Addressed:	Survey (n=109)	Semi-structured Interviews (n=6)	Case Study using Ethnographic Methods	Mixed-methods Case Study	User-focused Evaluative Case Study
Perceptions	Enquired about importance of research-related activities	Motivations to engage with/ in research explored	Invited to observe activities perceived to be research related	Sought views of different research engagement activities	Participants (n=3) identified what they perceived as the worth of research engagement
Practices	Enquired about enablers and constraints	Delved deeper into the practices reported in the survey	Research-related practices observed and asked about in interviews	Seminar programme observed; other practices evidenced in blogs	Observations of research engagement for PD

Potential	Enquired about perceived outcomes	Perceived outcomes enquired about	Effect of research experienced via participant observations	Survey enquired about the usefulness of research activity	Evidence of the perceived worth of research engagement gathered
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3.3 Mixed methodology

Rather than placing priority on quantitative data in an explanatory sequential mixed methods model which, according to Creswell (2012), is the most common mixed-methods design in educational research, a more synergistic research design was achieved by having the phases of research overlap and feed into one another (Morgan, 2007) as depicted in Fig. 3.

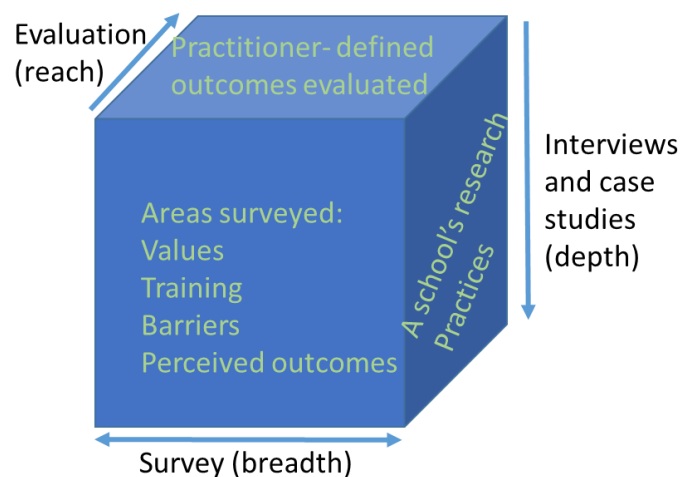
Figure 3: the research process



Fielding (2012, p.152) reiterates that mixing methods in this way is not triangulation for it is not validity that is intended, as in the positivist sense, but deeper analysis and 'by revealing related but distinct dimensions of the phenomenon, mixed methods can act as a corrective to analytic tunnel vision'.

The study, therefore, uses a mixture of methods to investigate research engagement from three angles, which may be visualised as having three dimensions: breadth, depth and ‘reach’ (Fig. 4). The survey provides breadth and the interviews and case studies add depth, the two dimensions that Johnson et al. (2007) recommend mixed-methods research should have. Without the evaluation, though, the potential effect of research engagement would be limited. The survey and interviews only *report* the perceived impact of research engagement, whilst the case studies only reveal how the researcher and participants *perceive* the effect of research engagement. The case studies relied upon the observations of the researcher’s preconceived notions of the potential worth of research engagement whereas the user-focused evaluation enabled the study to uncover the potential ‘reach’ or impact that research engagement can have according to the criteria set by the ‘users’ themselves.

Figure 4: 3D Research Marsden, 2020



What follows is an outline of the methods used to illuminate each ‘dimension’, along with a defence of each method, as recommended by Morgan (2007).

3.4 First Dimension: breadth

3.4.1 Survey

Aims

As an initial scoping exercise to understand the perceptions, practices and potential of research engagement from a wide range of stakeholders, quantitative and qualitative data from a survey were gathered. With the overall research purpose being to understand research engagement, the survey was not intended to elicit ‘truths’ as it is understood that the perceptions offered by the respondents may have been constructed as the questions were being asked; although ‘all humans think’ (Badiou, 2014, p.32), if no mouthpiece is presented in order to articulate these thoughts, they remain subconscious. Instead, the intention was to ‘map the territory’ for the rest of the research (inspired by Day, Sammons and Gu, 2008) as a feasible and efficient means of gathering data from a wide research population (teaching practitioners in the north-west region of England). This region of England was chosen as the research population for convenience so that the researcher could easily access survey respondents who expressed an interest in participating in a follow-up interview.

Sampling

Whilst it was not deemed necessary or even possible to achieve a representative sample, it was important that the participants came from a cross-section of the research population of teaching practitioners, known as dimensional sampling (Robson, 2002) which sought at least one member of different types of teaching practitioners (as in Day, Sammons and Gu, 2008). Whereas previous research has focused upon senior leaders (Hammersley-Fletcher, 2015; Maxwell et al., 2015) or practitioners in TSs (NCTL, Autumn 2015, p.33), this doctoral research included: student teachers, teachers, middle leaders, senior leaders and support staff from the early years, primary, secondary and tertiary sectors working in urban, suburban, rural, coastal and island locations. Convenience sampling (of schools known by the researcher and supervisory team) was deemed an appropriate sampling method in the first instance to capture a range of school types in different locations, followed by a ‘snowballing’

technique (Robson, 2002) with members of participating schools recommending other possible participants.

Using only these sampling methods, however, would have precluded teaching practitioners in more remote contexts, which the researcher was keen to rectify, having first-hand experience of teaching in an isolated area. It soon became apparent that purposive sampling would also have to be employed to recruit the variety of teaching practitioners from all areas of teaching as some categories were under-represented according to the incoming data monitored via the online platform, Online Surveys. For example, rural primary schools would not have appeared in the sample if purposive sampling had not been employed in the form of simply selecting schools meeting these criteria from a map of the North West.

Recruitment

As well as using the Online Surveys to track the progress of the sampling procedures, an online survey was initially deemed a convenient recruitment tool as the link could easily be emailed to head teachers (as gatekeepers) who could then forward it to their staff, should they wish their school to be involved in the research. It was deemed ethically necessary to ask gatekeepers' permission (see Appendix 1a) rather than approaching teaching staff directly as some questions (see Table 3) may have been considered by some head teachers to be private. It soon became apparent from the interim data, however, that this method of recruitment was limited as there was a disproportionate number of senior leaders being represented, possibly because consenting gatekeepers were not sending the link on to their staff once they had completed the survey themselves. It came to light, anecdotally, that this may have been because some small primary schools may not have an internal emailing system. This explanation seemed likely as it was rural primary schools that were particularly under-represented. Additional paper copies of the survey were therefore sent to these types of schools to offset the limitation of access that online surveys can pose (see Angrosino, 2012).

Another recruitment strategy employed to improve recruitment was to offer feedback of findings from the research to consenting gatekeepers (as recommended by Angrosino, 2012). Further ethical approval was sought from the university to gain permission to employ this strategy since it involved sharing data, though anonymised. Data gathered from one school could be shared with the gatekeeper of that school if requested, which provided an

incentive for the gatekeeper to distribute the survey in order to receive useful information that could inform improvements in the school.

Survey Design

Questions for the survey were based upon the review of literature and the researcher's professional experiences as a teacher (Day, Sammons and Gu, 2008). The different types of questions asked will now be justified (Table 3) with reference to this literature and personal experience.

Table 3: justifications for survey questions

Number	Questions (see Appendix 3)	Reasons for inclusion
1-10	Gender, role, years of experience, contracted hours, sector, school type, 'teaching school' status, location, connections with HE, level of deprivation	Contextual information that could be linked to variables e.g. HE being an enabler of research engagement (NCTL, 2014; Hammersley-Fletcher et al., 2015)
11	How do you rate the following items in terms of relevance and importance to your job?	Perceptions of the value of different elements of research engagement as defined by literature and the researcher's experiences (see Table 4); Williams and Coles (2007) asked about formal and informal information sources
12	In your opinion, how problematic are the following potential barriers to teacher research?	Barriers in practice as experienced by the researcher during Master's study (see Table 5)
13-15	How would you rate your training/ Continuing Professional Development (CPD) in preparing you to access, assess	Training in research practices based upon questions from a survey of newly qualified

	and apply educational research to support your teaching?	teachers (NCTL, 2015); Williams and Coles (2007) asked about confidence in accessing, assessing and applying.
16	In your opinion, how beneficial is teacher research to the following...?	Potential benefits of engaging in research according to literature and researcher's experiences (see Table 6)

Demographic information about the respondent and their place of work was asked first instead of being last as recommended by Robson (2002) because these were thought of as questions that teaching practitioners could answer easily, thus easing them in to the more demanding questions that would require them to reflect upon their work. This order of questions is a technique taken from teaching as examinations in the past have followed this pattern.

To address the first research objective, perceptions of what 'research engagement' means to teachers were gleaned from Question 11's Likert scale (as suggested by Bryman, 2012), ranging from 1 to 4:

1. not important
2. quite important
3. important
4. very important

It was initially decided to list the different aspects of the concept of 'research literacy' as defined by the British Educational Research Association (2014) but the university's research ethics committee (UREC) then suggested that other aspects of research engagement should be included in the survey to avoid alienating teachers who might value more informal, rather than academic, research activities. The statements finally chosen for the survey are presented Table 4 along with justifications for their inclusion taken from other literature and the researcher's own experience.

Table 4: statements in Question 11

Definition of Research Engagement	Reason for Inclusion in Survey
a) Sharing experiences with colleagues, maybe as part of a Joint Practice Development	Gu et al., 2015; Hall (2014); Hargreaves (2012); Hammersley-Fletcher et al. (2015)
b) Working in a development group i.e. to address parts of the school development plan	Researcher's own experience of teaching and researching in a designated 'teaching school'.
c) Using web-based materials to research issues related to education	Nelson and O'Beirn (2014); Ovenden-Hope and la Velle (2015)
d) Being critically reflective	DfE (2011) Teachers' Standards
e) Understanding why research is important	BERA-RSA (2014)
f) Understanding what can be learnt from research	BERA-RSA (2014); Lingard and Renshaw (2010)
g) Familiarity with the latest research findings	BERA-RSA (2014); NCTL (2016)
h) Knowing the implications of research for your day-to-day practice	BERA-RSA (2014); NCTL (2015)
i) Knowing the implications of research for education generally	BERA-RSA (2014)
j) Using the results of evidence gathered from strategies trialled elsewhere	BERA-RSA (2014)
k) Being able to critique or review research	BERA-RSA (2014); NCTL (2015)
l) Combining information gained from your own practice with academic theories	BERA-RSA (2014); Kincheloe (1991); Dinham, 2013
m) Being actively involved in the research process rather than being the subject of research	BERA-RSA (2014)
n) Familiarity with a range of research methods	BERA-RSA (2014); Lingard and Renshaw (2010)
o) Having the ability to analyse data gathered through research	BERA-RSA (2014)

Barriers to research practices were asked next (Question 12) as it was realised that the elements of research engagement in Question 11 were not always possible in schools and it was thought that respondents might appreciate the opportunity to explain the realities of the ideals. The barriers posed to the respondents were mainly from the researcher’s own experiences of the difficulties of teacher research but they appear in the literature too (Table 5).

Table 5: statements in Question 12

Barrier	Reason asked
Time	No extra time was offered to facilitate the researcher when completing the Master’s of Education (MEd) in addition to a full teaching timetable, which was challenging. Also found in Nelson and O’Beirn (2014) and Burton, Brundrett and Jones (2014).
Research not being a focus/ school priority	Added after survey was piloted (see Appendix 2).
Gaining permission from senior management	Although the Master’s research was conducted in a TS supportive of R&D, it was felt that it was not a priority, which delayed the research process.
Knowing how to conduct your own research	The researcher was taught about research conduct as part of the MEd but other teacher-researchers in the teaching school only had access to limited resources to help them with their research.
Procedural ‘hurdles’ such as gaining ethical approval	Conducting research for the MEd required approval from the university’s research ethics committee, which delayed the research process in comparison to the other teacher-researchers who were working with the Expansive Education Network (EEdNet) and not subjected to the same rigour. Whilst the researcher understands the importance of gaining ethical approval, it was recognised as a potential barrier.
The expense of a Master’s course	The researcher paid to complete the MEd but it is understood that this is not possible for everyone.

Again, respondents were asked to respond to each barrier using a Likert scale, this time just offering three options: 1 - ‘not a problem’; 2 – ‘could be a problem’; 3 - ‘this is a definite barrier’. It was realised that not all statements would be applicable to all respondents e.g. ‘gaining permission from senior management’ might not be a problem for those who are part of the senior leadership team, so ‘N/A’ was also provided as an option.

The next three questions were about training in how to access, assess and apply evidence from research as these were questions that NQTs were asked in a national survey by the National College for Teaching and Leadership (NCTL) from 2010 to 2015. The same ratings, from 1 to 3, were used as in the survey from NCTL (2015).

It was thought that the logical way to end the survey would be with the outcomes of research engagement. It was acknowledged that respondents might think that there are no beneficial outcomes to research engagement so the Likert scale offered the options:

1. highly beneficial
2. beneficial
3. quite beneficial
4. not very beneficial
5. not beneficial at all

Table 6 lists the possible benefits posed in the survey, alongside the reasons for their inclusion.

Table 6: statements in Question 16

Benefits	Reason for inclusion
Improving practice	Simons et al.’s (2003) evaluation of the School-based Research Consortia
Outcomes for young people	OECD TALIS (Musset, 2010; Barrera-Pedemonte, 2016)
Performance management targets	Experience of researcher
Promotion	NCTL (2014); Kushner et al. (2001)
Job opportunities beyond your current profession	The researcher left teaching for doctoral research.

There were free text boxes at the end of each section of the survey so respondents could express their thoughts on research that had not been specifically asked about.

Pilot

A pilot of a draft survey influenced this final design. The participants were teachers known to the researcher (n=9) so that feedback on improvements could be sought with ease. For the sake of brevity, these changes are detailed in tabular form in Appendix 2 as some comments are detailed, particularly from a supply teacher working in Wales, perhaps because she was conducting her own Master's research at the time and was more aware of survey design. Most of the respondents were not from the sample population to reduce the likelihood of them being asked to participate twice.

Response rate

It is not possible to calculate the exact response rate of the survey due to the recruitment strategies employed. This is similar to Procter's (2015) survey into research practices of schools and the value teachers placed upon these practices, where paper questionnaires were issued and a digital version posted online via fora for teachers, making it impossible to calculate how many members of the target population were exposed to the survey but chose not to respond. For this doctoral research, a link to an online survey was emailed to school gatekeepers but it is not known how many of these passed the link on to classroom staff which meant that the researcher did not have control over how many potential respondents received the survey. This was not considered an issue, however, as the intention was not to generalise from these data but to use the findings to map the territory of research engagement from the perspectives of a broad range of teaching professionals. This was satisfactorily achieved (Table 7), although there was an imbalance in the number of respondents from the primary and secondary sectors, unlike Procter's (2015) survey, which achieved an almost even number of primary and secondary respondents from the 156 returns, the majority of whom were class teachers.

Table 7: the numbers of participants from different sections by job role

	Early Years	Primary	Secondary	Tertiary	All- through	Totals
Student teachers	2	7	24	1	0	34
Class teachers	1	7	18	5	1	32
Leaders	2	11	13	6	1	33
Support staff	0	5	3	2	0	10
Totals	5	30	58	14	2	109

What is known is that out of the 203 schools that were contacted, 25 replied to say that they were willing for their school to be involved but more may have taken up the opportunity without informing the researcher that they had passed the link to their staff.

Method of analysis

Descriptive analysis of quantitative data via the computer software SPSS was used to inform the interviews of consenting respondents, as described by Robson (2002). Inferences could then either be corroborated or refuted by the qualitative data so although not statistically generalisable, the statistical data were still useful in complementing the qualitative data (Morgan, 2007). It was also useful to quantify the perceived worth that participants assigned to research practices and the ‘scores’ they gave for their preparedness in these activities. Campbell et al. (2010, p.163) recommended that ‘for rating scale questions... you can calculate a score that is both meaningful in itself and also allows you to compare the responses to different questions, or indeed the responses of different groups to the same question’. In this way, patterns were able to be identified, such as how students on the various routes into teaching rated these programmes in relation to the research engagement that they involved.

Limitations

It is acknowledged that respondents to the survey are likely to be atypically interested in research by virtue of their willingness to participate, therefore some voices may have been overlooked. Williams and Coles (2007) maintain, however, that this outlier view is not necessarily a weakness as the perceptions of those involved in research activities are valuable to this study as their insights imply what is possible in their contexts.

There was a loss of contextual information, however, as some respondents misunderstood questions. For example, a disproportionate number of respondents stated that they worked in a 'Teaching School' (46.8%), which is unlikely to be the case as only six out of the 25 schools known to have participated had been designated this status by the National College of Teaching and Leadership (NCTL). It could be assumed that more teachers from these particular schools completed the survey in comparison to the other participating schools that do not have this status. However, it is likely that the reason for there being more respondents from TS is the ambiguity of the phrase, rendering the survey limited as a methodological tool for understanding research engagement in a TS context.

Even though free text boxes were included within these questions for respondents to explain their circumstances in more detail, thus allowing qualitative data to be gathered from the survey, a second 'dimension' was included in the research design, which included interviews based on, but not exclusively about, themes in the survey. Despite a dominant method in educational research being the distribution of surveys (Simons, 2004), the researcher acknowledges the limitations of relying solely upon this method and the (mainly) quantitative data produced (Morgan, 2007). The methods used to gain the 'depth' that the survey alone could not achieve will now be detailed.

3.5 Second Dimension: depth

Included in this section are the methodological concerns of the semi-structured interviews and the case studies using ethnographic methods and a more mixed methodology, each detailed in their own subsection.

3.5.1 Semi-structured Interviews

Aims

In order to refine, extend and explain (Creswell 2012) the trends identified in the quantitative data, semi-structured interviews were conducted with consenting respondents. This research tool was chosen rather than unstructured interviews so that the discussion could be focused upon the research objective of understanding the perceptions, practices and potential of research engagement (see Table 8) but could be tailored to the individual so that answers given in the survey could be explained further. The interviews were conducted whilst the survey was still ongoing so as not to lose the participants who had expressed an interest in the follow-up interview. Efficiency of time was also paramount so that only approximately 20 minutes was required of the busy teachers who had voluntarily agreed to participate. This is in line with Burton, Brundrett and Jones (2014), who recommend that a semi-structured interview should involve five or six themes, each with one or two main questions with possible follow-up questions. The interviewees were emailed an interview schedule in advance so they could think about the answers before the interview (as recommended by Burton, Brundrett and Jones, 2014).

Table 8: interview themes justified

Interview Item	Reasons
1. Ice-breaker - general information about their role in education	Gives time to become acquainted and allows the participant to explain their experience beyond the limited demographic information disclosed on the survey.
2. Perceptions of teacher research	Allows the interviewee to express what it is about research engagement that is pertinent to them without being led.
3. Experience of research in practice	Previous studies have asked about research practices in surveys so it was felt more useful to ask about this face-to-face to understand what these practices entail as even homonymic initiatives can vary e.g. the variations of LS (Dudley, 2014).

4. Development of teacher research	Interviewees were given the opportunity to express the potential that they see research engagement having.
5. Any further comments on issues related to teacher research	As thoughts are developed in action (Badiou, 2014), the very act of conversing about research in teaching could bring to mind other insights that had not previously been thought of, even when completing the survey.

Pilot

As with the survey, the interview was piloted with a teacher; it was not the intention to change anything (each interview would be adapted accordingly anyway) but to practise interviewing and to gauge how much could be discussed in 20 minutes (Thomas et al., 2014). This was carried out with one of the respondents of the pilot survey, pseudonym ‘North West’, who was willing to facilitate the development of the right interview approach. As well as interviewing North West to become familiar with what could be achieved in the allotted time, North West asked if she could act as the interviewer so that I could experience what it would be like to answer the questions. Having been a practising teacher just a few months earlier, it was easy to role play this identity and in doing so, it allowed a sense of empathy for the teachers who would be interviewed. From this experience, it was decided to abandon the original idea to provide points for discussion on cue cards as this slowed the pace and was too leading, therefore limited a broader discussion.

Sampling, recruitment and response rate

A dimensional sampling strategy, similar to the survey, was used to conclude that if interviewees from each teaching role could be sought, at least five interviews would have to be conducted. It was intended to access at least one student teacher, one class teacher, one middle leader, one senior leader and one teaching assistant (TA) but this sample was dependent upon these survey respondents volunteering. It was hoped that at least six respondents with different roles in education would agree to be interviewed and eight was considered a manageable number of interviews for the researcher to conduct. This was not considered the ‘limit’, however, because if more respondents expressed an interest in discussing their research engagement further by leaving their email address at the end of the

questionnaire/ contacting the researcher directly, they would be given this opportunity. Even though 16 survey respondents left their email addresses and were contacted to organise an interview, six took up the offer to be interviewed. Table 9 displays the demographics of those who agreed to be interviewed.

Table 9: demographics of respondents to Question 18

Role	Gender	Sector
Middle leader	Male	Secondary (independent)
Middle leader	Female	Secondary (academy)
Middle leader	Male	Secondary (SEND)
Student teacher	Female	EYFS
Senior leader	Male	Primary school
Student teacher	Female	Secondary

There was, therefore, a mix of teachers from the primary, secondary and specialist sector, as in Coldwell et al.'s (2017) interviews.

Limitations

As with the survey, it is realised that volunteers for the semi-structured interviews might have strong points of view as ambivalent people are not likely to want to discuss the survey topic any further, but again, this 'outlier' perspective was valuable. To increase the depth of understanding gained from the interviews, it would be necessary to experience what research engagement is like in the workplace for teaching professionals with varying attitudes towards research involvement. It was deemed necessary, therefore, for the researcher to immerse themselves in the research culture of a TS where R&D was a priority.

Proponents of this more ethnographic approach may agree with Creswell (2012, p.470) that 'patterns cannot be easily discerned through questionnaires or brief encounters' but this does not mean that these methods are futile. Indeed, Creswell (2012) reminds that ethnography adds to what is already known about specific cultural themes. He recommended that there should first be a broad lens and it is the ethnographer's job to then look for manifestations of this cultural theme. In this case, the cultural theme being investigated is

research engagement and the broad lens has been constructed from what is already known from the researcher's experiences, the literature and the data from the survey and interviews. Therefore, whilst the methods detailed so far have their limitations when viewed discretely, they are integral to understanding research engagement when taken holistically.

Method of analysis

A template approach (Robson, 2002), to data analysis was decided upon as this allowed the qualitative data from the interviews to be organised into themes emerging from the survey and literature but were not be restricted to these. Once 'an initial broad conceptual map of the main ideas' was created from the researchers' experiences and review of literature (as in Day, Sammons and Gu, 2008, p.332), emerging themes within these categories were then found inductively (Cain, 2015). The literature initially used to conceptualise areas for investigation was returned to (as suggested by Creswell, 2012) in light of new insights (as in Day, Sammons and Gu, 2008), so the conceptual framework was always evolving. This allowed for a back and forth dialogic (Robson, 2002) between data, as they were gathered, and existing knowledge gained from literature and experience has been integral to addressing each research question. Day, Sammons and Gu (2008) found the software NVivo limited in mixed-methods analysis and, similarly, this software was trialled in this doctoral project but was abandoned. The platform could not provide the holistic view that one can achieve by having annotated data from different methods in a physical form that can be viewed all at once to identify shared patterns of behaviour (Creswell, 2012).

3.5.2 Case study using ethnographic methods

As put forward by Burton, Brundrett and Jones (2014), it is interesting to compare what teachers participating in educational research say with what the literature suggested would be the case as well as the researcher's observations. In their baseline survey of classroom practitioners in participating TSAs, Hammersley-Fletcher et al. (2015) found discrepancies between what teachers perceived about research engagement and their research practices, which has also been explored by Procter (2015). Therefore, to supplement the comparisons made between the literature and the survey and interview data, observations of research

practices were made. More than this, ‘a case study using ethnographic methods’ was chosen as in Perryman (2011, p.861). This meant that the researcher could immerse themselves in ‘a culture-sharing group’ (Creswell, 2012, p.462), which other studies highlighting the research culture of schools had not done (Kushner et al., 2001). This case study can be identified as ethnographic in nature because it is the research *culture* of a school that is its focus and ‘ethnography’ is translated from the Greek as ‘writings about a *culture*’.

Target population

As a school with a strong research culture was required, purposeful sampling (Creswell, 2012) was used to attract a school self-defined as ‘research engaged’. Recruitment, therefore, involved contacting local schools with TS status due to R&D once being a discrete part of their remit at the time (DfE, 2010).

A secondary school became interested in the study when the researcher attended a research event hosted by the school in July 2016. Access to attend research-related activities was negotiated over the course of the academic year. Taking Creswell’s (2012, p.462) view that ‘the study of a group provides understanding of a larger issue’, it was the intention to study the teachers who were research active. The target population in the case of the school recruited, therefore, comprised all teaching staff as individual research projects were expected as part of the teachers’ performance management. I made it clear, though, that they would not directly interact with anyone who did not wish to be involved in the study. As Hammersley and Atkinson (2007) pointed out, requiring participants to ‘opt-in’ to observations makes ethnography difficult, so the participant information sheet (see Appendix 5b) was emailed to the gatekeeper to be distributed to staff with clear instructions of how to opt *out* if desired.

Aims of ethnographic case study

The intention of this case study was to understand the research culture of the participating school by observing research-related practices, interviewing key participants in these practices, as identified by school leaders, and analysing related school documentation. These methods were chosen to allow for beliefs about research engagement to surface as well as behaviours to be observed (Creswell, 2012). In this way, although it was primarily *practices*

of research engagement that were the principal focus in the study, the other research objectives, which were to investigate *perceptions* and *potential* of research engagement, were also fulfilled, thus building upon the findings evolving from the survey and semi-structured interviews. The data emerging from the survey and interviews, along with ongoing engagement with related literature (Perryman, 2011), enabled the researcher to de- and re-construct understandings of research engagement in the field, as opposed to taking a ‘grounded theory’ approach whereby understandings emerge from the data alone (Robson, 2002, p.489). Instead, the researcher was more active, for example, in seeking out school documentation thought to be pertinent to the study (Hammersley and Atkinson, 2007). Observations were made of activities identified by the gatekeepers to be related to the research culture of the school and teachers who were willing to be directly involved in the study were interviewed. Details of these chosen methods will now be provided, followed by a discussion of related limitations.

Methods

The first method involved analysing online material (Coldwell et al., 2017) that was considered useful to be familiar with prior to the field visits. Analysis of research-related blogs on the school website was therefore made and enabled the researcher to understand, albeit on a superficial level initially, the context of the school’s research culture. Further documentation acquired during the school visits and new online content continued to be analysed (as in Day, Sammons and Gu, 2008) during the 11-month study to supplement observations.

Observation was the method most frequently used as the researcher sought to be immersed in the research culture of the teaching staff at the participating school. In education research, observations have commonly been ‘reactive’ whereby the researcher kept their distance as an objective observer to offer feedback and suggestions for improvements (Angrosino, 2012). This is not the intention for this ethnography (Hammersley and Atkinson, 2007) so participant observations, whereby there is equilibrium between the researcher and the researched (Robson, 2002), were thought to be the most appropriate. This method gave the researcher the ‘vicarious experiences’ that Stake (1995) advocated in case study research. As a former teacher who had experience of research alongside practice, it was hoped that there would not be an obvious power imbalance that might make the participants feel

uncomfortable. More information on this issue can be found in the ethics section of this chapter.

To clarify the inferences gained from document analysis and observations, conversations were had with key participants, some of which took the form of semi-structured interviews, supplemented by further documentation. During the observations, natural conversations were initiated to aid the understanding of the researcher that would otherwise be based upon assumptions. This follows Angrosino's (2012) phases of observation whereby data are generally descriptive at first as the researcher becomes familiar with the field, then there is a focusing phase when patterns are recognised and given more attention, followed by the selective phase where more details are sought from those identified as key players. The latter took the form of more structured interviews (n=5) with teachers who were fully involved in research as identified by a deputy head teacher. Some of these participants provided physical explanations of their research project in the form of printed PowerPoint slides, which allowed for a better understanding of their practices, their perceptions of research and the potential they thought research engagement can have in the teaching profession. Angrosino (2012) saw the final phase of observation as 'saturation', reached when everything relevant has been observed. This was not possible as the research culture of the school was constantly evolving, nor was this a desirable claim to make.

As Creswell (2012) pointed out, by observing as well as interviewing, an ethnographer can identify patterns that are ideal (what should occur), actual (what did occur) and projective (what might have occurred), which would not have been possible with just one method. By analysing school documentation, the ideals of the school's evidence-informed practice could be identified and compared with the reality via observations. Just interviewing participants would not have provided the panoramic view of research engagement in practice as only teachers who were positive towards evidence-informed practice were allowed to be accessed. Interviewing these participants, however, gave an insight into the next steps for the school.

Method of analysis

As with the other qualitative data gathered from the interviews, a template approach to data analysis was used for the qualitative data gathered in this case study. An template of pertinent themes was initially drawn from theory and data already gathered from other methods. As in

Kushner et al. (2001, p.2), this was then ‘further refined by issues identified in the field when documenting the experience of the teachers’. The initial template was then added to and re-organised into broader categories from an open reading of the qualitative data emerging. Although grounded theory is considered more appropriate in a post-positivist paradigm, it is also noted that the researcher’s own perspective cannot be avoided. It was, therefore, considered misguided to refer to theories that emerge from the data as ‘grounded’.

Limitations

A procedural limitation was that the researcher was not in the field often enough for ‘thick description’ (Geertz, 1973) to be possible. The researcher was not always welcome in activities that were thought of by the gatekeeper to be personal to the individuals conducting their own research projects and it was agreed that it would be inappropriate to disturb teachers who were working on their projects and preferred to be left alone (see reflexive account at the end of this thesis). Nevertheless, over the course of the academic year, observations were made of one IN-SERVICE Training (INSET) day, three research group meetings, three research training sessions, five research seminars, one journal club and the end-of-year conference. These, along with the documentation and five interviews, provided enough insight into the research culture of the school to draw some conclusions.

A limitation linked to the identities of the researcher as a former teacher but social science researcher at the time was that the research practices being studied were influenced by the researcher’s own practices e.g. critiquing academic literature. Therefore, it cannot be claimed that these observations created the kind of verisimilitude that some think possible with this research method (Burton, Brundrett and Jones, 2014). As it was only an understanding and not a ‘truth’ that was intended, however, the observations are useful in illuminating not only the attitudes towards the research conducted by the teachers but also their condescending attitude towards the ethnographic research in which they were participants. The researcher also had to be mindful of their own bias Becker (1967) from their own experience of a research culture similar to that of the participating school and the very different research culture experienced as a doctoral student. More details as to how this impression was formed will be discussed in the reflexive account at the end of this thesis.

Perryman (2011) identified as a ‘returning native’ as she was studying the school in which she used to teach, recognising that there are limitations to this as well as the obvious benefits of access and empathy. The researcher identified with this because, although not a former member of staff at the school, the context was very similar to the researcher’s former place of work and this made the school and staff feel very familiar, which was beneficial as specialist concepts were understood (Robson, 2002). This, however, can mean that ‘the researcher does not probe as much as an outsider would’ (Perryman, 2011, p.865). Treating things as ‘anthropologically strange’ (Robson, 2002) was, therefore, attempted so that explanations were sought even though these could have been anticipated by the researcher as a teacher.

3.5.3 Case study using mixed methods

A second case study was conducted in a primary school similar to the secondary school in that it had TS status, as well as RS status (DfE, March 2016) but the methods used were not ethnographic, as in the previous case study. Access was only granted to one research engagement programme rather than the ‘research culture’ in a broader sense that was accessed in the secondary school. Quantitative and qualitative data were gathered about this one research-related activity, which involved academics delivering research seminars to teachers. These, along with online documentation about the school’s approach to research, form a mixed methods case study that was originally intended to be an evaluation study, as will now be explained.

Original aims

The school was originally contacted to enquire if it would participate in an evaluation study due to the research engagement found on its website, for example having a page dedicated to R&D. Although gatekeeper consent was gained, the user-focused evaluation intended could not go ahead as planned. It was the intention to use a variation of Patton’s (1997, p.21) ‘utilization-focused evaluation’ whereby it is the values of the intended users that frame the evaluation, not those of a ‘distant, independent judge’. The senior leader responsible for R&D was therefore asked to articulate the outcomes she hoped for as a result of the programme in question, which consisted of a series of seminars for local teachers delivered by academics.

In line with Patton’s (1997) utilization-focused evaluation that was intended, the deputy who organised the research seminars was involved in choosing the data collecting method that would be most useful to her, as well as to me. It was agreed that surveys would be distributed to attendees at these research seminars as she believed that this would generate the most useful data for her to develop the programme. Together, questions were formulated that explored whether attendees perceived the programme to be as effective as the deputy hoped (see Table 10). It was agreed that this survey could then be used as a recruitment tool, for the next layer of evaluation, which was intended to incorporate the highest levels of Guskey’s (2000) five critical levels of PD evaluation. The first two levels, participants’ reactions to the PD and participants’ learning, are evident in the survey (see Table 10) but to reach the higher levels, follow-up evaluative methods, in which participants themselves set the criteria, would have had to have been deployed, as presented in Table 11 below.

Table 10: use of Guskey’s first two levels of PD evaluation

Evaluation level	Survey content
1. Participants’ reactions	Likert scale from ‘strongly disagree’ (1) to ‘strongly agree’ (5) to rate the following statements: the content was interesting; the content was accessible; the seminar was clearly presented; I can see how it could be applied to my classroom.
2. Participants’ learning	The same Likert scale was used for the next statement: I gained new ideas to try out The next two questions were assigned a Likert scale ranging from ‘no impact’ (1) to ‘a great deal of impact’ (3), with the option of ‘not sure’. How much impact do you think the seminar has had on your subject knowledge? How much impact do you think the seminar is likely to have on teaching and learning in your classroom?

In the next phase of the evaluation, it was the intention to ask consenting participants of the seminars to set their own criteria which they feel would demonstrate the outcomes of this form of research engagement, for their school, for themselves and for their pupils.

Table 11: Guskey's upper levels of PD evaluation

Evaluation level	How data were to be gathered
3. Organisation support and change	Ask consenting survey respondents what they hoped to change in their school as a result of engaging with research in the programme and map these aspirations against appropriate evidence.
4. Participants' use of knowledge/ skills	Map evidence against what participants perceived to have gained.
5. Pupil learning outcomes	From what participants expected their pupils' outcomes to be following the implementation of ideas from the programme, these outcomes would be evidenced.

By evaluating using criteria based upon the intentions of the decision-maker as well as the values of the 'users' (as in Gregory, 2000), the study could be identified as a user-focused evaluation (see next section for more detail). This did not go ahead as planned, however, for although five teaching staff expressed an interest in being involved, they felt that they could not commit to the study in full due to time constraints, as warned by Robson (2002). By the time this was apparent, data collection in the form of a survey had already begun so access was renegotiated (Hammersley and Atkinson, 2007) to form another case study rather than pursue a user-focused evaluation when this was clearly not feasible. Access to the research engagement programme remained the same and to supplement the survey and observation data gathered here, additional data were obtained from the school's online presence and a semi-structured interview with the deputy head teacher.

Methods

Despite the evaluation not taking place as planned due to lack of participants, the research methods originally intended to be employed were easily adapted for a case study. The survey itself provided (mainly quantitative) data that are still useful but more qualitative data were needed as Cain (2015) noted that different conclusions could be drawn about the effect of research engagement from studies using quantitative data and those using qualitative data. When surveys consisting of closed questions are used as a method, it appeared that there is little use of research in the teaching profession and teachers generally do not see the relevance of research to their practice. Case studies, however, revealed qualitative data that suggests this may not be the case in practice (Cain, 2015). This doctoral study was easily re-designed as a case study as the very act of distributing the surveys at the seminars meant that

there was already qualitative data from participant observations and these were subsequently added to, as will now be explained.

The researcher had gatekeeper consent to participate in the research seminars so field notes from these were used to add more qualitative data to the mainly quantitative data gathered from the survey. Two presentations by the deputy head teacher were also observed at conferences aimed at teachers interested in research and these provided more background information about the research engagement programme that the researcher was permitted to evaluate (originally). They also revealed the other research-related activities that the school was involved in that the researcher was not granted access to.

Online material also gave an insight into the other research practices of the school as a teaching school that was also an RS and part of a MAT. The deputy's blogs and website content were therefore analysed to supplement what had been found in both the survey and the participant observations of the research programme that was originally being evaluated as well as the conference presentations.

As the analysis of the online material gave only a superficial understanding of the school's research engagement, it was thought necessary to conduct a focus group or interview for clarification. Out of the five research seminar participants who provided contact details at the end of the survey, only one replied to the call for participants and they eventually had to make their apologies. As a consequence, the only member of staff willing to be interviewed was the deputy head teacher, which was useful for further enquiring about the website content, much of it written by her, and what had been mentioned at the teachers' conferences could also be enquired about. Although the impact of this seminar programme was not able to be evaluated, what was gained was 'a more in-depth and contextualized understanding of the program and its practices' (Greene, 2007, p.18).

Method of analysis

The method of analysis for the data from the survey, observations, online material and one interview used the template approach (Cain, 2015) mentioned above. Though usually used to analyse qualitative data, this approach also included quantitative data from the evaluative survey. Inferential statistics in the form of percentages of ratings on the Likert scales were used to ascertain how accessible and applicable the research seminars were perceived to be and these were included in the appropriate categories mainly populated by the qualitative

data. In this way, quantitative and qualitative data are interwoven to form a comprehensive narrative (Robson, 2002) of how participants rated the research-engagement programme and why this might be. Of course, it would have been preferable to analyse whether the perceptions of the survey respondents translated into practice using Guskey's (2000) evaluation of PD but the limited data obtained was still able to be presented as a case study into how a particular school practised evidence-informed practice and the perceptions of the teachers involved in this.

Limitations

The same limitations as the ethnographic case study can be identified in this mixed methods case study, with the issue of access to a range of opinions even more relevant here. Creswell and Plano-Clark (2011, p.8) have warned that 'the type of evidence gathered from one level in an organization might differ from evidence looked at from other levels' so it was unfortunate that members of the other 'levels' of participating schools were not available to participate as planned. Most data gathered were from a leadership perspective, with the only perceptions from other teachers being gleaned from brief survey data.

This bias would have been more stark, however, if the study had continued as an evaluation rather than being transformed into a case study. With the only participant willing to be interviewed being the deputy head teacher who had organised the research engagement programme, evaluating the impact of this from her perspective only would have been a moot exercise. Whilst the study was limited in its evaluative capacity, it did, however, illuminate more examples of research practices and provide some insight into the perceptions that participants had of the research engagement programme, including its impact. Fortunately, another school was recruited so a user-focused evaluation that moved beyond projective outcomes could go ahead as intended in another setting to create the third 'dimension' of the study into the research engagement of teachers.

3.6 Third Dimension: ‘reach’

3.6.1 User-focused evaluative case study

It was clear that to gain an understanding of the potential ‘reach’ of research engagement, it would be necessary to conduct an evaluation that went beyond simply issuing a survey to research-engaged teachers as in the mixed-methods case study as this method could only determine the perceived worth of research engagement for PD. Teach First (2017) proposed to evaluate the process and output measures of the research engagement element of the new ITE course by asking participants how useful they thought the training was, followed up with how the training in research engagement had been utilised in practice. For this doctoral research, a similar, but more user-focused evaluation was able to be conducted in a third school, with participating teaching practitioners establishing their own criteria to be used in the evaluation. Whilst this was the original intention of the mixed-methods case study, participants were not able to be recruited to engage in this more labour-intensive participatory evaluation.

Although basing the evaluation criteria on literature would have meant less input from the participants, therefore less onerous, it can be problematic if the value, or ‘worth’ as Lincoln and Guba (1980) preferred, is conceptualised by an external other, with the researcher judging whether intentions have been fulfilled (Bamberger, 2012; Burford et al., 2013; Springett, 2001). The question of who should decide what is desirable is raised here (as in Biesta, 2007a and Simons, 2004). If the values of the researcher lead the evaluation, less obvious intended outcomes could be missed; therefore, this evaluation sought to understand the potential effect of research engagement using criteria from the participants themselves in a ‘user-focused’ evaluation. Utilising the values of stakeholders was seen by Greene, Benjamin and Goodyear (2001) as creating credible and useful understandings, especially when evaluating education programmes and similar benefits have also been found in health (Springett, 2000).

Difficulties can arise when transforming the values of participants into evaluation criteria, as in responsive evaluations, for they can be abstract as opposed to measurable outcomes that can be quantified (Abma, 2005). Burford et al. (2013) have developed a framework for evaluating less tangible outcomes based on the values of the participants chosen from 166 possible values-based indicators. Although their evaluation was on health

projects, they believed that their framework could be used in education settings. A benefit is that this ensures that the criteria are viable, as opposed to allowing the participants to set their own criteria and risking these being difficult to evaluate. They did not feel that their framework was too leading but acknowledged that a criticism of their framework is that ‘true participatory evaluation requires these stakeholders to develop their own indicators of success from scratch’ (Burford et al., 2013, p.9). This was decided as the best approach for this evaluation to take, particularly because those involved had already engaged *with* research so it was thought that they would be able to engage *in* this research by setting the evaluation criteria and appropriate methods.

Aims

To understand what successful research engagement meant from the stakeholder perspective (Lincoln and Guba, 1980), a participatory values-engaged evaluation approach was needed, which Greene (2013) believed could be transformative and empowering. Her particular approach was thought appropriate for this evaluation as it sought ‘to illuminate diverse stakeholders’ project assumptions, perspectives, and accompanying values, towards enhanced understanding and improvement’ (Greene, 2013, p.73). It was Patton’s (1997) ‘utilization-focused evaluation’ framework that was ultimately decided upon because as well as identifying the hopes of the programme implementers, it is more pro-active in establishing whether these are actually being realised. As utilisation is not the primary focus but rather the ‘users’ understanding the potential of a research engagement programme, the study can be identified as a user-focused evaluation. The question was not ‘is Lesson Study as a form of research engagement effective?’ but rather ‘is Lesson Study as a form of research engagement as effective as its proponents believe?’.

Recruitment

As with the ethnographic study, purposive sampling of appropriate schools was needed for the evaluation as a school already involved in research engagement was required. A primary school with TS status was eventually recruited in July 2017 through the researcher’s professional contacts with the CCT. The school had joined a programme of LS, which was being run by a consultant, and CCT Lead Advocate, as part of a local mathematics network. This PD initiative required the schools involved to organise their teaching staff into groups of three or four, each working on a ‘research question’ by sourcing evidence to plan a lesson

that was then observed by others in the hub to evaluate. Although the main intention of the evaluation was to understand the potential of this form of research engagement, the school was recruited with the incentive that the data could be useful to improve the programme and for accountability measures such as Ofsted and the governing body (Burford et al., 2013).

Sample

The head teacher named two teachers thought to be appropriate participants as they were very vocal in their belief that the LS programme they engaged with in the 2016-17 academic year was valuable and these teachers agreed to participate. Just focusing upon these participants and the head teacher meant that the evaluation was manageable enough to include ‘context, judgment, values, and interests’ (Greene, 2013, p.73), although her intention to include participants ‘commonly representing a diversity of program stakeholders’ was not followed as it is not an aim for this evaluation to claim to be representative.

Methods

As an evaluator should be familiar with the programme being evaluated (Robson, 2002), the researcher observed three lessons that had been informed by evidence, called ‘Research Lessons’ in the 2016-2017 LS cycle and interviewed the head teacher and consultant involved informally to gain an insight into the programme. The researcher collaborated with the two consenting teachers and head teacher to agree on appropriate research methods that could be used to evaluate whether what they perceived to be as valuable outcomes of their research engagement through LS were evident. The methods suggested by the stakeholders were observation, a pupil focus group and document analysis. In addition, the researcher requested an interview with each teacher so clarifications could be made. All methods are outlined in Table 12 below.

Table 12: evaluation methods

Aspirational outcomes	Methods agreed to evidence this outcome	Focus
1. A culture change	Observations during visits (n=7)	Teachers referring to evidence from research to develop their teaching. Was an 'official piece of educational research' published?
2. Teacher agency	Comparison of original lesson plan and the plan adapted by the two teachers through LS	Key questions: why did you change that? Is that what you learnt in last year's LS?
3. Pupil confidence in approaching mathematical problems	Observation of a maths lesson Focus group with five pupils	Are pupils confident when approaching maths problems? Key question: How do you know how to solve the problem like that? Key questions: What is maths? What made you 'get it'? Is there anything in your lessons that makes you feel confident? How do you feel when sir gives you problems to solve?
4. Efficiency in delivering the maths curriculum	One semi-structured interview with each teacher to explain changes using adapted lesson plans as visual stimuli.	Key questions: why did you change that? Is that what you learnt in last year's LS? How far do you normally get in the scheme at this point in time?

Simons (2004) suggested that methodologies that include participation, democracy, case study, narrative and responsive or stakeholder approaches are the most appropriate to enhance practice. This evaluation incorporates all of these elements as the stakeholders participated in the establishment of criteria democratically and the findings based upon these criteria took the form of qualitative data gathered from:

- 'Scoping' visits to two other primary schools involved in the LS Project
- An informal initial meeting with the consultant directing the project
- An informal meeting with the head teacher and consultant
- Observations at a Lesson Study Conference, attended by school personnel

- Separate meetings with the two participating teachers
- Informal interviews with two TAs
- Lesson plans adapted from the scheme of work bought in by the school
- A lesson observation
- A focus group with five pupils
- Semi-structured interviews with the two participating teachers

These qualitative data are presented as a case study in a narrative style, making it more accessible (Simons, 1996), but not without limitations, as discussed next.

Limitations

Inferring the potential of small-scale interventions, such as the research engagement programme being evaluated in this study, have been criticised for simplifying the impact that may have been due to other strategies employed by the school (Maxwell et al., 2015). This may have been the case if quantitative data had been chosen by the stakeholders as appropriate evidence for the evaluation as utilising statistical data can lead to dubious deductions being made. It was qualitative data that the stakeholders chose, though, making the evaluation a ‘social practice of making judgments of quality about an intervention or a program implemented in particular contexts, based on data from social science methods and criteria of quality stipulated by someone or ones’ (Greene, 2013, p.73). The criteria were set by the participants themselves and the data consisted of their own beliefs about the effect of their research engagement in their own parlance, which Burford et al. (2013) found to be powerful. Springett (2001, p.89) also saw the benefits of participatory evaluation in this way, claiming that it ‘enhances scientific validity, producing richer and more accurate data, and creates active support for the results and therefore greater commitment to change’.

There are limitations of the user-focused evaluation as the data initially intended to be collected was not as comprehensive as was hoped. For example, it was difficult to assess whether the intention for the improvement of pupil confidence in maths had been achieved from just one lesson observation. The pupil focus group conducted after the observed lesson did not glean further insights into their confidence in maths as first intended. A longitudinal study that took into consideration what maths lessons were like before the teacher’s research engagement would have been more insightful but was not possible as LS had already been started in the previous year. The interviews with the teachers were helpful in gauging what their practice was like before they became research engaged and although they admitted that

they could not attribute their enhanced practice (as they perceived it) to engaging with research, all three participants thought LS was still worthwhile.

Not all data were able to be collected, however, due to the head teacher being unavailable to comment on whether the intention for ‘an official piece of educational research’ based on the findings of their LS had indeed been published. This would have been a tangible outcome of research engagement that was desired by the head teacher but presumably did not come to fruition, though this cannot be confirmed. It would have been interesting to discuss with stakeholders why this aspirational outcome may not have been achieved but these key players were not readily available.

Having only three stakeholders from one school involved in the evaluation could also be seen as a limitation but Simons (1996, p.231) would argue that ‘by studying the uniqueness of the particular, we come to understand the universal’ and called for more evaluations on ‘the particulars of one person, context, programme, policy and its context and circumstance’ (Simons, 2015, p.181). She welcomed the paradox of the case study as it provokes new thinking about one’s own context, which is arguably more important than the readers of research passively receiving conclusions. How data were analysed in order to be useful for stakeholders is outlined next.

Method of analysis

Data analysis was similar to that found in Ovenden-Hope’s (2018) evaluation using two rounds of coding; the first being done deductively based upon the theory of change constructed from the aims of the programme and the second being inductive to explore emerging themes. For this doctoral study, an initial template (Table 12, above) was formed, consisting of the values the participating teachers believed were being fulfilled in their research engagement. The aspirational outcomes set by the participants were evidenced as much as was possible and data were placed into corresponding categories. As in Maxwell et al.’s (2017) evaluation of evidence-informed teaching, the analytical framework originally devised was revised to take into account emerging themes. This approach was particularly helpful for this evaluative study as some of the unintended consequences were able to be identified (Robson, 2002). Analysing data in an evaluative case study, as Simons (2015, p.174) pointed out, involves interpretations to be made intuitively, which the researcher was able to do as a former teacher-researcher.

3.7 Ethical Considerations

Approval from the university's Research Ethics Committee (REC) was sought in two phases: phase one being in relation to the survey and semi-structured interviews, which shared the same research population; and phase two pertaining to the case studies of three distinct research fields. The ethical code developed during the process of obtaining ethical approval will be detailed in this subsection, along with the ethical considerations that had to be made in the field. In all cases, the most recent (at the time) Ethical Guidelines by BERA (2011) were adhered to.

3.7.1 Phase One: survey and interviews

Ethical approval to distribute surveys and interview respondents was granted (ref: 16/EHC/003) once considerations were made of the participants, their consent and how their data were to be collected, used and stored.

Participation

All questions asked in the survey were closed to minimise completion time. There was, however, the option for participants to provide their own answer to appropriate questions as it was not the intention to limit the participants to an exhaustive list of possibilities. There was also a space for any further general comments at the end of the survey.

Due to recruitment difficulties, further ethical approval was sought to offer feedback of findings to consenting gatekeepers (as recommended by Angrosino, 2012). It was thought that this might incentivise head teachers to distribute the survey in return for useful information that could inform improvements to the school's research engagement. The university's REC approved that anonymised data gathered from one school could be shared with the gatekeeper of that school if requested. Although this was offered, it was not utilised by any head teacher.

If gatekeepers approved for their school to be involved in the research, they may have emailed the link to all staff or left the paper questionnaires in a prominent place (see Appendix 1b), which might include non-teaching staff who would not be eligible to complete

the survey. To avoid wasting anyone's time, clear inclusion criteria were stated at the beginning of the questionnaire. There was no need for these criteria to be stated again for the semi-structured interviews as interviewees were self-selecting from the survey.

Respondents who wanted to participate in the follow-up interview were asked to leave their email address to be contacted but did not have to divulge this personal information. It was made clear that if they did not want to provide their email address on the survey, they could contact the principal investigator (PI) directly via a phone number provided by the university.

Consent

Although completing the survey could have been taken as implied consent, it was thought necessary to ask respondents to specify that they had understood the participant information, which stated the aims of the study, by ticking a box before starting. Similarly, voluntary informed consent was obtained from interviewees by emailing to them a participant information sheet (Appendix 4a) beforehand so they had time to familiarise themselves with this part of the study, before signing the consent form.

Data

Names from signed consent forms collected as part of the interviewing stage of the research are stored in a locked filing cabinet on university premises and electronic data (such as that gathered via Online Surveys, the audio recordings of interviews and the transcriptions of these) are password protected. Data will be retained for no longer than five years, in line with the university's regulations. Interviewees were free to withdraw from the study at any time; however, as the online survey was anonymous it was not possible to identify and remove an individual's survey data. All participants were anonymised using pseudonyms reflective of their position for ease of understanding. In some cases, pseudonyms are reminiscent of social media 'handles'.

3.7.2 Phase Two: case studies

The next phase of the research involved three discrete case studies approved by the university's REC (16/TPL/004) simultaneously as they involved similar instruments of data collection: observations, content analysis of documentation and interviews. They each yielded their own unique ethical considerations, however, which will be detailed separately here, though in the same categories as above: participation, consent and data.

Participation

As much of the ethnographic case study involved participant observations, which can provoke stress and create pressure if participants feel their work is being evaluated (Hammersley and Atkinson, 2007), it is made clear to the participants in the explanatory email sent to all staff at the school (Appendix 5b) that the researcher will not be judging individuals (Creswell, 2012).

There is another layer of ethics that must be addressed as during the ethnographic study, I was very close to the process of teacher research in schools and had a duty to intervene if practice is deemed to be unethical. As a PhD student carrying out a piece of research, my responsibilities are to conduct my own ethical research according to the relevant guidelines (from the university and BERA's (2011) Guidelines for Ethical Research) and follow the protocol if any damage to human subjects is witnessed, as a result of my own research or the practice of the teachers I was investigating. There is sometimes no regulation of the ethical implications of close-to-practice research being conducted by teachers, as has been witnessed in my former place of work, so if ethical issues were to arise, they would be dealt with professionally and sensitively. Any need for intervention would be approached with caution and only be implemented if necessary, especially when considering that school research may not have specific codes of practice pertaining to ethics in research as in an HEI. 'Ethical situationism' whereby 'what is and is not legitimate action on the part of the researcher is necessarily a matter of judgement in context,' (Hammersley and Atkinson, 2007, p.219) was applied to the study.

An amendment was approved by the university's REC for the evaluative case study as the observations involved children, which was not the case at the other sites as it was only teacher CPD that had been observed. It was not anticipated that there would be any objection

to my presence in a lesson as children were very familiar with adults observing their learning as the LS project itself had involved several teachers from other schools observing ‘Research Lessons’ throughout the 2016-17 academic year. During one of these observed lessons, before the case study had begun, the researcher had been present and did witness a child in some distress because one observer had photographed what they were writing. To minimise the risk of any discomfort, the researcher was not as intrusive as this during the data collection for the case study and were any discomfort to be detected, the observation would have ceased immediately and the attention of the teacher raised.

For the focus group after the observed lesson, the class teacher had identified five potential participants who were thought to be confident enough to articulate their thoughts about their learning to the researcher. It was deemed necessary to conduct a focus group rather than individual interviews because it was thought that speaking to individual children might be quite intimidating, whereas the pupils are familiar with being asked questions about their learning, which is often a shared experience, in groups as part of the school’s internal quality assurance procedures and the external inspections carried out by the Office for Standards in Education (Ofsted). The teacher was not present at the focus group so pupils could speak freely.

Consent

As lesson observations were not uncommon at the school where the evaluation took place and were, in fact, common practice as part of the school’s quality assurance process, it was not deemed necessary to acquire parental consent for the observations. Furthermore, it was the general learning that was observed and not particular children. The pupil focus group, however, did require written consent from parents or other guardians (Appendix 7b), as well as assent from the children, following BERA’s (2011) adherence to Article 12 of the United Nations Convention on the Rights of the Child. Pupils identified by the teacher were given a pupil information sheet and assent form (Appendix 7b) and consent form to take home to their parents/ guardians and given seven days to return the signed documentation if they and their parents/ guardians agreed to their participation. All of the children selected by the teacher returned the documentation to be able to participate.

Written consent from all participants of the ethnographic case study would have been difficult to obtain as the school’s research culture that was being observed involved all

members of staff at the school, those in alliance schools and attendees at conferences. Attempt was made, however, to inform everyone involved of the study that the gatekeeper had consented to. An information sheet (Appendix 5b) was emailed to the school's relevant mailing lists. If any members of staff felt uncomfortable with the researcher's presence in their work activities being observed, they were able to raise this (via another member of staff if desired) and observations of staff activities where they were present would have ceased.

For the mixed-methods case study, a gatekeeper information sheet (Appendix 6a) was sent to the gatekeeper of the school's research engagement, the deputy head teacher. This detailed what the evaluation (originally intended) would involve but as this was not possible because other teachers did not consent to follow-up research, access to other data (an interview with the deputy head and observations of her conference presentations) was renegotiated (Hammersley and Atkinson, 2007). Voluntary informed written consent (Appendix 6a) for the school to take part in the study was, therefore, obtained from the gatekeeper, who also signed a consent form to be interviewed (Appendix 4a). Survey respondents were informed of their participation in the study in a statement at the beginning of the survey (Appendix 6b) and their completion and return of the survey was taken as implied consent.

Data

Data from all participants involved in the case studies were securely stored in the same way as data gathered in phase one. Confidentiality and anonymity were guaranteed (as far as is possible), with the use of pseudonyms and participants had the option to withdraw their data from the studies with no implications.

3.8 Summary of Methodology

Each method utilised sought to address all three aims (perceptions, practices and potential) of the research but certain methods were more useful than others in illuminating particular elements of the whole phenomenon. This mixed-methods research first sought a broad sweep of the research population to gather *perceptions* of research engagement and added depth by

interviewing self-selecting respondents before delving deeper into two particular schools to produce case studies of their research *practices*. The third dimension, 'reach', intended to capture what the *potential* outcomes of research engagement might be via a user-focused evaluation. During the interpretation of data generated from these research instruments, it was important to remember their limitations, using Tillema et al.'s (2008, p.54) framework:

- 'Telling more than we can know' is the case with the survey. It primarily aimed to provide a broad understanding of the perceptions of research engagement but as these may have been formed by respondents in the moment, these may only be fleeting perceptions that are changeable. As Hammersley and Atkinson (2007, p.16) maintain, just because data are constructed, does not mean that they cannot represent social phenomena.
- 'Telling only half the story' was inevitable in the case studies as they disproportionately focused upon participants heavily engaged in research practices. This is why one case study being ethnographic in nature was so important for although interactions were limited to key participants, the researcher was immersed in the field of research enough to be able to observe the reactions of other members of staff who were not as enthusiastic about research engagement as the others.
- 'Ignoring what matters' could have been a problem in identifying the potential of research engagement if the evaluation had used a priori criteria but it was, in fact, the participants who set the evaluation criteria.
- 'Overlooking what counts' certainly happened during the data collection, particularly in interviews, and missed opportunities for follow-up questions were only discovered in the process of transcribing and analysing data.

It was the intention for understandings to come into focus as the data from the three dimensions were gathered and converged with the knowledge gained from literature, as epitomised in the next chapter.

Chapter Four: Findings and Analysis

Findings are presented in this chapter according to the four studies conducted using the following research approaches:

1. survey and interview
2. ethnographic case study
3. mixed-methods case study
4. evaluative case study

Taking inspiration from Coldwell et al.'s (2017) influential study on evidence-informed teaching, each section is divided into subsections, each starting with a summary of findings, followed by analyses of relevant data strands.

4.1 Survey and Interviews

This section combines findings from the survey detailed in 3.4.1 and interview data from the self-selecting survey respondents (n=6). It is structured according to the theoretical framework drawn up in the literature review so that findings are categorised as pertaining to:

1. teachers *re*-searching (reflecting upon their own practice),
2. engaging *with* existing research,
3. *engaging* the findings from (this) existing research, and
4. teachers engaging *in* their own research.

Within these subsections, quantitative data in the form of graphs and qualitative data in the form of verbatim quotations or paraphrases from the survey and semi-structured interviews will be presented. Coldwell et al. (2017), in their evaluation of evidence-informed teaching, expected to find variation at the teacher level, depending upon their own experiences and skill sets, and at the school level due to contextual factors; therefore, this section begins by displaying the characteristics of the research participants and the contexts in which they work.

4.1.1 Research participants and their contexts

Starting with an overview of the survey respondents, this subsection then introduces each interviewee using pseudonyms relating to their role in education. Prominent personal and contextual factors relating to the research engagement of these six individuals are detailed and linked to survey respondents as a whole so their experiences can be viewed with a wider perspective.

The survey began by asking for demographic information such as gender (Question 1) and role in education (Question 2). Fig. 5 presents the distribution of roles of the survey respondents, ranging from student teacher to in-service class teacher and leadership responsibility. It also demonstrates that classroom practitioners who are not teachers but hold a supporting role, such as TAs, are included as respondents, as in the report on harnessing educational research by the Royal Society and British Academy (2018). Some respondents did not identify with any of the options provided in the questionnaire, with one self-identifying as 'Lecturer', two specifying that they are SEN (special educational needs) teachers, two stating that they offer 'SEN Support' and one noting that they have a 'Pastoral' rather than teaching role. For the purposes of this research, the TAs, SEN and Pastoral Support practitioners are grouped together under the title 'Support' (n=10) for analysis. Likewise, the SEN teachers and Lecturer are placed in the 'Teacher' category (n=32) and Middle and Senior Leaders have been combined to form the category 'Leader' (n=34). Respondents who were undergoing ITE via the several routes available in England (Beauchamp et al., 2013) were merged to form the group 'Student Teachers' (n=33).

Figure 5: stacked bar chart of role and length of service

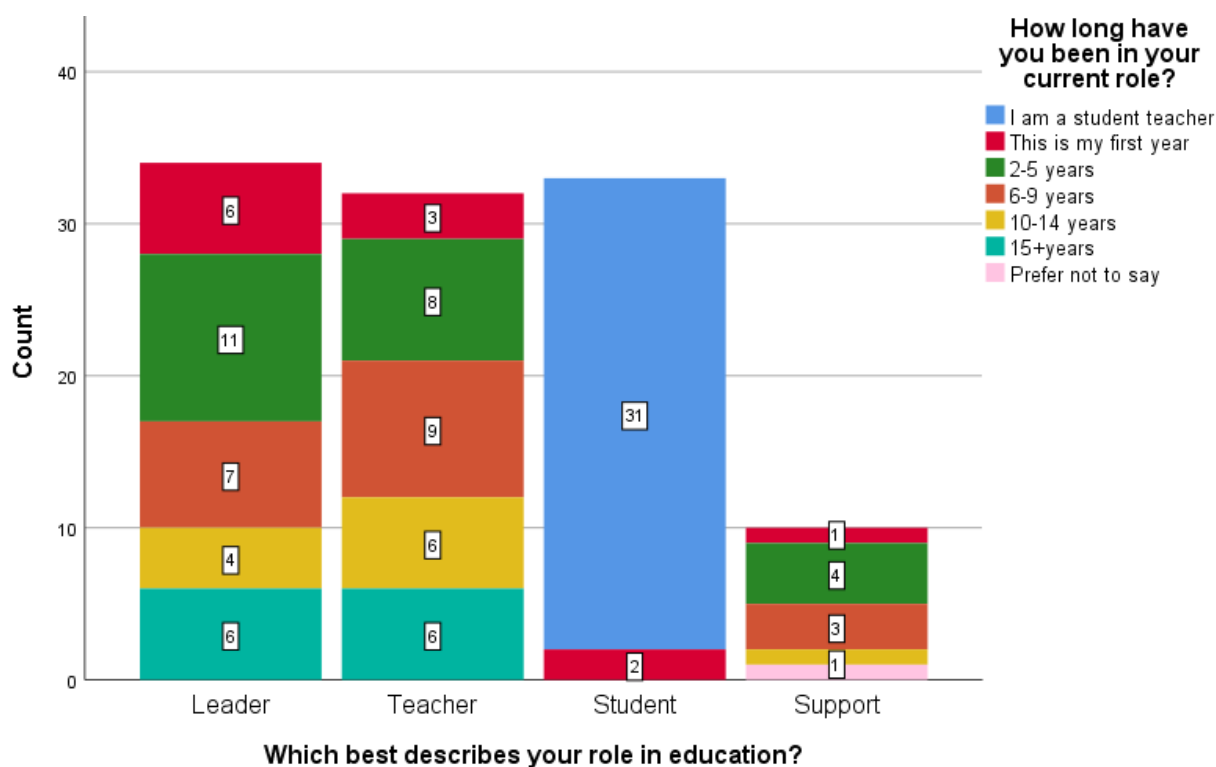


Fig. 5 also presents how long the respondents have held their current role, which was not as straightforward as expected and could have been misinterpreted in the absence of interview data. Analysing the survey data in isolation reveals anomalous findings in the Student Teacher category as it appears that two respondents did not identify as a student teacher and instead selected ‘this is my first year’. Both of these respondents were undertaking school-based ITE, one via School Direct (SD) and one via a school-centred initial teacher training (SCITT) programme, which could indicate that students on school-based ITE courses already see themselves as teachers rather than students. Qualitative data, however, provided more explanatory detail as the only respondent on a SCITT programme provided her contact details to be involved in a follow-up interview. From this, it transpired that she had obtained a teaching qualification in another country but this was not recognised in England. She had, therefore, been teaching as ‘long term supply and then I did a salaried SCITT... so essentially I’ve had my own timetable of lessons and teaching whilst also doing the qualification’. Although it can be inferred that the SCITT programme, with its salary and teaching responsibilities, is seen as employment rather than training by some, in this instance the qualitative data gathered reveal a more nuanced narrative that supplements the quantitative

data, which is why both the quantitative and qualitative data are presented alongside each other in this chapter.

School-centred Initial Teacher Training

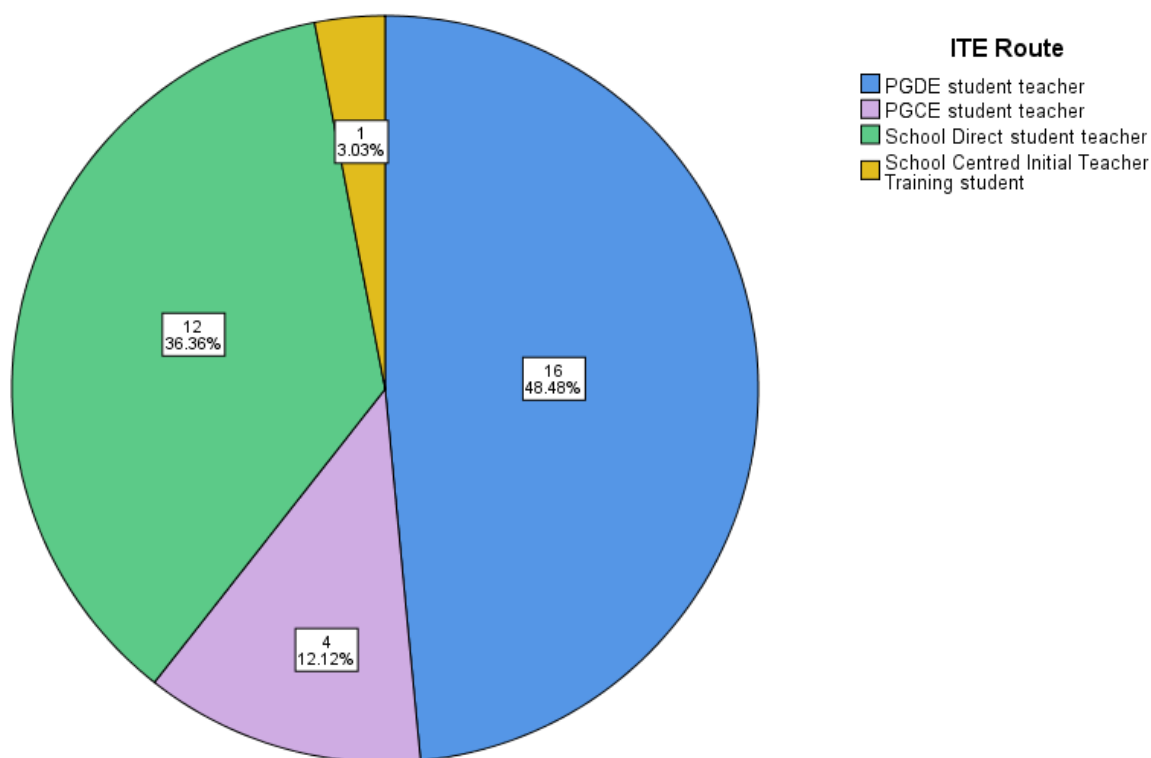
The participant on the SCITT programme, referred to as ‘Ms Scitt’, described this course as ‘learning by doing’ in contrast to the teaching course she had already done in another country, described by her as ‘coursework based’ which involved ‘a lot of research’ for a Master’s level qualification. She said that she preferred the SCITT but then mused that this might be because she already had ‘the benefit of that theoretical side’ of teaching from her Master’s level ITE. She elaborated that this enabled her to situate herself in a wider range of pedagogies, allowing her to be more reflective. She did say that the course she was currently embarked upon also involved research and when asked to elaborate upon what she meant by ‘research’, she said it ‘goes in both directions’ in that it is about engaging *with* and *in* research.

Post-graduate Diploma of Education

Another student who elected to be interviewed had just completed her PGDE in EYFS, so will therefore be known as ‘Ms Diploma’. She spoke of ‘research in school’ during the practicum of this course and described research engagement as ‘using an evidence base to implement initiatives that are known to have a positive impact’ in what Cain (2015) would identify as instrumental use of research. As well as ‘adopting evidence-based practice’, as she stated in the survey, Ms Diploma also left a comment about ‘contributing to evidence-based practice through conducting action research’.

Student teachers from four ITE routes answered the survey (Fig. 6) but identifying statistically significant differences was not possible, nor desirable, due to the small numbers in each category. For the purposes of analysis survey responses from student teachers are divided into university-based (combining PGDE and PGCE students) and school-based ITE (consisting of SD and SCITT students).

Figure 6: pie chart displaying ITE programmes of participants

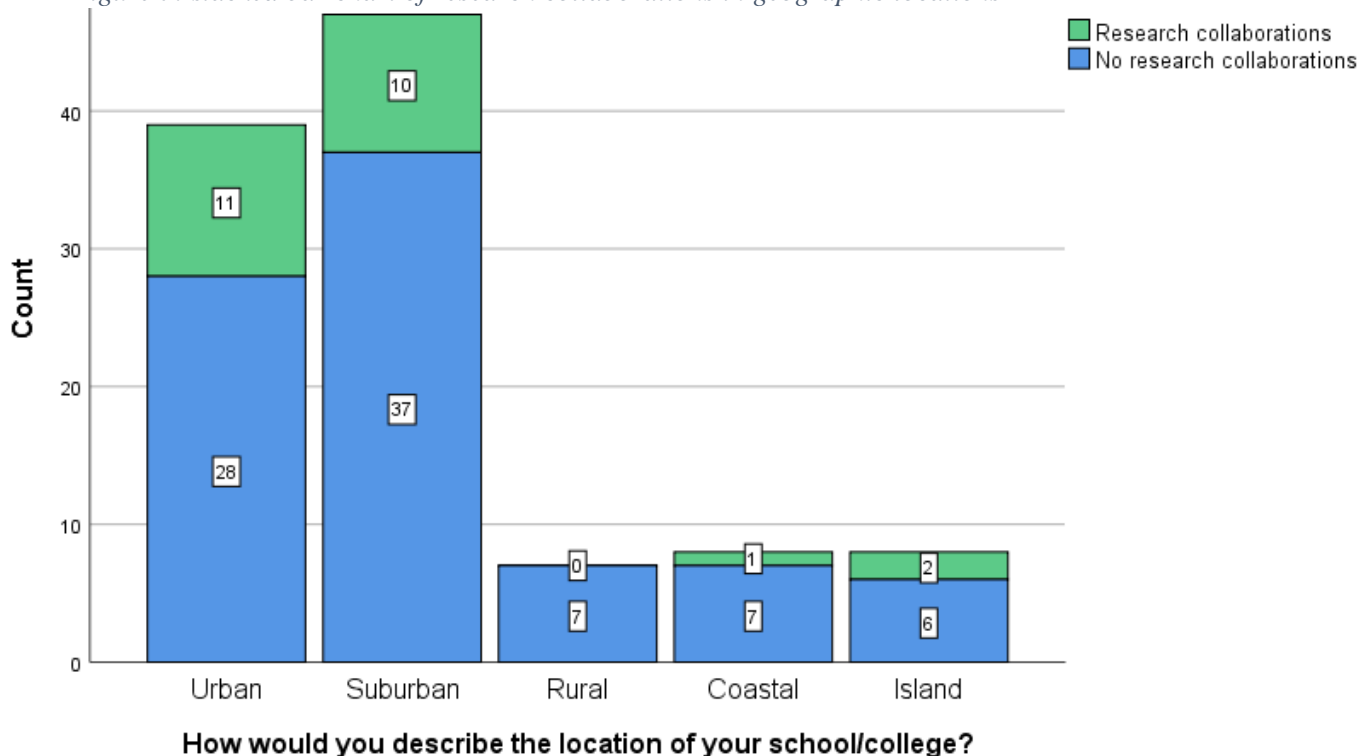


Head Teacher from an Island Primary School

The only interviewee from the primary sector was a head teacher, named with the pseudonym ‘Mr Head’, who intimated that being in a small primary school and in an island location affected the school’s research engagement. He said that in his school, all ‘seven classroom teachers, including myself, will have an area to investigate’ over a year and the small size of the school meant that ‘not just teaching staff but support staff as well’ could be part of ‘research-based teams... on certain parts of the curriculum’. These research-based teams involved teachers reading about interventions and trying them out so that the whole staff can decide whether to take it forward as a whole-school initiative for the next year. Mr Head associated being a ‘research-based school’ with his connections to three universities, none of which are in close proximity to the school, though two were North West universities. The school was involved in an ongoing project with a university, which Mr Head described as ‘action research’ focusing upon ‘what’s worked for us and what’s not’, but the constraining factors for the school’s participation in this research engagement are that the other seven

schools involved are ‘from the South West area so they have direct access to the research team’ at the university. This may mean that schools local to universities are more likely to collaborate with academics in research (Groundwater-Smith and Campbell, 2010) and this is also evident in the survey data, which included seven respondents working in rural locations where there were no research collaborations (Fig. 7). However, of the eight respondents from both coastal and island locations, there was some research collaboration with universities reported and it could be argued that these locations are just as remote.

Figure 7: stacked bar chart of research collaborations in geographic locations

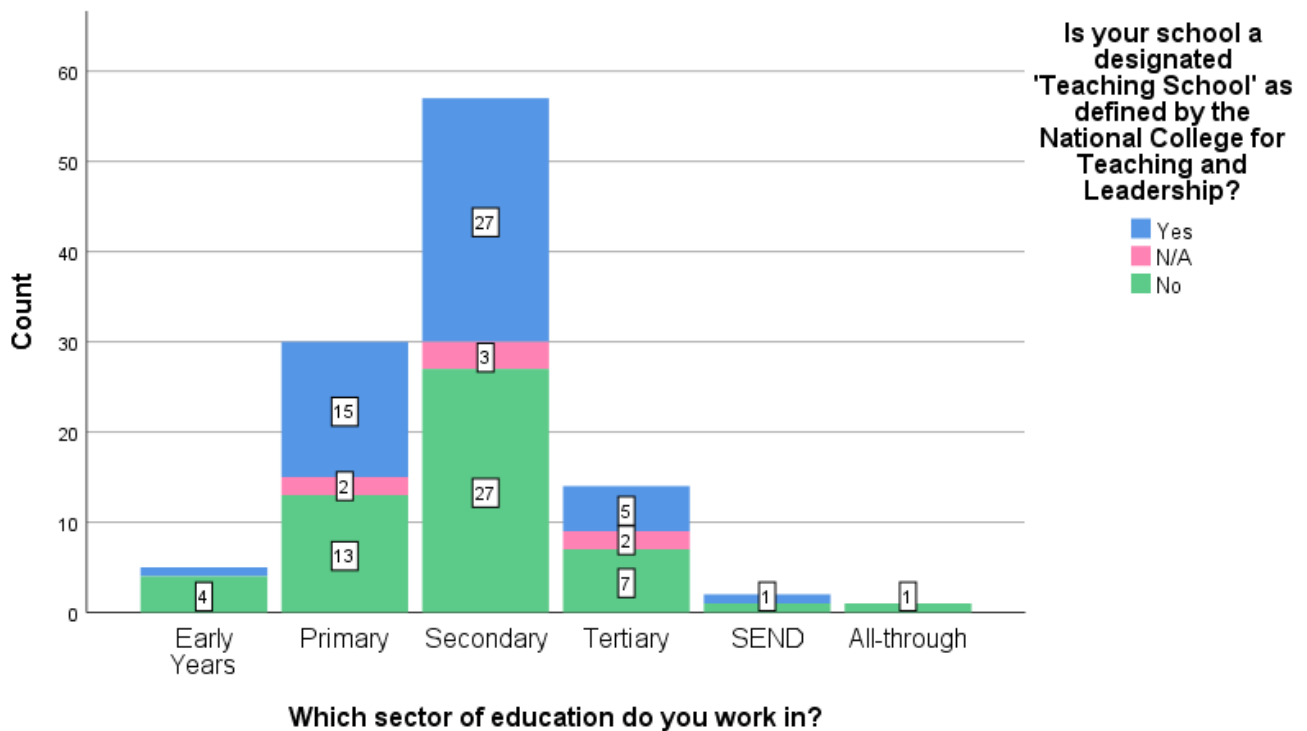


Just as the schools involved in the same research project as Mr Head’s school were ‘mainly secondary’, so too were the schools in this doctoral research, both in the survey (see Fig. 7) and in the rest of the interviews introduced below. This was possibly because primary school practitioners who were invited to complete the survey may not have had experience of research engagement or strong views about it, thus being less likely to engage in a survey on that topic (Williams and Coles, 2007). Maxwell et al.’s (2015) survey of TSAs, however, received more responses from the primary sector.

Middle Leader from the Specialist Sector

A middle leader from a secondary school specifically for pupils with special educational needs and disabilities, therefore called ‘Mr Send’ here, associated research collaborations with TS status, for which the school was aspiring. He revealed that ‘we have literally had a presentation this morning just before you came in about Teaching Schools’ and believed that ‘the opportunities that opens to collaborating with others will be, again, will help us to develop ourselves further’, which was the aim of the individual research projects that all teaching practitioners were involved in that year. It would have been beneficial to isolate survey respondents from National Teaching Schools to identify differences in their research engagement but the question asking whether participants taught at a National Teaching school was misunderstood by many respondents. As Fig. 8 demonstrates, five respondents from the tertiary sector identified their college as a TS even though the further education establishments that were part of the research population did not have this status. Whilst this might mean that these respondents only teach in the sixth form of a secondary TS, one actually specified that they work in a sixth-form college, which is not possible as no participating establishment fits this description. It is more likely that this respondent, and probably many others, did not understand what this question was asking.

Figure 8: stacked bar chart of 'Teaching Schools' in each sector

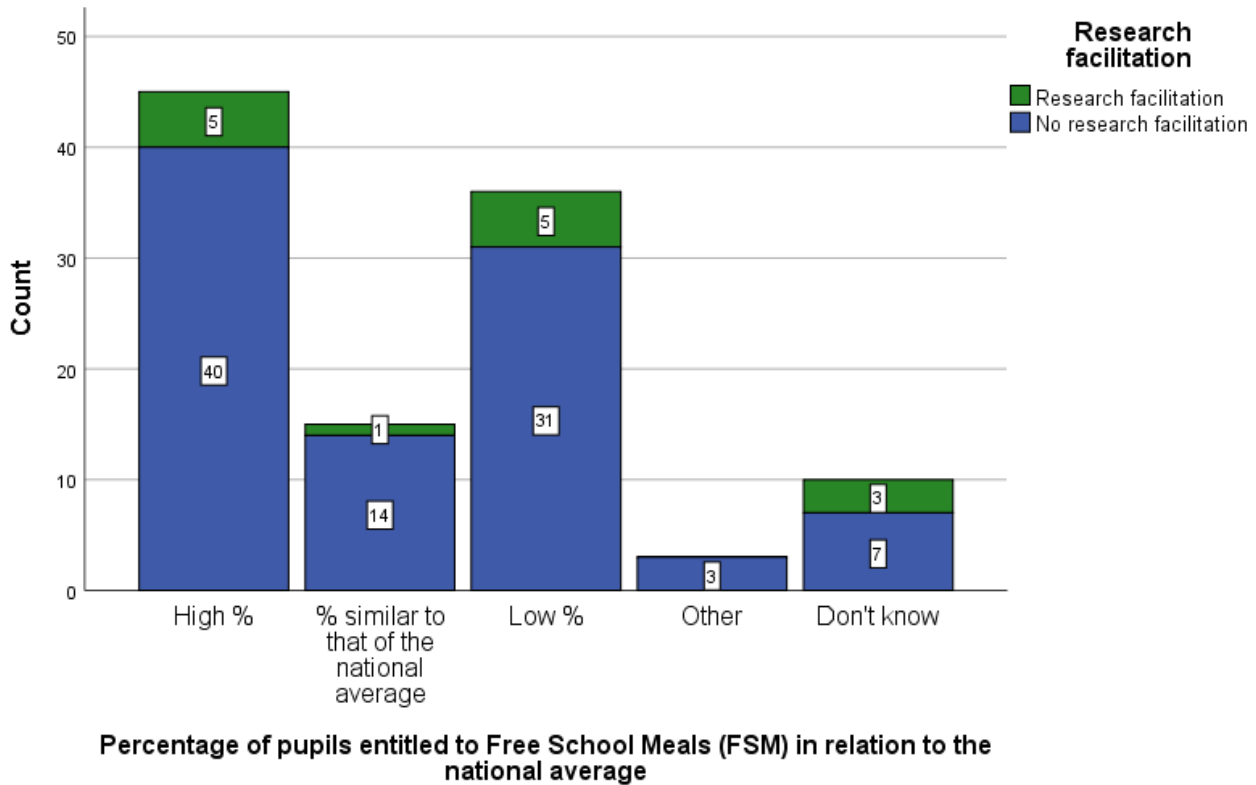


Middle Leader from the Independent Sector

Another middle leader interviewed taught in the secondary independent sector, therefore is known as 'Mr Independent', and at the time of interviewing he was engaged in his own doctoral research, part-funded by the school. He explained that the school 'has a policy of giving £600 per year for each of the first two years of somebody doing a Master's course'. As the school generates its own revenue via fees, it could be deduced that this sector would be able to fund more research facilitation via Master's courses. It could, however, be argued that schools in areas of high socio-economic deprivation are also in a financial position to fund research into closing the attainment gap via the PP (Maxwell et al., 2015). Survey respondents were asked to select what percentage of their school roll were in receipt of free school meals (FSM) as a measure of their PP funding (Fig. 9). Of the respondents reporting that their school received a low amount of PP funding, 16.13% had been involved in research facilitation, whereas this was 12.5% in schools with more PP funding. Although schools may

have been using PP funding for research, it does not appear that research facilitation from HE was necessarily invested in.

Figure 9: stacked bar chart of research facilitation according to deprivation index

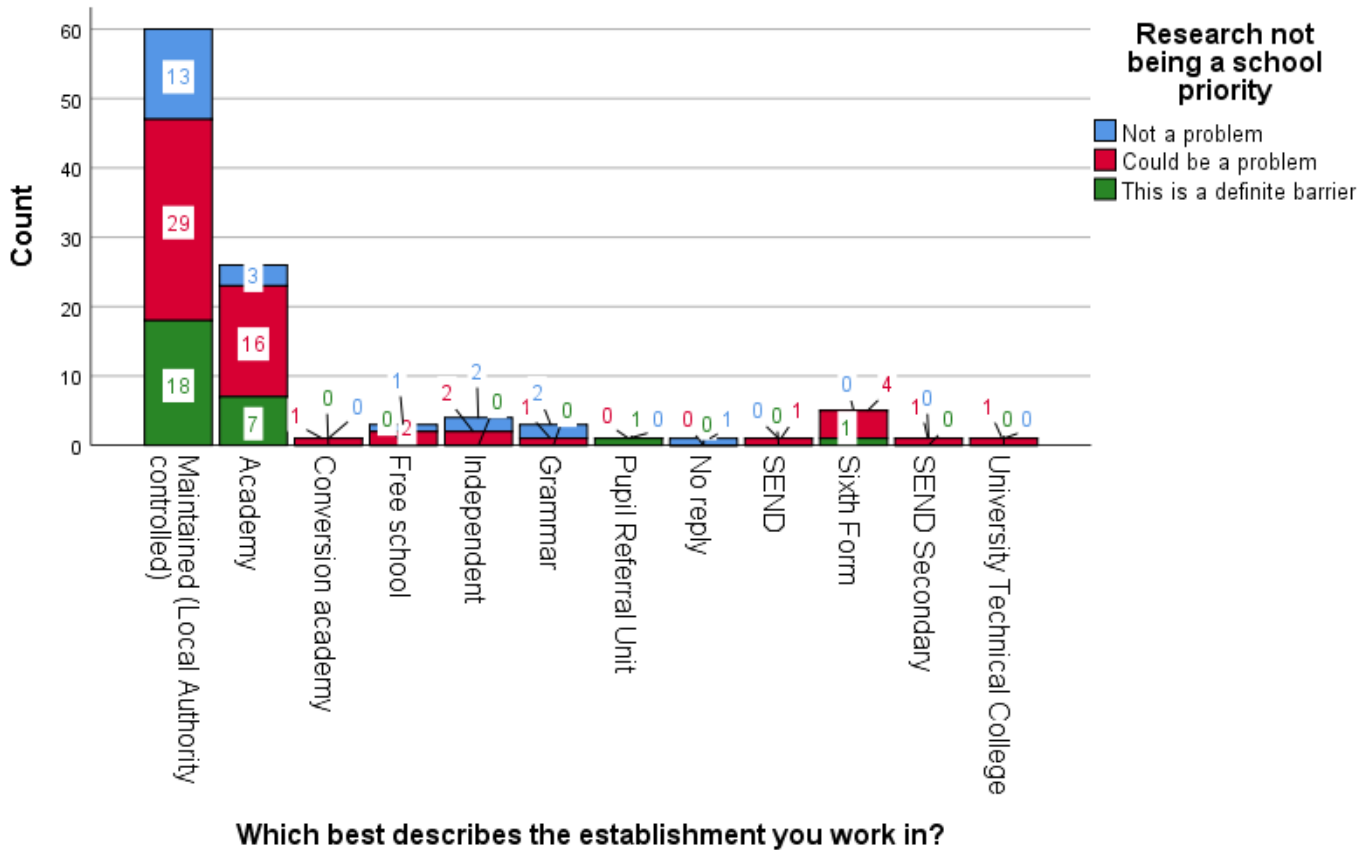


Middle Leader from a Secondary Academy

The final interviewee to be introduced is a middle leader from a secondary school that did have a high proportion of students generating PP income. Her school had previously invested in research facilitation from HE before being converted to an academy. She will, therefore, be referred to as ‘Ms Academy’ as this academisation was thought by the respondent to be a contributing factor to the decline in research engagement that she had detected since this conversion. Prior to this, a Master’s degree was taught on site but she explained that because ‘we’re part of a Multi-Academy Trust. There are different priorities and different pressures and I don’t think there is a will to support that kind of Continual Professional Development anymore. Certainly financially’. Research engagement has been seen by McLaughlin (2010) as needing to align with school planning and available resources, and these may now vary according to the several school types there are in England, the survey respondents from

which are displayed in Fig. 10. Research not being a school priority was posed as a possible barrier in the survey and the extent to which respondents agreed is displayed, according to school type.

Figure 10: stacked bar chart of school type and school prioritisation as a barrier



Ms Academy’s feelings that being an academy has created a barrier for research engagement is not reflected in the data, with 26.9% of respondents teaching in an academy saying that research not being a school priority was a definite barrier, compared to 30% of respondents from the maintained sector. This may imply that prioritising research is determined by school leader (Godfrey and Brown, 2018) rather than school type as the academisation of Ms Academy’s school coincided with a change of leadership. Furthermore, a deputy head of a primary school left this comment in the free-text box at the end of the survey: ‘I think your research into research sounds very interesting. We have tried a few different approaches at our school of which I could provide information on but I would also like to know a more about what you have learnt [sic]’. There is clearly an appetite in the teaching community,

therefore, to learn more about research engagement as leaders have different modes of research engagement to choose from.

In Ms Academy’s explanation of the Master’s course she completed at the school before it became an academy, she referred to practices that might be identified as *re-searching*, engaging *with* research and *engaging* findings from this existing research respectively. She explained that the course was about ‘helping teachers to look at and examine their own practice [re-searching] but also to look at how things in education have developed over the years [engaging with research] and... get them in touch with research and see how it could affect their own professional practice [engaging research]’. The final aspect of the Master’s course, as described by Ms Academy here, is reminiscent of the BERA-RSA definition of research engagement, which was used to inform the statements in the questionnaire. Of course, Ms Academy might have used this description because she was familiar with the wording on the survey but she later elaborated upon how she thought that engaging with existing research ‘had a big impact on what I was doing as a teacher’. It can be inferred, therefore, that she had formed these opinions before participating in this doctoral research.

As part of the Master’s course, Ms Academy also engaged *in* her own research by ‘observing lessons to use as information for my dissertation’ but, interestingly, this more active form of research engagement was not as valued by the wider research population. When ranked by mean (Table 13), the activities listed in Question 11 that can be identified as *re-search* appear to be most important, followed (approximately) by *engaging* findings from existing research, then engaging *with* research and, finally, engaging *in* research appears to be least important (see Key for the colour-coding used).

Key to Table 13

<i>Re-searching</i>	<i>Engaging findings from research</i>	<i>Engaging with research</i>	<i>Engaging in research</i>
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Table 13: mean ranking of research practices by importance

Statement	Number of Responses	Mean
Being critically reflective	109	3.51
Sharing experiences with colleagues, maybe as part of Joint Practice Development	109	3.43
Working in a development group i.e. to address parts of the school development plan	108	3.05
Understanding why research is important	108	2.96
Knowing the implications of research for your day-to-day practice	108	2.95
Understanding what can be learnt from research	109	2.94
Knowing the implications of research for education generally	108	2.93
Combining information gained from your own practice with academic theories	109	2.86
Using the results of evidence gathered from strategies trialled elsewhere	109	2.79
Using web-based materials to research issues related to education	109	2.79
Familiarity with the latest research findings	109	2.76
Being able to critique or review research	109	2.74
Being actively involved in the research process rather than being the subject of research	109	2.60
Having the ability to analyse data gathered through research	109	2.57
Familiarity with a range of research methods	108	2.52

These findings are reflected in the literature, in part, though they go further in illuminating how a range of teaching practitioners value different research practices. Hammersley-Fletcher et al. (2015, p.23) asked their survey respondents to indicate their understanding of ‘evidence-based teaching’ from a list of possible definitions. The most frequently selected response was ‘combining academic research evidence with my own professional expertise’, which is similar to the option ‘combining information gained from your own practice with academic theories’ in the survey distributed for this doctoral research. This research practice is identified here as ‘engaging *with* research’ as it requires more consideration than passively engaging the findings *from* research. Similarly, Procter (2015) found that engaging with research was highly valued by the teachers surveyed in his study into the value and practices of school research. Interestingly, the next most popular response in Hammersley-Fletcher et al.’s (2015) survey pertained to teachers conducting their own research, whereas all three options relating to engagement *in* research are least positively rated in Table 13. Teachers, therefore, may include engagement *in* research in their definition of ‘evidence-based teaching’ but consider other research engagement practices as more valuable in practice.

The order of Table 13 mirrors the theoretical framework used in this thesis and to structure most chapters. Coldwell et al. (2017) recognised that there were varying definitions of how ‘research’ was understood by individuals, which is perhaps why more informal research practices of ‘*re*-searching’ rank higher in the data displayed in Table 13. What follows is an exploration of the research practices reported by participants of Phase One that have been identified as *re*-search.

4.1.2 Teacher re-searching

Following the theoretical framework adapted from Carr and Kemmis’ (1986) model of teacher professionalism, the first understanding of research that will be presented is of reflective practice, which, overall, was rated as most important by the survey respondents (Table 13 above). What Mr Send and Mr Head in particular referred to as ‘research’ can, according to this framework, be identified as ‘*re*-search’ as it was not as systematic as the

research activities of the other participants and was more about reflecting on practice as part of CPD.

Reflective practice

When asked about the research engagement in his school, Mr Send said that ‘everyone in the school takes part in an action research project’ but rather than the more formal iterations of AR documented elsewhere (Coldwell et al., 2017), what Mr Send described was looking again (or ‘re-searching’) for the most appropriate pedagogical practices for individuals with complex needs. He said ‘in this school a lot of our action research is developing individual pupils so we do a lot of our action research around individuals’, which involves trying a strategy and reflecting upon how it has worked in practice. Fordham (2016, p.137) would call this the ‘professional development’ tradition of research engagement, which he critiqued as being too contextual.

Though specific to Mr Send’s context of a specialist secondary school, the outcomes of each individual project are shared amongst the rest of the staff, therefore are considered useful to others. Mr Send spoke with enthusiasm that ‘only this morning we’ve been looking at action research projects that everyone’s done’. This dissemination is a regular occurrence at Mr Send’s school so ‘you pick things up from that all the time’, thus illuminating why ‘being critically reflective’ and ‘sharing experiences’ were rated as most important for other practitioners who completed the survey (see Table 13).

The idea of generating useful knowledge by reflecting upon one’s own practice and that of others was echoed by other interviewees. Referring to her Master’s course, Ms Academy said that reflecting upon classroom practice was so important because ‘I don’t think you ever reach perfection so critical evaluation must happen all the time’ and she saw academia as a facilitator of this reflection. Ms Academy told of how ‘my particular area of research was looking at... how people in a different subject were getting better results than they were in my subject and learning and observing lessons and talking to colleagues was a luxury really’. Higgins (2016, p.237) acknowledged that teachers rarely have the opportunity to learn from colleagues as they ‘spend most of their time in a state that is simultaneously crowded (with students and interactions) and isolated (deprived of opportunities to participate in genuine communities of practice)’.

Also in relation to HE, Ms Diploma, spoke of how on the PGDE course one is ‘continuously reflecting on your practice in terms of its impact on pupil progress’, thus combining reflections with quantitative data generated all the time by teachers. For Ms Scitt, ‘gathering data on results and progress [is] essential’ but she questioned ‘is that research?’. McDiarmid and Clevenger-Bright (2008) identified teachers using these data as a form of research, categorised here as *re*-search. What Ms Scitt did identify as research was the AR project she had done on her current ITE programme. This was interpretive in nature as she said ‘it’s just kind of nice to take a step back and have a look at this one... specific thing that you’ve implemented’, going on to say that ‘it makes me reflect on my own practice which is the best bit’.

Teachers clearly understand there to be a link between reflective practice and research for respondents often focused upon reflective practice, despite being asked specifically about research. For example, one survey respondent left the following comment in the free-text box at the end of the survey: ‘surely teachers are doing ""research"" [sic.] every day through trial and error of different teaching methods and approaches with classes. I know the way I teach one class is different to another and this is through reflection and noting that a different approach is needed. A good teacher reflects and adjusts accordingly’. This process of looking again or ‘*re*-searching’ one’s own practice rather than engaging in formal academic research was also echoed by Ms Scitt, who said that in teaching ‘you just keep constantly that ebb and flow of trial and error’.

Re-search as CPD

Mr Send felt that the research practices in his school are part of their CPD. The ‘*re*-search’ (as it is theorised in this thesis) of Mr Send’s school is ‘planned into our calendar’ as part of the allocated CPD time for staff where ‘if you’re doing action research in pairs or groups or you can go away and work on your action research project’. Professional development was certainly a recurring theme in this interview. With just being prompted by the ice-breaker ‘tell me about your role in education’, Mr Send spoke about the school ‘developing teachers’, elaborating that researching has ‘developed me personally as a teacher’.

Since funding for Master’s research ceased following academisation, the CPD for Ms Academy and her colleagues can be described as *re*-search. She said staff are now assigned to ‘teaching and learning groups’, with Ms Academy’s group focusing upon Kagan strategies.

She said that in those groups ‘we’re looking at how we can use them in our own teaching areas’ but it is not a case of engaging *with* academic work or even engaging the findings *from* research. In fact, Ms Academy was of the opinion that ‘those sessions aren’t necessarily driven by research’, although ‘they may have begun as a result of some research’. These CPD sessions involve re-search as they ‘get together and share ideas about Kagan strategies. We have to be observed teaching using Kagan strategies and then we have to be able to... evaluate the impact of using Kagan strategies in the classroom’. This evaluation was further described as being ‘put into teams of two and we’ll scrutinise each other’s work, evaluate, give... written feedback and oral feedback’. This process can be identified as ‘re-searching’ as it involves teachers reflecting upon their practice to share ideas as well as looking at each other’s teaching practice.

Like in Mr Send’s school, knowledge is being generated via the *re*-search of Ms Academy and colleagues and they ‘share across the groups’ what they have found. Ms Academy found this element of the CPD ‘really interesting because you don’t often get the opportunity to speak to colleagues in other subject areas and they’re quite productive because you learn things that other people do’. Similarly, Eberhardt and Heinz (2017, p.45) also found that it was the ‘professional conversations’ that the teaching participants found most useful about the AR they facilitated.

4.1.3 Engaging findings from research

As well as being critically reflective, as stipulated in the Teachers’ Standards (DfE, 2011), deploying (or engaging) the findings from research is encouraged in ITE (NCTL, 2017) and is also part of in-service teaching. This section begins by elaborating upon the re-search of participants, introduced above, to illustrate how the findings from this re-search are engaged in the classroom. Attention is then turned to student teachers’ use of existing research and restrictions of this research engagement when in schools on placement and when qualified.

Applying re-search

Before reflecting upon strategies employed in the classroom, Mr Send said the strategies are evidence based in the first place, though this evidence seemed to be generated by the school in the form of pupil data such as that available on individual education plans (IEPs) rather

than academic research. Mr Send explained how he had taken a risk with what he was teaching his pupils during the school's autism accreditation visit but it was not a 'gamble because we'd done the research', in what Coldwell et al. (2017, p.8) have called 'evidence-informed risk-taking'. Mr Send elaborated that with his TA they had 'found the research we could find, seeing the pitfalls, seeing the triggers, everything else, everyone's IEPs...'. By using existing data such as pupils' IEPs in their reflections, they were prepared for all eventualities. In this scenario, findings from re-search were used to enhance one's own practice.

Referring to the findings from *re*-search being used more widely, one survey respondent felt that only research that has been conducted with 'academic (or more properly scientific) rigour' should be used to inform teaching, not 'practitioner research [that] seems to be a matter of opinion'. They gave 'the 3 part lesson (starter/main/ plenary)' as an example of this, which they believed 'became conventional wisdom at 1 point and was implemented by ofsted [sic.]. I never saw any evidence from anywhere that this improved lessons. However if it was not done when being observed the lesson was graded as poor'. Reliance upon this kind of re-search 'makes teachers suspicious of it. Things get imposed on the profession from govt [sic.] and we never seem to see any proper evidence'. This teacher clearly did not see *re*-search as producing 'proper evidence' that should be used to inform the teaching of others.

Mr Send, however, was keen to stress that the re-search projects conducted in the school would be of interest to others and Mr Head also said that he had disseminated his *re*-search findings wider. In Mr Send's school, the intention was to disseminate findings from *re*-search verbally, believing that his colleagues could 'talk just as well as an educated or an academic'. Although the re-search being conducted in Mr Head's school was not necessarily to be published, he went on to say that he has published in a teaching magazine in the past, which Counsell et al. (2000) suggested is important, for student teachers to read in particular, as Ms Scitt testified to.

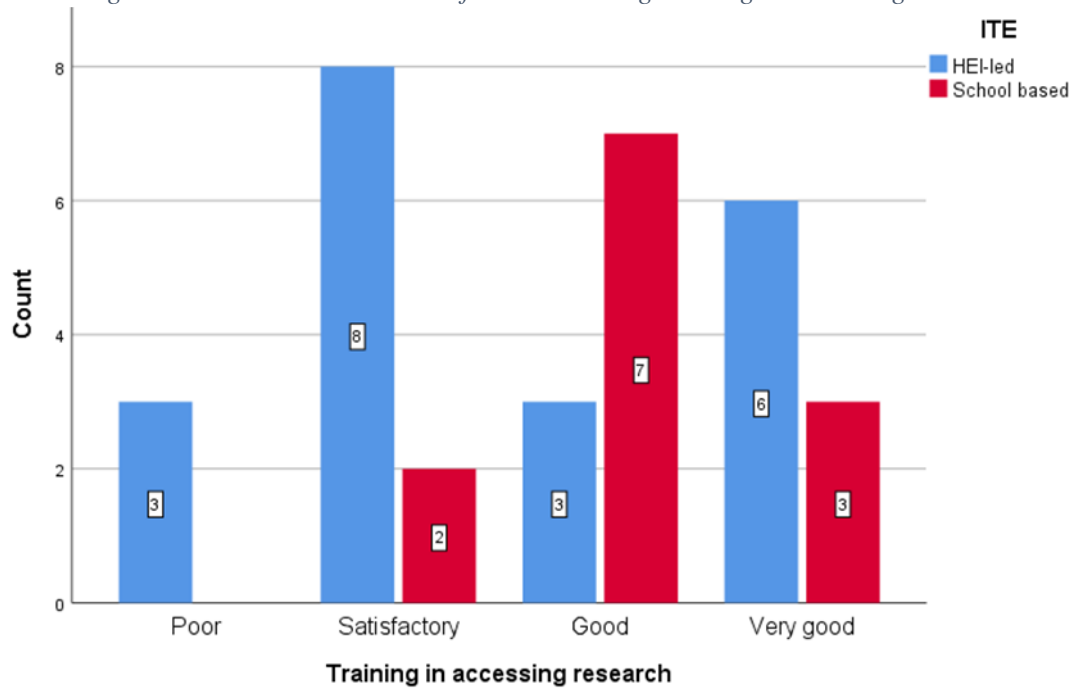
According to the Newly Qualified Teachers Survey (NCTL, 2017), the research-related focus for student teachers is upon understanding and applying findings from external research, not the re-search of teachers; there is evidence, however, to suggest that the latter is more prominent in school-led ITE programmes. When Ms Scitt was asked about her access to research that informs her teaching, she said she preferred information from online social and printed media. Although she also said that the SCITT programme is in partnership with a

local university so the students have access to the university's online library, she focused upon 'more practical stuff you find on TES and people share on Facebook', which may be described as 're-search'. Coldwell et al. (2017) found that 'recognising the value of quality evidence' was a weakness in evidence-informed teaching. Alternatively, it may be that Ms Scitt and other teachers value evidence from practice rather than research as it is easier to access, both physically and intellectually. Ovenden-Hope and la Velle (2015) have speculated that student teachers predominantly based in schools may have reduced physical access to research and less time to engage with the research that they do access, as opposed to 'a more developmental model of training, as found within research-informed undergraduate and postgraduate programmes, particularly in school-HEI partnerships' (McNamara, Murray and Phillips, 2017, p.1). Whilst Ms Scitt has online access to research, having her 'own timetable of lessons' may have meant that she had less time to transform this academic knowledge into her practice as opposed to HEI-led courses which take a more gradual approach to teaching.

Training in accessing and applying research

When asked to rate their training in how to access and apply findings from research, school-based student teachers were more positive than their counterparts undertaking HEI-led courses but qualitative data illuminate this conclusion from a different angle. What may be understood by new teachers as 'research' is the *re*-search of other teachers, which is, perhaps, more conducive to practical application as it is already close-to-practice (Wyse et al., 2018).

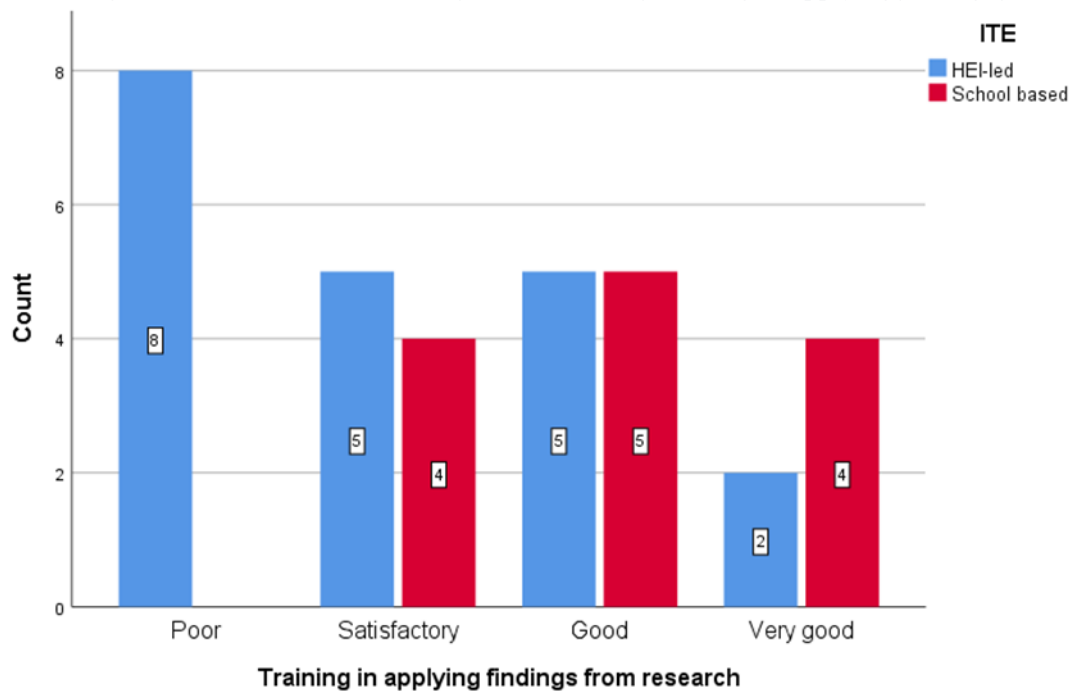
Figure 11: clustered bar chart of students rating training in accessing research



Although 30% of HEI-led students rated this element of their training as ‘very good’ compared with 25% of school-based students (n=12 as one did not answer this question), only 15% thought this was ‘good’ compared with 58% of their school-based counterparts, with the majority saying it was ‘satisfactory’ or even ‘poor’, which none of the school-based students indicated. However, this does not necessarily mean that their teaching is more evidence informed than their peers studying in a university setting as what different student teachers understand to be ‘accessing research’ varies. Hammersley-Fletcher et al. (2015) found that the teaching practitioners they surveyed generally reported high confidence in understanding research but later elaborated that this was from professional magazines etc., just like Ms Scitt had revealed.

It is debatable, therefore, as to whether students on school-led programmes are accessing academic research or *re*-search but what is clear is that they rate their training in applying this ‘research’ higher than those on HEI-led courses (Fig.12).

Figure 12: clustered bar chart of students rating training in applying findings from research



These survey data seem to show that more respondents on school-based routes into teaching (n=13) find their training in applying findings from research ‘very good’ (31% compared with 10% on HEI-based routes). None of the 13 school-based trainees rated this as ‘poor’, whilst 40% of the 20 HEI-based student teachers selected this option on the survey.

Respondents on HEI-led ITE programmes may have a more negative perception of their training in applying findings from research because they do not have the agency to translate theory into practice that their SCITT and SD counterparts have. Ms Diploma certainly thought that having her own reception class as an NQT will help allow her to engage findings from evidence as she believes that ‘as student it’s difficult to... signpost research because you have to be sensitive to your place within that [school]’. Hordern (2016b) noted that as professionals, teachers need access to a knowledge base but may not control or have the authority to apply this in practice, and this seems particularly pertinent to Ms Diploma’s experience as a student teacher. Ms Diploma expressed her frustration that she was actually required to implement strategies contrary to the research evidence she had found. For example, she was required to group children by ability despite having learned that ‘there’s no research to suggest it has a positive impact on pupil progress yet it’s just done because it’s the done thing’. For her research project, however, Ms Diploma was able to use

an approach that ‘*has* a significant positive impact on pupils’ communication skills with a *larger* positive effect on communication for socially disadvantaged pupils’ (emphasis detected in interview). Whilst Ms Diploma spoke about the academic research she had accessed, even if she did ‘skip to the results section (laughs)’, she was limited as to how she could engage the findings from this research.

Whilst it has been proposed that HEI-led ITE offers stronger foundations for evidence-informed teaching than their school-led equivalents (Coldwell et al., 2017), it seems that there is no guarantee that this evidence-informed teaching will be possible during student teachers’ practicum; whereas student teachers in school-led ITE have the autonomy in their own classroom. Ms Scitt felt that she had a more definite place within her school, using the first person pronoun when taking about ‘implementing [a strategy] into *my* classroom’ (emphasis added). Furthermore, Ms Scitt said she was ‘teaching on my own’, rather than taking on an established teacher’s class for a short period of time as in the PGDE, therefore she had the autonomy to implement strategies, though it can be inferred that these were from *re*-search rather than academic research, as already discussed. This contrasts with Ms Diploma, who cited academic studies about the use of support staff that she had read but could not implement in a school resistant to evidence-informed practice. Ms Diploma spoke excitedly about the school where she had secured a job for her NQT year, saying that they ‘have an interest in research, that their practice is evidence based and that they’re willing to try new things’. This appealed to her as ‘all I want in my teaching career is that you have more of an open-minded approach’, which she did not encounter during her school placements on the PGDE.

School-led ITE in England has been identified as a threat to research-informed ITE (Beauchamp et al., 2013; Hordern, 2014) but descriptive statistics from the survey data suggest that respondents on these courses rate their training in research engagement more highly than those in HEIs (Table 14).

Table 14: mean scores of research engagement in ITE

ITE Programme	Mean score for ‘training in accessing research’	Mean score for ‘training in assessing research’	Mean score for ‘training in applying findings from research’
HEI-led	2.6	2.1	2.05
N	20	20	20
School-led	3.08	2.77	3
N	12	13	13

The mean score for each element of research engagement is higher for school-led ITE programmes compared with HEI-led equivalents. Though these data are based upon a small research population (20 university students and 13 school-based students), the NQT surveys distributed by the NCTL in 2015 and 2016 produced similar results of SCITT and SD students rating their training more positively in general. Although undergraduate student teachers were not captured in the survey issued as part of this doctorate, the NCTL (2016) indicates that teachers on this route are just as dissatisfied with their HEI-led courses as their peers on post-graduate courses run from universities. It is useful to know that in the NCTL (2016) survey, the ITE provider was the only variable by which significant differences in general preparedness were detected, which puts their dissatisfaction of research engagement training into perspective.

The average rating for training in assessing research (Table 14) was lower than training in accessing and applying research for both school-led and HEI-led cohorts, implying that some student teachers are accessing and applying research without feeling confident about assessing how robust this research is. The Royal Society and British Academy (2018) specified that students on all routes into teaching need more support in accessing and assessing research, which is an assertion supported by data from this doctoral study. Although training in accessing research was rated quite highly by students participating in school-led ITE, this could be due to a loose definition of ‘research’, as has already been discussed.

Engaging findings from research once qualified

In the free-text box of the survey question asking about barriers to research, Ms Diploma attributed the dearth of evidence-informed practice that she had witnessed in teaching to a divide between research and practice once teachers are qualified. She wrote ‘there lacks a link between research conducted for the purposes of bettering education and the educators that could implement it’. In the interview, she elaborated that there is an attitude of ‘what do they [researchers] know? I’m in the classroom doing it. I don’t need to read some journal article’. This sentiment was also present in the qualitative data of the survey, with one respondent stating ‘it is my strong opinion that the more academic the teach [sic.] becomes, the more detached they become from the classroom’. Ms Academy, however, realised when studying for her Master’s degree that ‘there was a whole wealth of information out there that could impact upon what I was doing in my classroom’. Whilst engaging findings from research may displace the tacit knowledge available to the teacher via their classroom experience, it can be inferred that knowledge from this *re*-search is not ‘dynamic, changing all the time’, as Ms Academy described academic research to be.

Ms Diploma pointed out that even for those teachers who do see the value of engaging findings from research, there is ‘a massive barrier actually because you don’t have the access’ to academic journals; those interviewees who did access research had initially done so via HE. Just as Ms Diploma was worried that being removed from HE may result in her practice eventually ‘operating on research that was current five years ago. Because that’s my knowledge base and it hasn’t grown’, Ms Academy was grateful for ‘how current some of the information was, which was extremely helpful’. Being enrolled in HE meant she ‘wasn’t relying on research from the 1950s or the 1960s’. When asked about her research access, Ms Academy said that during her Master’s she was able to search for academic papers ‘electronically. I can’t access the [University] one anymore because I’m not a student there anymore, sadly. But it would tend to be via Scholar, Google Scholar’. Mr Head was able to access academic papers as an external assessor for a university in mainland England and he made the distinction between these research outputs and more accessible information about education. He said ‘articles in magazines are fine but it doesn’t have that depth. It gives you a feel for what other schools are doing’ and this perception of *re*-search rather than academic research was also identified in a small number of schools in Coldwell et al.’s (2017) study.

Hammersley-Fletcher et al. (2015) discovered an association between job role and research access, with 96% of senior leaders reporting that they had accessed education research in the last year but this precludes class teachers from engaging findings from research. When asked how Mr Head's teachers access research, he replied that he finds papers for his staff. Ms Diploma thought that senior leaders should 'disseminate research... more regularly with teachers' so their practice can be informed by recent evidence. The head teacher acting as an intermediary for access to research was also found in research-engaged schools by Coldwell et al. (2017) but this common practice in research engagement is limited to the agenda of senior leaders rather than class teachers.

For those not able to access research via HE, membership of professional bodies may aid the access to, and use of, research. When asked how she would access research beyond her ITE, Ms Diploma was aware that she will have 'a little bit of access to research' through the CCT. According to the DfE (March 2016, p.10), a benefit of teachers joining the CCT is 'keeping pace with new research' and this was clearly welcomed by Ms Diploma.

There is another layer of accessibility, though, before evidence from research can be engaged and this was summed up by Ms Diploma as 'accessible in terms of heavy reading', which is where evidence syntheses may help. Speaking of the EEF, Ms Diploma believed that this online website 'couldn't disseminate research more easily and accessibly' but she did not witness the use of this facility in her teaching practice. If a student teacher on a school-led ITE programme is placed in a school like this, they might not see the value of research-informed practice that a student teacher in a university environment might have; though, as mentioned above, the agency to apply findings from research is perhaps more influential for student teachers.

Mr Head saw the value of engaging findings from research and thought it was important for the parents and guardians of the pupils to know that what the school was implementing had an evidence base. A booklet, shared during the interview, lists the evidence-based strategies used at the school as: 'developing a growth mindset (Carol Dweck)', 'Six Thinking Hats (Edward De Bono)' and 'Visual Maps for Learning (David Hyerle)'. Procter (2015, p.472) found that 'teachers do not talk to parents about research but also see little value in doing so' but this was not the case in Mr Head's school as the booklet of the school's pedagogy is cross-referenced with the research behind the school's choices. In England, it may be more of imperative to be transparent about the evidence behind school

decisions, as Coldwell et al. (2017) found in their evaluation of evidence-informed teaching, where some senior leaders used research to justify PP expenditure in what Cain (2015) would call a strategic use of research.

Whether engaging findings from *re*-search or academic research, Ms Scitt noted that there are ‘so many, so many variables’ in a classroom, that implementing findings from education research without critiquing is neither viable, nor desirable for a professional. She sardonically remarked that teachers passively implementing research-informed strategies is a case of ‘this is what I’m telling you...’, rather than engaging *with* research critically, which is the focus of the next section.

4.1.4 Engaging with research

For some teachers, before implementing strategies informed by findings there was an additional stage of engaging *with* research, or not as the case may be. Academic courses were seen by some as facilitating this critique of research, though academia could also be seen as unnecessary if the research that teachers were engaging with had been produced within the profession. Different ways of engaging with research are explored in this section, which ends with how student teachers perceive their training in this element of research engagement.

Engaging with re-search rather than academic research

Out of the six interviewees, it was only Mr Send who had not been involved in Master’s level study and was dismissive of the role academia could play in helping teachers to engage with research. Mr Send explained that they have had ‘external... speakers’ from a local university deliver CPD sessions ‘about different things to do with education’ but his school’s focus was upon ‘what we’ve learnt through the research’ (or *re*-search) of practitioners at the school. With all teaching practitioners involved in generating this new knowledge, ‘what they’ve done has been vast’ and CPD is personalised to their unique context. He also pointed out that academic input from HE is not readily available, whereas knowledge is always being generated in their school so can be drawn upon more easily than engaging with academic research: ‘even if we don’t have external providers sometimes, someone’s always on hand who knows and someone will have done, through their action research’. It is not necessarily to engage the findings from this *re*-search but is about ‘learning from people’s research’

conducted on site. This preference of engaging with teacher re-search as opposed to academic research contrasts to what Brown and Zhang (2017) found in their study of teachers dismissing the research done in TSs.

Research literacy via HE

Conversely, Ms Academy placed greater value on engaging with external research that she has been able to assess the validity of due to her Master's education. She said that since engaging with research as part of her Master's, she is able to cite 'valid research that backs up what you're trying to say. Rather than just saying I'm an expert coz I'm not'. Improving the research literacy of teachers via Master's programmes or short university courses was what Godfrey and Brown (2018) suggested school leaders could do.

Whilst it has been found that teachers who had studied for a higher academic qualification reported more confidence in judging the quality of research (Coldwell et al., 2017), it would appear that these teachers do not always employ a high level of criticality when engaging with research in practice. For example, Mr Head, who had a Master's degree, equated quality research to outputs in prestigious journals and by familiar academics. Senior leaders having 'direct access to research producers' was what Coldwell et al. (2017, p.7) identified in the most research-engaged schools so this is not unusual. Mr Head said 'I tend to use SAGE journals and there tends to be a link with people I know' and whilst this can be seen as filtering research evidence, there is arguably no criticality in assessing the quality of research in this way. As Williams and Coles (2007, p.203) found, teachers are 'generally less confident in evaluating and using research information' and Coldwell et al. (2017) found that teachers rely upon senior leaders to assess the quality of research but there is little evidence that senior leaders have the skills to do this.

Mr Head was certainly confident in talking about how he had critiqued findings from research but this seemed to be based upon personal opinion and pilots of evidence-informed initiatives. He explained that he 'looked at Forest Schools but did not go down that route in the end' and 'a teacher in another school is piloting an initiative and will feed back the results' for the head to see if it should be implemented in his school. He already thinks it will not be right for the school, though, as it is incommensurate with their principles of not being prescriptive. He did say it is not completely up to him, though, and they will make a decision as a whole staff after hearing the presentation, which will consist of reflections on the pilot.

Kushner et al. (2001, p.54) proposed that ‘more research in a school would lead to a more questioning staff and that this, in itself, implies different forms of management in a school’, which Mr Head appeared to be employing. Whilst staff discussing an evidence-informed initiative could be considered as assessing research, there is no direct engagement with original research, just the secondary *re*-search of the pilot.

Engaging with research via discussions

Discussing evidence from research, though, can be a valuable way of engaging with research in a meaningful way. Procter (2015) concluded that by giving teachers the time and space to engage critically with research evidence they would be able to change their practice according to the evidence. For Ms Academy, it was not only the research literacy that she found valuable in the Master’s course that she did, but also the collegiality of being able to discuss educational matters with teachers from other schools. Reflecting upon the collegial element, ‘where we met with colleagues from other schools and we exchanged information about the research they were doing’, Ms Academy said, ‘I found that really, almost as valuable as anything else, you know. Being able to talk to colleagues who are likeminded’. Writing of student teachers, Orchard and Winch (2015) noted the benefit of being able to retreat to a university setting to discuss matters of education, physically away from the school context where they are in a teaching rather than learner role. As an in-service teacher, Ms Academy appears to have benefited from a university course in a similar way, as she ‘had not done anything like that for a long, long time and it rekindled my love of learning’. However, participation in HE is not necessarily needed for discussions on ‘what works, what doesn’t work - research wise’, as Ms Diploma pointed out. She proposed that these conversations could be part of the INSET time that teachers have for their CPD, where they could ‘look at different approaches’ to issues that research presents.

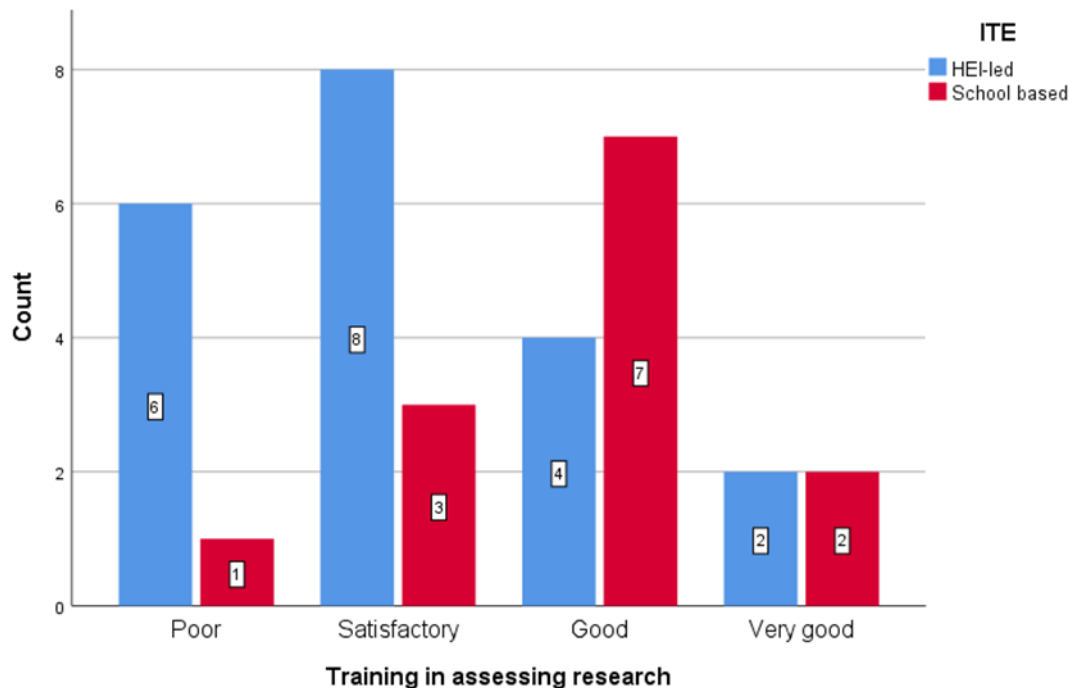
For Ms Diploma, critiquing the research that may inform teaching approaches meant selecting findings from the EEF that had ‘a moderate or positive impact’ on pupil attainment, whereas Ms Scitt was more critical of research in terms of contextual factors (Simons, 2003). Ms Scitt told of how she is very critical of where research has taken place and with whom and laughed that one should ‘critique everything!’. She said ‘you have to think about it and you have to apply your own situation to it as well’, which involves questioning research in

terms of ‘what kind of demographic were these people working with? What demographic am I working with? And how does this come across and translate?’. This may be because on a school-led ITE course, student teachers are embedded within the context in which they are teaching for the majority of a school year, as opposed to students on HEI-led courses who are closer to academic research but perhaps not as connected with the school environment. Rather than discussing research with colleagues, Ms Scitt referred to an internal dialogic, though as mentioned earlier the research she was engaging with may be identified as research.

Student teachers

Survey data reveal an interesting difference between student teachers on school-led ITE courses and HEI-led courses in terms of their training in assessing the robustness of research findings (Fig. 13). Whilst Procter (2015) concluded that student teachers on school-led ITE routes such as SD and Teach First would not be enabled to engage with research as there is less contact with research-engaged academics, survey respondents on school-led courses were more positive about their training in assessing findings from research.

Figure 13: clustered bar chart of students rating training in assessing research



Being able to understand research to assess its quality and relevance has been found to be a barrier in the literature (Brown et al., 2018) another constraint is not having the time to do this. A middle leader suggested in their survey comment that ‘time is needed within the timeline to allow teachers to understand and engage with education research and their [sic.] be able to embed evidence based practice in their teaching’. The capacity for research engagement and the capability of the teaching profession to be research engaged are both factors that feature heavily in the final section of this chapter – engaging in research.

4.1.5 Engaging in research

By way of introduction, this subsection starts with a summary of how the interviewees conducted their own research. There is then an exploration of factors that can both enable and constrain engagement in research: academia, school culture and the personal circumstances of individual teachers. The subsection ends with the potential of engaging in research for teaching and learning and for teachers in their professional and personal lives.

Approaches to research

The approaches that interviewees used in their research varied from re-searching practice to different forms of AR and case study investigation. Mr Independent described his doctoral research as ‘a case study’ and Mr Head also said that his current research was based around case studies but he had also done AR as part of his Master’s course. Ms Academy also talked about the AR she had done for her Master’s degree. Ms Scitt and Ms Diploma identified what they were required to do for their respective courses as AR, though they each had different perceptions of what research could entail, which is worth digressing into first.

Ms Scitt reductively described what she did as ‘just action research’ that ‘wasn’t so much scientific research’ as it involved implementing a strategy with a class then ‘writing up what the result was and then going back and doing it again with different groups’. Ms Scitt reflected that engaging in research was understood differently according to the subject specialisms of her peers in the secondary school. Some of the SCITT students ‘struggled to conceptualise that you weren’t doing... (laughs) control group... and test group (laughs)’. She then speculated that the reason for her colleagues associating research with controlled trials was due to their backgrounds in science and psychology. Simons et al. (2003) found

that for some teachers in the School-based Research Consortia Initiative, mainly from the natural sciences and mathematics, experimental or quasi-experimental designs were considered as the only way to conduct research and some expressed concerns that their research would not be considered robust enough if quantitative data were not produced. Interestingly, Ms Diploma was a psychology graduate and had a similar understanding of research to Ms Scitt's colleagues.

Ms Diploma's research project consisted of implementing an intervention over six weeks and comparing the results from 'pre-intervention and post-intervention assessments' to determine progress. Ms Diploma was aware that the children in her study were 'involved in a lot of different interventions' as well as hers and she explained that whilst she 'could have controlled for the variables', it was 'such a small-scale study' that she had to do alongside her teaching placement that this was not feasible. Mr Send's 'action research', as he described it, was not as systematic as the AR detailed by these student teachers so, as has already been discussed, this is conceptualised here as re-research.

University involvement

As Mr Send was the only interviewee who had not engaged in systematic research and was also anomalous in that he had no connection with HE, it could be surmised that HE is a facilitator of teacher research and the survey data also support this assertion. Out of the 14 survey respondents who disclosed that they were facilitated in research by HE, none said that knowing how to conduct research would be a definite barrier, suggesting that HE can be an enabler of more formal research.

Mr Independent noted that research methodology can be perceived as onerous but explained how he thought that academia would help other teachers in his school to conduct research. He identified that 'one of the things that teachers find quite a bit of a challenge is learning those research tools in the first place'. Mr Send also referred to their research skills as 'tools', as did a participant in Taysum's (2016, p.292) study of education practitioners conducting doctoral research. Mr Independent told of how he was encouraging his colleagues to conduct their own research but they were too eager to create new knowledge before they could 'understand the protocols for getting that knowledge in the first place'. The implication here is that teachers find it difficult to progress onto the final stage of research engagement in

the theoretical framework adapted from Carr and Kemmis (1986) – producing new knowledge through research – and that HE might help.

Although Mr Independent thought that HE could facilitate teacher research, it can be more of a barrier than an enabler because ‘you have to go about things the right way and that then becomes quite a formal and long-winded process’. An initiative of Mr Independent’s was that ‘I thought I was going to get a small research project up and running about 12 months ago’, sponsored by the school ‘to cover the costs’ of HE input but his colleagues who were initially interested found the research protocols ‘much more of a barrier than they were expecting’. Mr Independent explained that ‘two of our members of staff went to London to be talked to... for the day’ but this ‘didn’t work terribly well as the two members of staff who went down came back even more puzzled than they left’. A reason for this was ‘one of the lecturers saying, “right, well if you want to do a research project, these are the stages that you need to go through,” you know, things like ethics’. Most survey respondents thought that procedural hurdles, with ‘ethics’ given as an example, ‘could be a barrier’ to research.

Ethical approval is, of course, necessary for the conduct of any research involving living subjects (Nolen and Putten, 2007) and affiliation with a university could provide this but this might not be sufficient in some schools. Ms Diploma mentioned that ‘schools are really heavy on safeguarding, obviously’, so gaining ethical approval as part of a Master’s degree would help ‘massively’, for example to justify the recording of children. Despite being supported by a university, Mr Independent’s colleagues could not start this research project because the sponsors funding it decided that the ‘research protocols weren’t thorough enough’. Whilst some teachers might benefit from research facilitation from HE, being enabled to engage in research also depends upon support from the school or, in Mr Independent’s case, benefactors of the school.

When the sponsors of Mr Independent’s school declined to fund the research project he had proposed, he tried to start ‘a small in-house one’ as this did not have to be as stringent but his colleagues were still daunted by the process of engaging in research, perhaps because of the involvement of academics. Two lecturers from a local university who were ‘very interested in supporting teacher research in schools’ visited the school to facilitate ‘six people looking to do a research project around boys’ reading’. However, ‘each of [the teachers] said, “OH my God! I didn’t, that was so difficult. I just didn’t realise that it was going to be that intense”’ even though Mr Independent had ‘sat in on the conversations and the conversations

seemed absolutely fine to me', perhaps because he already has a Master's degree so was aware of what research involves. He concluded that 'those that work in Higher Education all the time forget what it's like for classroom teachers' so whilst academics could help teachers with research methodology, they need to understand what is possible for busy teachers.

As well as introducing research methodology to teachers, HE could also facilitate teacher research via collaboration, though this could also be identified as exploitation. Mr Head maintained that 'I am doing research', though what he was describing sounded like being a participating case study school in an academic's research project. When this interpretation was proposed to Mr Head in the interview, he argued that the academic 'would say it's equal partnership' but when asked if he will be a named author in the publication, he was not sure and said that it probably 'depended how much I contribute'. He added that 'it's a bit difficult when you've got people from university asking me to do certain stuff', implying that he did not feel that he could challenge the uncertainty of whether or not he was to be a named author. Issues regarding ownership of research were also raised by Simons et al. (2003) in their report on the TTA's School Based Research Consortia Initiative in the 1990s, though the scheme was praised for fostering collaboration, unlike the project that Mr Head is involved with, which seems exploitative with a veneer of collaboration.

Before this 'collaborative' research with an academic, Mr Head had embarked upon Master's research, which was the start of his interest in research engagement, as it was also for Ms Academy. Enquiring as to whether she has continued the research practices she started with the help of academia, Ms Academy replied, 'I'm more interested now than I was previously because I can see the value of it'. She added that 'even though there's no end product or qualification or accreditation, I think once you get involved in research then it whets your appetite'. A motivation for Mr Head to complete a full Master's was that he already had 'credits towards a Master's degree' through the NPQH (National Professional Qualification for Headship). From this, it can be inferred that introducing teaching practitioners to Master's level research gradually could be both a motivation and an enabler of research engagement, rather than attempting a full Master's degree at any one time. Camaraderie can also be seen as a motivating factor as Mr Head explained that the 'three of us who did our NPQH together decided to do our Master's degree together too'.

Although seen as an enabler for further research, Ms Academy did raise the concern that Master's level research can be time consuming. Regarding the completion of her own

Master's research, she said that 'time was a massive barrier' with 'teaching full time as I was then and my colleagues were, it was very demanding in terms of the assignments and the deadlines'. Similarly, when talking about time as a barrier, Mr Send brought up researching for a formal qualification such as a Master's degree, saying 'doing it externally for someone, having to do it for a qualification, yes, time might be a barrier'. In his school, however, this is not a problem as 'no one is expecting 50 pages', which was a trope repeated by Mr Send to describe how onerous more formal academic research is. A comment left on the survey was also disparaging of 'formal research which would just be a huge burden on teachers already limited time'. The re-search conducted and disseminated within Mr Send's school, however, was deemed by him to be more manageable. The school in which the teacher-researcher is working plays a major part in facilitating teachers to engage in their own research so attention is now turned to school culture as encompassing enabling or constraining factors.

School culture

The influence of the culture of a school was articulated by a survey respondent, who stated 'at our school, staff our [sic.] empowered and encouraged to perform active classroom-based research to inform their practice' so what follows are examples of how schools make engaging in research part of their school culture. However, the same respondent also indicated knowledge of methodology, procedural 'hurdles' and time as a 'definite barrier' so even if research is a school priority, there can still be practical barriers. With regards to the different research practices listed in the survey, one respondent left a comment saying that 'some of them seem impractical in terms of lack of time and money available' but this is not the case for all participants. Unsurprisingly, time to conduct research was perceived by most (83.33%) survey respondents as 'a definite barrier' so will be focused upon next, followed by funding available in some schools where research is valued. In some schools, engaging in research is an expectation so the contentious issue of accountability will also be dealt with, along with the support systems that this requires. Attention is then turned to those ultimately responsible for enabling teacher research to become part of a school's culture – school leaders.

Time: Interestingly, there were 12 missing survey responses for the question pertaining to time as a barrier, perhaps to make a statement that this is so obvious that it goes without

saying, as in Menter and Hulme (2010, p.113), who found that ‘time was cited as the main barrier to progress by all participants’. Qualitative data support this hypothesis as one respondent stressed that ‘I feel TIME is the most obvious barrier to teacher research’ (capitals in original) and in the interview with Ms Diploma, she emphasised that time is ‘a huge barrier, of course’. Furthermore, the assertion that 12 individuals deliberately avoided answering the question about time is plausible because omitting an answer was not a common occurrence elsewhere in the survey and only one respondent did not answer Questions 12c and 12e, pertaining to other potential barriers (‘permission from senior leadership’ and ‘procedural hurdles such as ethical approval’ respectively). There is, however, the possibility that this question was mis-read as one respondent who indicated that time was ‘not a problem’ also left the comment ‘time to conduct research’ when asked if there were any other barriers.

It seems that some teachers felt that they do not have time to be part of any research - their own or that of others. A respondent who had selected time as ‘a definite barrier’ emphatically added ‘Time, Time, Time, Time!!!!’ in the free-comment box. This individual left their email address for a follow-up interview and it would have been interesting to ask him to elaborate more upon this issue that he appeared to feel so strongly about. He did not, however, reply to the emails enquiring about a suitable time to conduct the semi-structured interview – perhaps due to lack of time. An insightful comment was left by another survey respondent, who stated that ‘time is a massive factor. The only reason I’ve completed this today is because my classes are out on an end of year trip. Otherwise, I wouldn’t normally even read this sort of document’.

The idea that engaging in research is not part of the culture of teaching for many in the profession was evident elsewhere. One survey respondent who left a comment after the question on barriers to research linked time with ‘the ‘day’ job takes up so much time’. This was also touched upon by Ms Scitt, who mentioned time as a barrier before this topic was even brought up. She proposed that maybe a reduced timetable would enable research but then changed her opinion on this idea as she believes ‘if I was teaching fewer lessons that time would be spent... marking and... planning’. She then laughed that ‘there’s not enough time for that and that’s my job’, which is similar to the survey respondent’s perception of the ‘day’ job being time consuming.

One solution to this barrier would be for research to be part of the culture of teaching and not ‘another thing to do for which their [sic.] is no time’ as one survey respondent said. Similarly, Mr Independent, suggested that ‘if the senior leadership could ring fence some time, that would help teachers’. Coldwell et al. (2017) found that highly research-engaged schools timetabled research-related activities into teachers’ directed working hours. This is what happened in Mr Send’s school as when he was asked about time being a barrier in the interview (as he was one of the 12 survey respondents who did not leave an answer to this question), he said ‘it can’t be a barrier because we’ve all done action research projects so we’re given time in this school’. Hall (2014) recommended that for teachers to engage in research, in his case via LS, it should be part of a school’s calendar of PD and not an added burden.

Hall (2014) identified the months of May and June as periods when LS as a form of research engagement was not possible due to examinations and Mr Independent had also found this from his endeavours to encourage colleagues to engage in research. Mr Independent concluded that ‘the teaching year is very seasonal’ so ‘you have to time it with teaching... Go with the... natural cycle of... the annual programme’. By this, he meant that there are certain times of the academic year that when ‘there’s a little bit more head room’, such as ‘in a secondary school once the exam groups have left’. He, therefore, proposed to ‘get the plan together during the autumn term. Then forget about it during the spring term and then actually... to get all the research together... during the summer term’. Passy et al. (2018) advised that in research within school-university partnerships, both school and university partners need to be understanding and flexible when there are pressure points in the year when the research is paused.

Funding: Just as Mr Send’s school made time for research, some schools promoted research as part of their school culture by allocating funding for academic research. Ms Scitt’s school started to fund Master’s degrees because ‘colleagues who did the SCITT in previous years weren’t offered a PGCE so they’re being offered to do a Master’s degree’. This offer is now open to anyone who does not already have a Master’s and Ms Scitt said she would take advantage of this funding ‘if I didn’t already have two Master’s degrees’, one in her subject specialism and one in teaching from her country of origin.

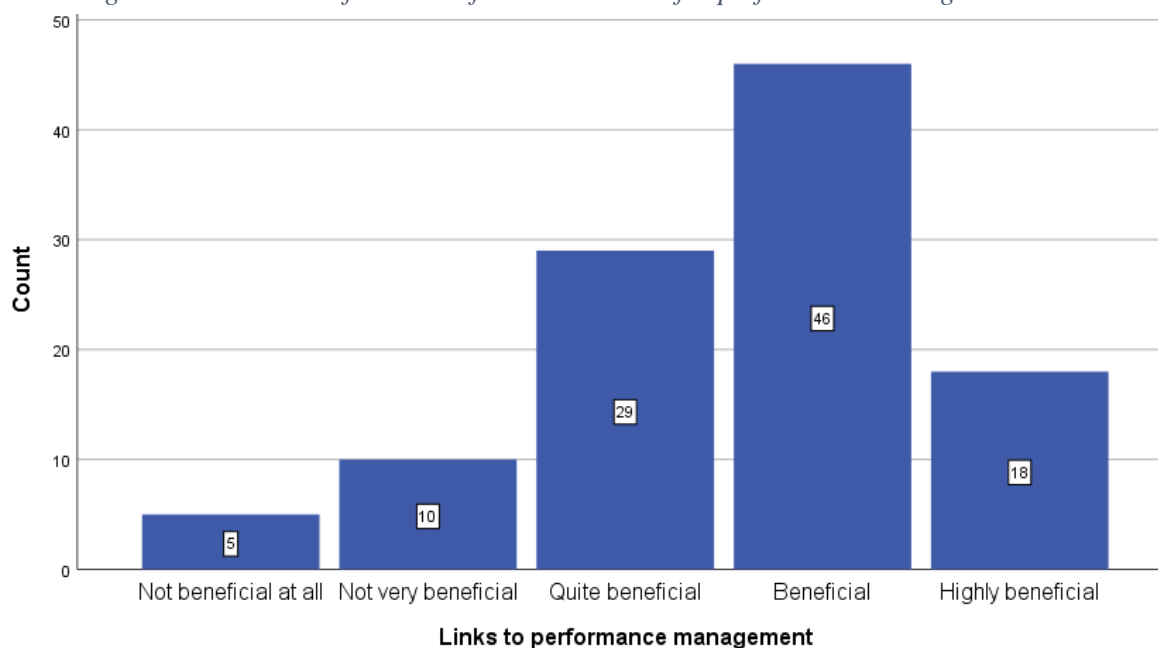
Ms Academy explained that before becoming an academy, research was valued in her school and invested in as part of teachers' PD. She said 'funding was made available' for a Master's degree because 'the governors agreed that this would be a great benefit to the student community as a whole if their teachers were engaged in active research projects'. Procter (2015, p.469) found that 'teachers rarely receive funds to carry out research but equally they do not regard this as important' but Ms Academy thought 'it was just too good an opportunity to miss' and felt 'incredibly lucky to have that financial backing', particularly as now 'people are going to have to fund it themselves'. Ms Academy believed that senior leaders have 'got to be prepared to invest time in it and money and... in the current climate I don't think that's likely to happen... and that's... a great shame because it's a loss to the staff but it's a loss to the students too'. She elaborated upon 'financial constraints' and 'such pressure on schools now', exemplifying this with changes to exam specifications in England so that 'research is not going to take a prominent seat'. According to Murray (2016), academic research through Master's study is no longer encouraged in England, although Coldwell et al. (2017) recommended to the DfE that senior leaders and class teachers should be encouraged to make use of post-graduate loans. This, however, puts the onus on the individual to invest in Master's research, as opposed to Ms Academy's experience of being 'funded by the school, which made it much more accessible for people. It took the financial burden away'. As has already been mentioned, Mr Independent's school 'gave me £600 for each of the first two years' of both his Master's degree and PhD. Offering bursaries for research projects was also found in two of the research-engaged schools in Coldwell et al.'s (2017) the study.

As well as funding for HE to facilitate engagement in research, Ms Diploma thought that funding should be focused upon 'investing in something like SPSS [Statistical Package for the Social Sciences] or something like that that actually allows you to measure impact, to look at the significance of something'. Without an 'annual research budget' that other organisations might have, Ms Diploma told of how 'I've bought my own assessment tools', which she felt were needed 'to measure the impact that that intervention has on pupil progress' in an objective way. Using the PP to research interventions was proposed by Ms Diploma, who perceived that head teachers are 'not necessarily researching the impact of the intervention because... that's not necessarily having a direct positive impact on that child's progress'. In Ms Diploma's opinion, however, evaluating the impact of interventions 'could

have a positive impact on the future progress of Pupil Premium pupils' (emphasis in original) so is worth being invested in.

Accountability: Engaging in research can be a way of teachers being held to account for their decisions, which was welcomed by Ms Diploma. It was her understanding that the head teacher 'doesn't need to provide evidence' for why they have used the PP funding in the way they have, which she thought led to the use of interventions that appear to have 'face value but you can see these things make sense but no evidence base'. If these interventions were evaluated by teachers, however, there would be an evidence base to justify why interventions were being invested in. Aspfors and Eklund (2017) found that student teachers in Finland were able to use their research to explain their decisions to pupils and parents but that this was because a research approach is integrated into the daily work of a teacher, not to hold them to account but for meaningful teaching. Ms Diploma felt that engaging in research was 'good in terms of your accountability for pupil progress' and wanted to continue researching in her NQT year. She spoke of the 'nature of the research that I ran, I would do again. Because it's simple. It's pre- and post-intervention and you just look at the impact. And at least then when you're in your performance meetings you can say well they have made progress and this intervention was significant in that progress and this was the starting point'. As Fig. 14 demonstrates, most survey respondents felt that research was more beneficial than not in linking to their performance management.

Figure 14: bar chart of how beneficial research is for performance management



Cochran-Smith and Lytle (2009, p.149) argued against ‘practitioners engaged in inquiry simply for accountability’s sake’ but this does not seem to be a common practice as Coldwell et al. (2017) reported that teachers felt they had less time to research due to external accountability requirements rather than research being part of this process.

Engaging in research for accountability reasons was what Ms Diploma said she would do of her own volition but there are examples of internal accountability requirements involving teacher research. Ms Academy explained that ‘one of my performance... management targets, was to complete the dissertation then the following year it was to disseminate the information and the outcomes of that dissertation within the department and ultimately to the staff as a whole’ but this was only because she had opted into the Master’s programme taught at her school so was not compulsory. Ms Scitt laughed that an enabler of teacher research would be ‘making it a requirement then you have to do it’ but making research mandatory was actually a real practice mentioned by other participants. Although Mr Send said ‘I don’t need to be forced to do a Master’s to make me want to develop the individuals with research’, it was compulsory for all classroom staff at his school to partake in their research practices. Mr Head explained that as part of the performance management of teachers in his school, they ‘go off and investigate’, as he put it. McLaughlin (2010, p.171) anticipated that there would be debate around ‘engagement in inquiry for professional transformation versus investigation as a vehicle for compliance’ and the latter had been

previously warned against by Kincheloe (1991). Research being part of performance management has also been reported in Coldwell et al.'s (2017) seminal study. This is, however, described as developmental, focusing upon practice rather than pupil performance data and they concluded that developing enquiry as part of a school's culture was more important than enquiry being part of formal requirements. What follows are examples of how research may be part of a school's culture and the support mechanisms that are available, or not as the case may be.

Support: Research being part of a school's culture may mean that a Master's degree is invested in and/ or teacher enquiries feature in performance management but support from the school also plays a major part. Before academisation, Ms Academy and her colleagues 'were encouraged to... pursue a Master's degree and over 20 of us signed up for it'; therefore, they had the support of the school, who had paid the tuition fees so there was a vested interest in enabling them to research. Ms Diploma mentioned that she would have to invest her own time and money into Master's research and would 'need to know that you will be supported' in school before dedicating these valuable resources to research.

Ms Academy knew that her research endeavours were supported in her school as the school had liaised with the university to deliver much of the Master's programme on site, which was appreciated by Ms Academy. She stressed the importance of convenience rather than the academic expertise she was receiving from the programme, elaborated that 'after you've been teaching all day it... made a big difference to know that you didn't then have to get in your car and drive across [the city]'. Research engagement being integrated into the school was, as Gu et al. (2015) found, an enabler as without this, the process of learning about Master's research might not have been manageable.

Similar to the Master's programme of Ms Academy, the PGDE that Ms Diploma had just completed was 'so research focused' but unlike Ms Academy, she encountered barriers to the research she was required to carry out whilst on placement in schools because of lack of support. Ms Diploma explained that 'part of your training as a PGDE student is that you are research engaged', which features heavily in the 'additional Master's modules' that elevate the qualification to a diploma as opposed to a certificate. However, she revealed that 'I wouldn't say that the emphasis I've had on research is reflected across the school. Definitely not. No no'. Unsolicited by any questions aimed at support for research during her

placements, Ms Diploma divulged that even from her school-based mentor ‘there wasn’t a great deal of support for the research side of this [*shakes head*]’. The pre- and post- tests that Ms Diploma decided to conduct were, in her opinion, an easy mechanism in principle but they meant that the class teacher would have to teach the rest of the class while Ms Diploma implemented the intervention being tested and issued standardised assessments. This process was not supported and although ‘they did not not allow me to do it. They didn’t facilitate it either’. As McLaughlin (2010, p.161) found, ‘activities related to research place particular demands on collegial relationships’ and this seems to have been particularly acute here.

This lack of research emphasis in school placements is clearly not typical, though, as Ms Academy talked about how she facilitated research when she was a school-based mentor. Of the research that her student teachers on placement in the school were required to conduct, she said ‘we could see a way forwards in the direction their own research was taking’. She added that ‘they benefited from talking to each other about their research as well, which was really helpful’, implying that there are schools where research procedures are supported.

A collegial support network is helpful for engaging in research but this requires a positive working environment that is not always easy to establish and maintain. Having the culture of a failing school would, for Mr Head, inhibit the kind of research engagement that he is now involved in at this school. He noted how the school has had ‘stability in staff for a few years’ so they are at a ‘good point as a team and staff know each other’, which helps them in their research teams. What Mr Head described as research in his school was at first led from the top, with staff allocated teaching and learning responsibilities (TLRs) leading the research teams but now there is a class teacher who leads on one because she has a particular interest in that area. There is little interference from himself as the head teacher now and ‘we try to be democratic in the areas that we need to take a lead on in our research’.

It is not only support within a school that can enable research but also the wider system in which a school operates. For example, in a TSA or a Local Education Authority, as one survey respondent from an island location specified. As a teacher of tertiary college not bound by the education system in England, they had been involved in ‘initiatives for research across the LEA [*sic.*] working with teachers in primary and secondary education’, which would not be common in mainland England with LA capacity being reduced (Gunter and McGinity, 2014).

Leadership: It was not just practical support that was needed for teachers to conduct their own research, according to Ms Academy, who noted the imperative for senior leaders to ‘give it support and promote the value of it and show the staff what they can gain from it’. Ms Academy explained that the previous head teacher of the school before it was academised ‘was passionate about Continuous Professional Development and he believed and still to this day believes that if you want teachers to improve and move forwards, they have to be enriched themselves’. For him, ‘there was a definite link between research and Continual Professional Development’. Similarly, Mr Head, who had done a Master’s degree, believed that ‘we are quite a research-based school and that’s probably... stemmed from me’ but he was able to spearhead research in his school as the foundations of research engagement were already there in the school’s CPD and he just formalised it. Kushner et al. (2001, p.56) speculated that ‘research can only survive as a resource-based activity where it is included in the priorities of senior managers’ and this was certainly the case in the workplaces of Ms Academy (at first) and Mr Head, as well as those of Mr Send and Mr Independent.

McLaughlin (2010) found that senior leaders need to be committed to research engagement and this sentiment was shared by a survey respondent, who specified her role as ‘Nursery School Headteacher’, saying ‘I think whether a Senior Leadership Team makes it a priority to support teacher research is key’. The Royal Society and British Academy (2018) also noted the importance for senior leaders to provide their staff with time and motivation to engage *with* or *in* research. Mr Send emphasised that ‘we’re really committed towards teacher research and research in education through [name of deputy head] really’, going on to propose that there needs to be ‘a whole drive around’ research engagement for it to be embraced by the whole teaching profession. Just as the personalities of leaders can create research-engaged school culture (Godfrey, 2016), so too are personal traits of individuals important to make engaging in research a reality.

Personal circumstances

What has been explored so far has been the role of HE in enabling and constraining teacher research and how school culture may either foster or restrict research; additionally, the personal circumstances of the individuals engaged in research have been found to be influential so will be explored next. Mr Independent summarised these personal barriers to research: ‘the children needing to be taken to the park and... finding the money for a new car, the GCSE results not being good enough and needing to get them better this year... the rugby

team needs to be taken out on a Saturday morning'. These family, and other personal commitments, financial and professional priorities were also mentioned by Ms Academy and Mr Send. As these personal circumstances can be, severally, a barrier to or an enabler of research engagement, the two will be explored alongside each other, as above. What was alluded to as an enabler of engaging in research was an individual's affinity with academia, which will be explained before this subsection moves on to the potential outcomes of research engagement.

Personal commitments: If engaging in research is not part of teachers' directed time, it can encroach upon their personal time, which the interviewees explained is not always possible, particularly at certain career and life stages. Ms Academy remarked that now that the school is not supporting a Master's degree, 'there'll be no time allocation for [research] and that just makes it more difficult for people'. Mr Independent noted on the survey that 'there are a number of barriers to practitioner research, but the biggest by some margin is time, most particularly for younger teachers who may have a young family'. Echoing this almost exactly, Ms Academy thought it was 'not easy for those younger staff who've got young families and other commitments which I don't have'.

Age was seen as both an enabler and constraint by some interviewees who linked this to personal commitments. Mr Send explained that he had started a career in business before teaching and he identified this as a barrier to Master's research, saying 'it's something I would be interested in doing at the right time but being a little bit older than your traditional teacher who's just come through the system... that was the barrier'. Participating in Master's research, as a lot of his peers did following their teaching qualification, was not possible as his 'commitments sort of got in the way of that'. For Mr Send, youth was seen as an enabler because although he is 'actually interested in anything, it's just the logistics of it' with his family commitments.

As well as lack of time, Mr Send perceived personal finance to be a barrier of research 'if you want to do something formally', i.e. a Master's degree and Ms Academy and Ms Diploma also alluded to this. Although Ms Academy benefited from a funded Master's, she said that now 'I think people will be told that if they want to do a Master's or a PhD they have to fund it themselves'. Mr Send was aware that 'there was some grants for it [a Master's]' when he first qualified but he would now have to pay for it and sacrifice other

expenditure, which he is currently unable to do. Ms Diploma also expressed that ‘to have the money for a Master’s you’d have to actively put money aside and you’ve got your own, we’ve got family commitments and all the rest of it’.

There may be a link between the fiscal factors of engaging in research and the stage of one’s career. Mr Independent thought that a reason for his colleagues not being as interested in Master’s research is that ‘we’ve had a lot of young staff coming in. Perhaps in a few years’ time when they’re a little bit older, a little bit more settled, financially a little bit more secure. They will say, “right, I want to take the next step”’. Mr Independent linked his career stage to economic security, disclosing that ‘I’m at a stage in my career where I’ve sort of got or had got children at university. My outgoings are not what they were 20 years ago’ so ‘finding the extra funding was less of an issue for me than it was for someone who is younger’. Whereas it is more difficult ‘if you’ve got a young family and not a lot of money, you know, a full mortgage’. To alleviate this, ‘sometimes the head can be a bit more generous’ in partly funding the Master’s but this is not typical in other schools as funding was seen as a ‘definite barrier’ by 63.73% of survey respondents.

Academic affinity: So far, the enabling and constraining personal factors of time and money have been explored but even if these are plentiful, there needs to be desire by teachers to want to engage in research. A survey respondent commented that in their college, ‘research has generally been the result of lecturers doing it as part of an academic course which in the case of new staff is Cert Ed, or other staff where they have chosen to do an MA or PhD’. The interviewees who had chosen to engage in Master’s research had a personal interest in academia. Mr Independent exemplified this with the anecdote: ‘there were ten of us in a row... for the Master’s graduation, nine of whom were going, “thank God that’s over. I never want to look at another text book again.” And I was saying, “well actually, I’d like quite fancy doing a bit more.” So I think it really is down to an individual basis’. Menter and Hulme (2010) found links between perceptions of school enquiry and teachers’ perceived benefits and confidence in developing a research project. From this, it can be inferred that because Mr Independent perceived research to be interesting, he was able to take teacher enquiry further, even beyond Master’s research.

Other interviewees also expressed an interest in academia, which could be linked to their enthusiasm for engaging in research. Ms Scitt said she ‘loves academic stuff’, adding ‘I

actually want to do a PhD one day'. Ms Diploma also told of how 'for four years I've always been interested in research' during her undergraduate and post-graduate qualifications. She spoke with pride of how at the end of her Bachelor's degree 'I was actually published as a co-author' in what she described as 'major research'. Ms Academy's own personal interest in research can be seen to have enabled her commitment to the Master's programme. For example, when asked if she would like to add anything else at the end of the interview, Ms Academy said she was 'just interested in your research really' as she found research engagement in the teaching profession to be 'a hot topic'.

Dedication: This penchant for research can fuel teachers' dedication to the research process. Ms Academy explained that whilst the Master's course she did was supported by the school, 'we did it all in our own time and all the sessions from the university were conducted after school so three hours on a Monday night'. She described this as 'a huge commitment but the people who signed up for it did attend and clearly thought it was important'. This meant that 'as an individual you've got to make a priority... and you've got to say, well if I really am serious about this research then I've got to make the time'. Similarly, Mr Independent explained that 'because I quite like doing academic research... I will put it as something of a priority'. This is in contrast to a survey respondent who commented that teachers should 'leave that to academic researchers'.

Those teachers who do have an affinity with academic research try to enable this for others in their organisation. Mr Independent told of how 'I get on very well with... one of the professors' at a local university and used these contacts with HE as an enabler of research engagement. In this instance, however, 'people just dropped out', which was 'slightly embarrassing' and perhaps frustrating for Mr Independent, who said he had 'put a reasonable amount of work into that'. It was easier for Mr Head, who 'could see the benefits of... doing some action research within the school setting', as 'a deputy was very focused on action research' when he arrived as the new head teacher. Having someone else at the school who shared his vision of teacher research clearly helped.

Outcomes

Now that enablers of engaging in research have been established (academia, school culture and personal circumstances), attention is now turned to the potential of engaging in research.

The possible outcomes of teachers engaging in research broadly fall into three categories: teaching practice, learner outcomes and the impact upon individual teachers, either professionally or personally.

Teaching and learning: Campbell and Groundwater-Smith (2010) suggested that generating evidence to influence teaching practice may not be possible in the time allotted to student teachers but the two interviewees on ITE programmes had tried to do this, implying that they believed that engaging in research can impact on teaching practice even in a short space of time. On both ITE courses that Ms Scitt had embarked upon, she chose to focus her research efforts on strategies that could help the pupils in her context: first ‘focusing on the results of ESL’ (English as a second language) and now ‘dealing with students with quite low levels of literacy’ in her current context. Ms Diploma also chose to focus her research project on evaluating strategies to help the pupils she encountered on placement. She described her longer placement having ‘an above average number of Pupil Premium pupils, socially disadvantaged area of [the city] and then in my alternative placement... served an above average number of pupils with EAL also in a socially disadvantaged area of [the city]’. She therefore focused upon socio-economic disadvantage as she had read that this poses ‘massive barriers to their learning’. Rather than being just an academic exercise as part of the course, Ms Diploma believed that she was advancing the knowledge base as ‘there does need to be more research into initiatives specifically targeted at Pupil Premium pupils’. Even if this knowledge base just informs her own teaching, at least she believed that ‘it’s adding value in a sense that you have a better understanding of the impact of what you’re doing’.

Sharing of good practice via research was seen by the Royal Society and British Academy (2018), who reported that this would benefit students and Ms Academy believed that her research engagement must have had an impact upon her pupils, although she acknowledged that it would be difficult to prove this. Ms Academy said that she would like to think that the observations of colleagues that she did for her research has ‘affected positively [sic.] my students’ experiences within my subject area’. When Ms Academy was asked if she could exemplify this, though, she laughed that ‘that’s more difficult to do and to quantify, isn’t it?’. She explained how her lessons are more interactive now, using less ‘teacher talk’, the effect of which has been ‘quite dramatic in terms of the children responding very positively to that’. Kushner et al.’s (2001, p.43) research engagement programme one teacher

felt no need to measure impact, as was the case at TPS and for Ms Academy, as ‘she was confident that a change in the way that teachers relate to each other would itself have some impact on children’.

Most of the respondents in Hammersley-Fletcher et al.’s (2015, p.31) survey also indicated that ‘pupils had responded positively’ to what they had implemented from their research. Ms Academy concluded that ‘I couldn’t quantify it... in terms of what they’ve achieved but certainly the feedback and the oral feedback I have had from the children is very positive’. Duncalf et al. (2017, p.113) found that ‘school leaders were keen to enhance the performance of staff by supporting them in Master’s level study to enhance professional practice and impact on learning’ and concluded from questionnaires and interviews that these intended outcomes had been achieved, though could not be quantified.

Mr Send, however, felt that he could offer examples of learner outcomes from research engagement but considering the research that teachers conduct in Mr Send’s school involves *re*-researching strategies that could help individual pupils who have complex needs, it can be deduced that it is child-centred reflective practice that makes a difference rather than engaging *in* systematic research. When asked if he had any examples of how research had been ‘highly beneficial’ to outcomes for young people (as stated on the survey), Mr Send responded ‘[*enthusiastically*] Yeah, I can give you one straight away’. He talked about a TA who works with a student who ‘used to take a lot of movement breaks’ to manage her anxiety. The TA ‘researched ways around that, use stress balls things like that’ and now she does ‘not take any movement breaks at all during ICT and science lessons’. He linked this outcome with the fact that the TA, through getting to know the young person more, ‘is now a trusted adult for her’. What seems to have made the difference is the process of the TA re-researching the child, therefore developing a trusting relationship that has helped the anxiety of the student. He also told me about a pupil who was not engaged in learning but is ‘now in our sixth-form’. He attributed this positive learner outcome to research engagement, although it ‘mightn’t even gone on a piece of paper as research and development’ but he identified it as research because ‘someone’s gone and researched how to develop that individual’.

Process more than products: It is, perhaps, the *process* of researching that is beneficial, rather than the *products* of the research. For example, one survey respondent added ‘professional confidence’ in the free text box after Question 16 so the experience of

researching seemed to enhance their self-esteem. Mr Independent said that his research has ‘given me quite a bit of gravitas’ with staff. Another survey respondent pointed to the benefits of collaborative research for the school, not just individuals. They stated that ‘if a group of teachers carry out research together, [it] brings a buzz to the school’ which is similar to what Herrenkohl et al. (2010) found in their teacher-researcher collaboration and teachers in Coldwell et al.’s (2017, p.34) study commented that engaging in research ‘energised teachers’.

For Mr Independent, ‘the benefits far outweigh, certainly for me, the... hard work that goes into it’, citing positive outcomes as clarity of thinking and empathy of learning. He said that ‘the discipline of academic research at a high level is helpful in tangential ways because it makes you think of things, think things through quite clearly’. Of the pupils, Mr Independent said that ‘if they can see that you are studying as a teacher and that you have to go home and do a pile of homework as well... you are role-modelling’ and ‘you can say to people, “you want to be learning right the way through life”’. For his subject, also, there is a research project for A-Level students to conduct and he is able to ‘talk to them about, for example, the importance of getting a question right at the beginning of the research project’. This is similar to the notion of teachers ‘modelling a research and knowledge construction approach to learning’ identified by Godfrey (2016, p.311) and alluded to as far back as Stenhouse (1975).

Ms Academy, also, said ‘I just feel that the whole experience, for me, was a massive steep learning curve and what it did teach me was, again, was what it’s like to be a learner... which meant I could empathise more fully with my own students’. She agreed with the previous head teacher’s rationale for the Master’s programme being that ‘you should never stop learning and the actual process of learning is as vital as what you learn and if you have to learn something yourself, you then are in a similar situation to your own students’. At the end of the interview Ms Academy summarised that ‘I gained an enormous amount. I had to learn how to study again for a start. After years not studying... and I just loved the whole experience of being a student again’. As with Mr Independent, and also found by Thomas et al. (2014), the theme of practitioner enquiry role-modelling life-long learning is apparent here, pointing to the process of learning being as important as the findings from research.

Individual teachers: Engaging in research, therefore, was reported as having positive outcomes for teachers on a professional level but also on a personal level. Although Mr Head spoke at length in the interview about the connections he had with academics, he only selected the options: ‘student teachers from at least one university’ and ‘continuing professional development’ for Question 9, asking about connections that the school has with universities. Perhaps, as Punch and Oancea (2014) theorised, research input from HE has more of a personal impact so Mr Head did not consider his *school* to have connections with universities as these were more on a personal level. The rest of this subsection, therefore, draws attention to the benefits of engaging in research for individual teachers, such as bolstering a teacher’s career or even opening up other career opportunities for them.

There was clearly personal as well as professional satisfaction gained from engaging in research. Mr Independent’s initial reasons for engaging in Master’s research was that ‘being head of Design and Technology for over twenty years I told the deputy head that I was terminally bored’. Mr Independent theorised that ‘if you’re towards the back end of your career... you’re not likely to be using it for career progression’. It is more likely that more established teachers ‘do it for personal reasons. Just for personal fulfilment. To get the letters after our name’. A survey respondent exemplified this sentiment, commenting that having spent ‘30 years in current (and only!) school’, which was in the independent sector, ‘I enjoyed doing [a] Master [sic.] myself, as a personal challenge, but it won’t further my career ... at this stage, I’m staying put!’. This may be seen as what Sachs (1999) called ‘teacher research as a basis for professional renewal’, in a paper of the same name.

Similarly, referring to the Master’s course that her school funded, Ms Academy said ‘I didn’t do it to further my career. I did it for just to be able to say that I could do it. And I wanted to look at that particular subject’. She intimated that this motivation might be different for practitioners in other roles and at an earlier stage in their career, explaining that non-teaching staff such as mentors participated in the course as well as NQTs, in addition to ‘people like myself who were at the end of their careers but felt there would be personal value from it’. Here, then, there are personal and professional reasons for research engagement, resulting in benefits for individual teachers, though not necessarily the profession if these teachers then pursue job opportunities beyond teaching, as explored next.

Career beyond teaching: There is a possibility of teacher-researchers transferring to other careers as Higgins (2016, p.232) identified a lack of career progression in teaching that means that ‘the only way to move up is to move out, into administration or research’. Mr Independent said that he wanted to continue researching for a PhD because once he had completed his Master’s degree, he ‘had these research tools and no reason to use them again’ but he also alluded to the opportunities beyond teaching that a doctorate could facilitate. When asked whether he would be applying the findings from his doctoral research, Mr Independent replied that he was ‘looking to apply the findings, yes, but on a freelance basis’ after leaving the teaching profession to work as a consultant. This points to the possibility of research-engaged teachers leaving the profession, which is seen in Herrenkohl et al.’s (2010) report of teachers collaborating with researchers, where an experienced teacher temporarily left the profession for a career in the university where she had started her Master’s degree. Whilst engaging in research can have benefits for teaching, learning, professionalism and personal satisfaction of individual teachers, it could also have detrimental effects upon the teaching workforce if these teacher-researchers leave the profession.

Develop teaching career: One reason that teachers undertake Master’s research, according to Mr Independent, is for ‘career opportunities and I would suggest that somebody who is younger in their career is more likely to do it for that reason’. One survey respondent, however, did not think that researching would enhance job prospects in teaching. They stated in the free-text box after Question 16, asking about benefits of research engagement that ‘I have no experience of any of these in practice. Currently, the ability to teach 3 subjects, or willingness to accept a role at a lower pay scale is a more attractive proposition for a school appointing staff than their past research’. From this perspective, engaging in research would not make a teacher more employable.

Engaging in research to develop one’s teaching career is not only about seeking promotion but to develop professionally. Ms Academy was particularly interested in the research engagement of the student teachers as ‘when I trained in 1973, that wasn’t a feature of my degree’ so she used her position as a school-based ITE mentor to learn more about this evidence-informed approach to teaching. As part of the professional learning sessions she led for students on placement at the school, ‘we would look at the research they were required to

carry out and we'd share [the trainees'] methodology' and she 'learnt an enormous amount from them'.

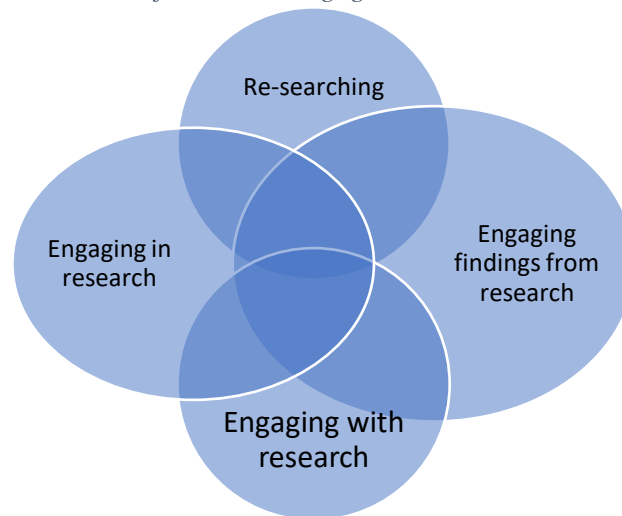
4.1.6 Conclusion

The main purpose of this phase was to elucidate the perceptions that different teaching practitioners have of research engagement. These can be summarised as: reflective practice, and the use of this for CPD; the benefits and drawbacks of utilising academic research, access being a notable issue; and, at the other end of the spectrum, engaging in more formal research, enabled and constrained by school and personal factors. As is evident from this list, it was not only the perceptions of research engagement that were illuminated but their practices, whether these were 'in-house' or had external influence from HE, and the potential of these practices for learners and teachers. These are still only perceptions, however, as the practices and their apparent outcomes could not be witnessed first-hand. What follows is a series of case studies, each using different methods in their overall approach to offer a more in-depth view of research engagement in three schools, to provide another dimension to the breadth that this first phase presented.

4.2 Ethnographic Case Study

As in the previous section, findings from the ethnographic case study are organised according to the theoretical framework presented in 2.1.8. A conceptual map of how research engagement is understood in this thesis is depicted in Fig. 15 as a Venn diagram because the linear framework adapted from Carr and Kemmis (1986) does not reflect the overlapping elements of research engagement apparent in the findings. The continuum is, however, still used to structure this chapter into four main sections, written in the first person due to the proximity of the researcher to the field of investigation. Pseudonyms, which relate to the school roles of participants (e.g. subject area), have been used throughout.

Figure 15: variations of Research Engagement



First of all, the background to this case study will be outlined. During the academic year 2016-17, partial access was granted to a secondary school where there were various research engagement activities taking place. The school recruited had been deemed ‘outstanding’ by Ofsted and was subsequently designated TS status, meaning it had R&D as part of its remit in serving local schools in its alliance (Teaching Schools Council, 2017). As the study drew to a close in July 2017, the school had also been awarded RS status (as detailed in 2.2). I will, therefore, refer to this study site as ‘Secondary Research School’ (SRS) henceforth. Using ethnographic methods (participant observations and interviews), I was able to gain an understanding of what ‘research engagement’ meant in this school. Analysis of school documents was also employed as these can be regarded as reflective of the social learning that takes place for teachers in a school setting (Cain et al., 2019).

This study mainly focused upon the first research question as I was able to experience the socio-cultural factors that influence research practices in a school across an academic year (September to July) but all three will be addressed and are brought together in the concluding subsection. Individual *perceptions* of research engagement *practices* were gleaned, particularly from the five semi-structured interviews that I conducted with teachers nominated by a senior leader. The *potential* of research engagement, as practised at SRS, was also present in the data in the form of outcomes of the school’s research practices.

Research background of SRS

The research-related practices of the school centred around the individual research projects that all teaching staff were required to conduct. These were facilitated by five middle leaders known as ‘Research Leads’ (RLs) in inter-departmental after-school meetings called ‘Learning and Research Hubs’. Although there were nine such hubs calendared throughout the year, I was only permitted to attend two of these as the others involved individual work or meetings between RLs and individuals, so were considered inappropriate for me to attend.

I was, however, granted full access to a course on becoming an RL that some teachers from SRS and their alliance schools volunteered to participate in. This was run by a deputy head teacher who had ‘educational research’ as one of his responsibilities, as listed on the school’s website. He will, therefore, be referred to using the pseudonym ‘Mr Research’. He himself had been trained as an RL as part of the RISE (Research-leads Improving Students’ Education) Project, which had been developed by an RS. The flyer for Mr Research’s RL Training stated that the course was aimed at those who ‘wanted to be better teachers’. This ‘cycle of improvement for improvement’, as Mr Research entitled it, was displayed at the second RL training session, with Mr Research explaining that it was to be used for teaching staff appraisals as conducting a research project had been introduced to the performance management procedure that year.

The research process advised is depicted in Fig. 16. It starts with a problem encountered in the school, for which an appropriate evidence-based intervention is sought. This is what Cain (2015) has described as instrumental use of research and what Coldwell et al. (2017) found to be the starting point of research use in the highly research-engaged schools they studied. The intervention is then implemented and evaluated to be embedded in the next academic year if successful.

Figure 16: research engagement process



I witnessed this dissemination at an inter-school meeting where one RL discussed the findings from her research with teachers from school in the TSA, with the intention that they could trial the intervention for themselves. Dissemination of research findings also occurred at an annual conference hosted by SRS (which I attended in 2016 and 2017) and at morning seminars called ‘Breakfast Jams’, five of which I attended. One intervention that had been researched by a teacher at SRS had been awarded funding to be scaled-up into a national trial and I found out more about this at a conference where SRS were recruiting participants. In the spring term, a bi-weekly Journal Club replaced a whole-staff briefing and I experienced one of these in the summer term.

As has already been discussed in 4.1.2, ‘research’ for some teachers meant reflective practice, conceptualised here as ‘*re*-searching’ as it involves teachers looking again at their practice (Goswami and Stillman, 1987), and SRS’s use of this practice is explained further in the first subsection below. There is then an exploration of how teachers in the school perceived research engagement as passively engaging (or deploying) findings *from* research, followed by more active engaging *with* research. The section ends with a detailed analysis of how teachers in SRS engaged *in* their own research projects and the implications of the different data collecting methods employed. The combinations of the different research practices depicted in Fig.15 varied, as did the order in which these research activities were practised, and this is presented in further diagrams throughout this section.

4.2.1 Teachers Re-searching

The research engagement at SRS always started with teachers reflecting upon improving their practice and two participants in particular gave details about this, so their insights will be used to illustrate how important this part of the research process was for teachers at the school. Interestingly, for some participants, the reflections of other teachers were used as evidence to justify their own teaching practices so the sources of this re-search evidence are explored next. The overall research practices of one teacher in particular, who I interviewed, were reminiscent of reflective practice as opposed to research in the conventional sense and as this was quite different to other participants, the final part of this subsection is devoted to how he understood research, conceptualised in this study as ‘re-searching’.

The importance of re-searching

The importance of reflection as a starting point in the research process for teachers was emphasised at the inaugural annual conference hosted at the school, which will be known as ‘Teachers and Research Conference’ (TaRC), in July 2016. I attended this conference with a view to exploring whether SRS would be suitable for recruitment to my ethnographic study and to discuss willingness with teachers to participate in the research. Although this event occurred before SRS had consented to participate in my study, the PowerPoint presentations used were accessed from the school’s website so are included as data here.

There was an external speaker at TaRC who gave a presentation entitled ‘What would a curriculum to develop evidence-based practitioners look like?’. Here, he introduced the acronym ‘PICO’ to describe the process of evidence-based practice, with the ‘**P**’ denoting a **P**upil or a **P**roblem that a teacher has identified through their reflections. Known here as ‘Dr Pico’, he went on to explain that finding an **I**ntervention to be trialled was next and this trial should allow for a **C**omparison to be made so that intended **O**utcomes i.e. effects can be measured.

One of the three original RLs to be trained in the academic year prior to my case study also presented at TaRC, placing great importance upon the reflecting aspect of her research engagement when sharing her practices with delegates. As she was the subject leader for science and had obtained a doctorate, she has been assigned the pseudonym ‘Dr Science-Lead’. In her presentation, Dr Science-Lead explained that she had decided upon student

recall of knowledge as a focus for her research due to the changes to the specification for the General Certificate of Secondary Education (GCSE) requiring more of students. Additionally, knowing the pupils and the pupils' perceived capabilities in coping with the new examination, she also wanted to introduce a strategy that would foster a 'growth mindset' by tracking effort on a simple spreadsheet and sharing this with the class. Upon completion of this trial, she felt that improvements in attainment were due to the growth mindset technique but these reflections were not enough to draw conclusions so she intended to continue trialling the effort tracker, without the iPads, in the next academic year to be more conclusive. Dr Science-Lead started by re-searching what was needed to improve the attainment of her pupils, tried two promising strategies and used further reflections to progress her knowledge base. Without re-searching, Dr Science felt that she might not have found this potentially more cost-effective way of improving learning.

One of the RLs appointed in the 2015-16 school year was an English teacher, known here as 'Ms English-Research', who explained at TaRC that her research into effective strategies for teaching vocabulary originated from her reflections about being 'constantly surprised by words students do not know'. Reflection also played a part in the construction of the intervention of 'direct instruction' as she had heard about the perceived benefits of this technique from a colleague who is the Special Educational Needs and Disabilities Co-ordinator (SENDCo). Using the reflections of other teachers is conceptualised as using 're-search' evidence and is explored next.

Re-search evidence

Evidence generated by teachers' reflections, or 're-search' was promoted as useful in teachers' CPD at SRS. Reflections of teachers are now widely shared in the public domain via social media and this form of re-search evidence in blogs and on Twitter was frequently mentioned in SRS. The use of these sources of evidence was reiterated by the other deputy head teacher, 'Ms Deputy', responsible for learning and teaching, who organised the Learning and Research Hubs that were set up to support the research engagement of teachers. In a presentation to all teaching staff before they dispersed into their inter-departmental groups during one after-school session, Ms Deputy informed them that sources of evidence informing interventions could include blogs, research already conducted in the school or teachers' own conversations/ observations. She also told me that there is a folder on the school's shared computer network with links to journal articles but also blogs, so other

teachers' reflections were clearly as important as empirical evidence from published research at SRS. Coldwell et al. (2017) found that school leaders from highly research-engaged schools found evidence via social and other media in the public domain but did not always realise the need for caution in using these media as sources of evidence because, as their content analysis found, 'research-based content is rare' (ibid., p.62) in these sources.

The appeal of this *re*-search evidence is practical rather than theoretical information. In the first Learning and Research Hub that I attended, it was generally agreed that practical recommendations from other teachers, either within the school or in published works, were preferred to theories from academia, which is the opposite to what Brown and Zhang (2017) found. A new room had been built in SRS over the summer holidays by reducing the size of the staffroom and this was introduced to me by Mr Research as the 'Research Library', which was a feature of highly research-engaged schools according to Coldwell et al. (2017). This was populated with books by educationists but not necessarily about empirical education research (photograph in Appendix 8).

Dr Pico at TaRC emphasised that the intervention to be researched should be informed by evidence, but with a definition of 'evidence' that included teachers' reflections. The overall cycle presented by Dr Pico consisted of:

1. asking (questions constructed via reflections);
2. acquiring (evidence to answer the questions);
3. appraising (for validity and practical use);
4. aggregating (the appraised evidence from multiple sources);
5. applying the findings from this evidence; and,
6. assessing by evaluating the outcomes.

The first stage, 'asking', refers to constructing a question using the PICO formula, as above, so this question should be personalised to a problem that the teacher is having. This should then lead to a search for evidence that subsequently needs appraisal before an intervention is applied and evaluated. He noted that some evidence is 'more relevant and valid' than others and proposed that evidence-informed practice does not just include ideas from existing research but from teachers' reflections. Similarly, Coldwell et al.'s (2017) interviews with head teachers illuminated a reflective approach to research use consisting of:

1. using external evidence to solve a problem that had come to light through analysis of school data and professional experiences (*re-searched*); and,
2. evaluation of the impact of the evidence-informed solution.

Four sources of evidence were recommended by Dr Pico at TaRC, not just from (1) research, but from (2) stakeholders, (3) practitioner expertise and (4) data generated by a school/college. These sources of evidence were explicitly repeated in Mr Research's Research Lead Training. Comparing teaching to the medical professions, Dr Pico quoted from the *British Medical Journal* that evidence-based medicine uses both clinical expertise and best available evidence. Dr Pico highlighted that it is not only empirical evidence that is used in medicine and partly blamed academia for this misconception.

Dr Pico reiterated the four sources of evidence at the second annual conference that the school hosted but before his presentation, the chief executive officer (CEO) of a MAT presented a similar message. The CEO, who had applied for RS status but had not been successful, emphasised that teachers need both research evidence and experience and illustrated this in a Venn diagram that depicted a cross-section between being 'research informed', 'experience informed' and 'data/ feedback informed'. Clearly in other schools, too, it is not only being informed by academic research that is important, but value is also placed upon practice being informed by reflections of teachers' experiences and/ or a *re-searching* of the data routinely generated in schools.

Re-search as part of teaching

In Finland, 'many teachers saw an analogy between researching and teachers' work' (Maaranen 2009, p.219) and this was also the case for one teacher interviewed. Referred to here as 'Mr Business' due to his subject area, he said that the school's research engagement that all teachers were expected to participate in during the 2016-17 academic year was 'very similar to my practice' as it was considered as merely a way of being reflective. He mused that 'some people think research is about just getting the attainment scores up and for me it was just about trying something and reflect[ing] on it'. However, this could be because teachers are required to 'reflect systematically on the effectiveness of lessons and approaches to teaching' according to the Teachers' Standards (DfE, 2011) so Mr Business's views could be attributed to compliance.

He explained that in the last academic year his research focused upon preparing Key Stage Four students for extended answers in the GCSE examination, a focus that was decided upon by re-searching data from practice exam papers taken by pupils. From these reflections, he concentrated upon individuals who were struggling to extend their writing under exam conditions. This focus, however, meant that attention to key knowledge in lessons was diverted, which he called ‘the unintended consequence of the research’. By reflecting upon this, what he had introduced this year was interleaving tests on essential terminology. He said ‘what’s interesting, doing the research, is the students that have not performed well on the key terms assessments then don’t go on to perform well in the mock exams so they’re a really good predictor’. By re-searching these data from test results, he was able to predict which students would need interventions leading up to their GCSE examinations.

Whilst re-search practices were seen by Mr Business as being integral to teaching, he implied that this is not always the case in other schools/ colleges and valued the agency to reflect during the research process. Mr Business saw the performance management process of the school as reflection focused, as found in highly research-engaged schools by Coldwell et al. (2017). He said that at SRS teachers are encouraged to consider ‘how you can reflect on it’ if their research project does not yield positive outcomes. For Mr Business, this is preferable to the ‘blame culture’ of other schools where there are ‘accountability issues’. Similarly, Kushner et al. (2001, p.48) attributed the success of the School-based Research Consortia to the programme ‘creating a supportive and safe programme ‘culture’’.

Although Mr Business referred to his reflections as ‘research’, they are identified here as ‘*re*-search’ for the other elements of research engagement are missing (Fig. 17), not least engaging *with* research from published works.

Figure 17: reflection as re-searching



Without engaging *with* existing research, McIntyre (1997, p.10) identified teaching as trial and error, or ‘trial by ordeal’. Indeed, Ms English-Research remarked in her interview that research at SRS involved ‘a lot of trial and error’. In her TaRC presentation, Ms English-Research cited three books that had ‘robust vocabulary instruction research’ and used these works for ‘practical examples’ and ‘practical ways to teach vocabulary explicitly’, as well as other teachers’ re-search from blogs. As Ms English-Research arrived for her interview, conducted in the new Research Library, she returned a book that she said had been ‘really, really helpful in giving practical suggestions of how it should look in the classroom’. Merely implementing strategies based upon findings from research is conceptualised here as ‘engaging findings from research’ and is dealt with in the next subsection.

4.2.2 Engaging Findings from Research

There is a dual focus in this subsection as it first presents how some teachers at SRS engaged the findings from external research with little appraisal, before moving on to how findings from the school’s research were intended to be mobilised within and beyond the school. It begins with a description of sources of evidence from existing research that were used to inform practices, then describes what can happen when there is a lack of criticality when basing school practices on uncritiqued evidence. This is identified in this thesis as engaging (or deploying) findings *from* research. As new knowledge was then generated by teachers researching the impact of interventions, how this new knowledge was mobilised (or not) ends this subsection.

Accessing findings from research

During the ethnographic study, I encountered the common practice of teaching practitioners accepting without questioning evidence from certain research outlets. One of these was the Centre for the Use of Research and Evidence in Education (CUREE). Indeed, the head teacher of SRS, known here as ‘Mr Principal’, on the first day of the year announced that the new research engagement practices of SRS as a whole had foundations in reports on research engagement by CUREE. On the CUREE website are ‘route maps’ guiding teaching practitioners through strategies informed by research evidence and this resource was

mentioned at the Research on Workload conference in a presentation by the CEO of a MAT. He told delegates that he uses these route maps to avoid losing time re-inventing the wheel as the maps signpost the interventions that should be implemented in the school.

Mr Research frequently advocated the EEF, an organisation with which he had long-standing connections, as he told RL trainees. At the first day of the school year, known as INSET, he signposted colleagues to the EEF as a possible place for teachers to find a suitable intervention for them to trial for themselves. A representative of the EEF had presented at TaRC and described the organisation's roles as communicating findings and for brokers and mediators to help schools find and use evidence-based approaches. To do this, he said the EEF produced Guidance Reports, defined as 'clear, actionable guidance' that 'places EEF evidence within the wider evidence-base'. He questioned whether teachers need to read primary research papers, advocating the importance of implementation over the language of academic papers and access to them. The speaker concluded that research engagement needs to be packaged up into CPD; in this way, it can be inferred that teachers are passively engaging the findings *from* research rather than actively engaging *with* the research, as professionals do in Carr and Kemmis' (1986) framework.

This was echoed at the second annual conference hosted by SRS via another contributor to the EEF, who spoke of the 'evidence ecosystem', consisting of producers (researchers), synthesisers (his role at the EEF), distributors/ transformers (the EEF) and implementers (teachers). This passive role of teachers appears to be the DfE's (2016) agenda as the PD Standard just refers to CPD being 'underpinned by robust evidence' as opposed to teachers critiquing evidence before using findings to inform their practice. Coldwell et al. (2017, p.7) noted that senior leaders in the most highly research-engaged schools that they investigated 'were familiar with key intermediaries like the EEF' but if used as a conduit to transfer research to practice, the role of the teacher as a professional is undermined.

At SRS, the EEF was perceived as an efficient (both in terms of time and finance) mechanism to ensure that practices are informed by evidence. At TaRC, the founder of the RISE programme, pseudonym 'Mr Rise', displayed a graph of the interventions evaluated by the EEF, with cost effectiveness on the x axis and efficacy on the y axis. He advised delegates to choose 'what works' for the lowest cost by circling the top left quartile of the graph. This was necessary, he told delegates, so that teachers 'stop doing so many dodgy

things that waste our time'. SRS's next annual conference, in summer 2017, took this view that implementing strategies based upon research provides easy solutions for busy teachers.

Uncritical use of research evidence

The focus of SRS's second annual conference was 'how an evidence-based approach, rooted in effective educational research, can help reduce workload in schools', aimed at those 'trying to solve the workload challenge through an evidence-based approach'. The perception of research providing a solution precludes the need to critique it. According to the literature on the conference, pseudonym 'Research on Workload' (RoW) Conference, a key focus for SRS's alliance is 'using research evidence to inform practice', with the focus upon passively accepting what the research suggests teachers should do rather than being critical, which is what Carr and Kemmis (1986) saw as a feature of professionalism.

One speaker at the RoW conference, Dr Pico, did touch upon the criticality of research use. He asked delegates to discuss an innovation that they had used during the school year and how they knew it was the right strategy for them to use. The head of history, Mr History-Lead, talked about using the PICO formula for their research projects and explained that it must be right because Dr Pico himself had told them about it at last year's conference. Whilst this absence of criticality might be attributed to Mr History-Lead not being an RL, even teachers with this status were not necessarily critical consumers of research and privileged sources of evidence from studies conducted via RCTs or meta-analyses of these kind of studies as they were promoted in Mr Research's training (4.2.3 below).

As an exemplary case of an RL wanting to engage findings from research without examining the details of the evidence, Mr Research at the first Research Lead Training told attendees that he had proposed banning highlighters because the research says they are ineffective for revision. Mr Research added, however, that he was eventually overruled after the English department protested against his proposal to ban highlighters. Like the research-engaged senior leaders in Coldwell et al.'s (2017, p.8) study, he did, ultimately, 'synthesise the research evidence with other forms of evidence including school data and the experiences of other teachers and schools'. What is concerning is that Mr Research was setting an example to other teachers that research evidence can be uncritically applied without considering contextual nuance. Hammersley-Fletcher et al. (2015, p.6) found that the TSAs

they researched were more likely to provide their own internal research support, like the Research Lead Training in SRS, rather than seeking external guidance, which ‘could constrain development of evidence based teaching and lead to the replication of practices not making the most effective use of research’.

Use of findings from school research

As well as teachers from SRS and the wider alliance being encouraged to engage the findings from existing research, their own findings from their individual research projects were also disseminated with the intention that the new knowledge they had generated would be of use to other teachers. The vision for an evidence-informed school where collaboration and dissemination are important was shared by Mr Principal in the first session of the INSET day, attended by all teaching staff. He coupled this vision with his desire for the school to become an RS, which did happen towards the end of the school year.

Staff were all encouraged to share their research findings, with their departmental line manager during their performance management review and perhaps with the whole school at a celebration at the end of the school year. At Ms Deputy’s INSET session, she introduced a template that she had constructed to be used as evidence for their performance management review and to frame teachers’ findings for dissemination. Staff were reminded about this in the whole-staff briefing of the first Learning and Research Hub that I attended. Ms Deputy told teachers to consider how their research could be developed in practice. The examples she gave were that other schools might adopt and trial their strategy or ‘larger trials could come out of these’ which would be ‘more controlled’, implying that she was dubious about the RCTs conducted at SRS. At this point of the session, Dr Science-Lead announced that she was involved in collaborative planning with a local school to construct standardised lesson plans based upon her research into tracking effort as she said ‘I think my pupils have undergone a mind-set change’ so clearly wanted to disseminate this strategy.

Local dissemination of teacher-generated knowledge within and between schools was seen as important by Williams and Coles (2007), as well as the role of education authorities. MATs and TSAs, however, are replacing local authorities (Gunter and McGinity, 2014), as was seen in SRS when Dr Science-Lead organised an inter-school meeting to encourage local schools in the alliance to trial her strategy for themselves. I was granted access to this meeting, attended by two teachers from a secondary school in the alliance, known here as

‘Alliance High’ and, with the consent of all in attendance, I recorded as field notes my observations of how the meeting unfolded. Dr Science-Lead started by describing her intervention as a simple revise and test recall structure whereby exam questions are set as homework and self-marked, with the teacher tracking effort on a spreadsheet and sharing this with the class. The summative assessment, consisting of the same questions, is then marked by the teacher and progress monitored. It was this tracking method that she was keen to scale up by rolling it out to other schools to see if it would have a similar effect in another context (see Fig.18). N.B. The emphasis on the arrows in the last part of the flow chart.

Figure 18: research cycle highlighting findings from school research being re-deployed



Although I did not hear of any further developments regarding teachers from Alliance High trialling Dr Science-Lead’s idea, another TS within the alliance did take the idea on board, suggesting that schools with this status may find research use easier. In the afternoon of the RoW Conference, the head of science at this school, known as Teaching High School, presented with Dr Science-Lead the collaborative planning that they had done that year, based upon Dr Science-Lead’s ongoing research into a tracking system that records a grade for effort. Coldwell et al. (2017, p.31) found that ‘most of the highly research-engaged schools were leading, or involved in, cross-school evidence-based projects’, which is, of course possible in a TSA. McLaughlin (2010) advocated collaborations within existing networks rather than with dissimilar schools but if TSs only collaborate with similar schools in their alliance i.e. other TSs, this defeats the object of school-to-school support as the schools needing the most support do not feel able to able to participate in the risk-taking needed in research engagement.

An NCTL report into R&D in TSAs (Maxwell et al., 2015) found that there were benefits to TSs working with other schools to help with their improvement and although Teaching High School was a TS like SRS, it was implied that they were in need of support. For example, the head of science from this school mentioned Ofsted demands as a restriction to embedding the strategy proposed by Dr Science-Lead and that because only about 50% of pupils in her school are doing their homework ‘properly’, effort could not be graded sufficiently, as is necessary in Dr Science-Lead’s evidence-informed intervention. She had, however, tried it and reported that she had seen the benefits.

The afternoon proceedings of TaRC were also dedicated to the research findings of middle leaders. As an example, Ms English-Research’s presentation at TaRC explained that she had started an intervention of direct instruction to teach vocabulary and if this was found to be successful, she intended to establish a vocabulary ‘hub’ to support teachers in other departments, named as music, geography and French, to trial it in their contexts. If unsuccessful, Ms English-Research’s presentation indicated that she would assess why this might be the case and look for patterns. To determine the success of her intervention (of direct instruction), she had designed, what she called, a randomised controlled trial, as recommended in the RL Training. Her presentation explained how the control and intervention groups were given a free-writing and a cloze exercise to complete for what she called a ‘pre-test’ to assess existing knowledge of vocabulary. At the end of the intervention, the ‘post-test’ exercises should see an increase in ambitious vocabulary used by the pupils in the ‘intervention’ group. In the next academic year, I learnt that this trial was ongoing and Ms English-Research was pleased with the positive outcomes she had identified by comparing the pre-trial tests with the mid-trial tests of both control and intervention groups. She had, therefore, already put plans in place for all form tutors to use direct instruction of vocabulary during morning registration as part of the school’s whole-school literacy initiative, before the final test scores of each group could be compared.

I encountered another English teacher at a Learning and Research Hub led by Dr Science-Lead, who wanted to focus her session upon ‘what effect are interventions having?’. Ms English, who was excited to talk about her research, explained that her strategy being trialled was self-assessment, which she believed had reduced marking workload. The homework completion rate had also risen to 70%, whereas she estimated that it was about 50% for the whole school. Three of her pupils were even completing extra essays as ‘they’ve realised they can do it’. Ms English said she was presenting her findings to the department at

the end of the week and rolling it out to the department for the next module, emphasising that it is ‘not a fad’.

The only concern of Ms English was that what she has done, which was similar to Dr Science-Lead’s project of the previous year that involved tracking effort, would not be accepted as growth mind-set, the focus of this Hub. Dr Science-Lead agreed that it is ‘nagging and tracking that makes the difference’. In the previous academic year, she had trialled iPads but had since concluded that it was not the use of technology that made the difference but the tracking system used to record pupil effort. She has now rolled this out to the whole of the science department, based on her findings of last year’s research. Teachers in SRS, therefore, were generating new knowledge from their research and this was being used by others.

Findings from research not used

At the Learning and Research Hub, where Dr Science-Lead was explaining the dissemination of her research findings to Ms English (the only other teacher present as the others were working independently), it transpired that not all members of her department had embraced her tracking technique discussed above. She displayed the tracker on the board and both teachers were rather embarrassed that one of the science teachers had not completed his page of the Microsoft Excel workbook. This ‘sends a message’, as Dr Science-Lead remarked, and Ms English replied that ‘it’s all for show’. These comments made sense to me later when I realised that the initials of the teacher in question (who was not complying with a departmental procedure that was based upon the evidence found in Dr Science-Lead’s research) belonged to Mr Research. Considering that he was promoting teacher research in the school, it can be inferred that Dr Science-Lead and Ms English thought that it was hypocritical of Mr Research not to be using a departmental initiative that had been informed by the head of department’s research. Dr Science-Lead tried to excuse the empty tracker by remarking that ‘it’s easier for people to get on board when it’s working out for them’, implying that what seems to have been successful in one trial might not ‘work’ for other teachers.

A Spanish teacher I interviewed, ‘Ms Spanish’, also implied that individual personalities could be a barrier to the uptake of a strategy based upon the in-school research projects. Her project originated from her perception that speaking in the foreign language was

the ‘biggest problem’ for her students due to ‘changes in the GCSE’ exam specification so she decided that in the 2016-17 school year, she would base her Year 8 lessons ‘all on speaking so everything they did from September has been speaking’ rather than writing. She compared their test results with another class and although her intervention group achieved a slightly lower average score, she explained that they are generally not as confident so she considered the intervention a success. Ms Spanish told me that she would like to share her intervention of only using speaking activities in MFL classes and that the other Spanish teacher in the school might take up her idea of speaking-only classes as she likes different ideas. The French teachers, however, may be ‘a little bit more reluctant because they’ve been teaching for a lot longer’, qualifying this with ‘unless they do see the results paying off’.

At TaRC, a newly-appointed RL from physical education (PE), ‘Ms PE-Research’, listed ‘agency’ as one of the benefits of research engagement in her presentation but although teachers might have felt that they were able to influence decisions based upon their learning from research engagement, this was not always possible. Another PE teacher, ‘Ms PhysEd’, was hoping that the findings from her research would change school policy about gender separation in core PE. She said in the interview that Mr Research had told her that ‘if it goes that they prefer single we’ll try it out with single sex next year’ but Mr Deputy had already informed me before I had interviewed her that this probably would not work from a timetabling point of view. Foreman-Peck and Heilbronn (2018) acknowledge that there is a degree of autonomy that is required for the conduct of AR and any changes to practice made as a consequence. Although Ms PhysEd had the opportunity to conduct a form of research, she did not have the ability to enact changes as a result of her findings. For research engagement to have an impact on school improvement, Mincu (2013) stressed the importance of schools having the capacity for change, which was not the case at SRS.

4.2.3 Engaging with Research

This subsection focuses upon teachers engaging *with* research, which is a more active process than engaging the findings from research, as above, because it requires some degree of judgement. Starting with a description of the sources of evidence that teachers at SRS and their TSA could engage with, the subsection moves on to explore how the appraisal of this research was understood by participants. As it was the intention at SRS that appraised research would then inform their own interventions to be trialled, this ideal is explored.

Attention is then turned to the reversal of this process. At other times, engaging with research was done as an intellectual exercise, not always solely for the purpose of constructing an intervention, a concept which closes this subsection.

Sources of evidence to engage with

Access to research in order to engage with it was seen as an issue but one that was improving. Dr Pico at TaRC highlighted the importance of increasing teachers' access to evidence, which he said was being achieved. At the second annual conference, he pointed towards the CCT as a way for teachers to access research, although he did say that a key paper that he thought should be accessible to teachers through the CCT's portal was not in their database. Another presenter at this conference, who was a contributor of the EEF, praised the CCT for the work they have begun but, like with CUREE, there is a subscription fee. Mr Research spoke about the possibility of institutional membership with the CCT so that individual teachers would not have to pay the annual fee but I heard no more about this during my time there.

At the first Research Lead Training session, Mr Research distributed a handout to attendees that stated 'of course, the first port of call is the EEF Toolkit, which is at the core of our project at [SRS]' but that also provided a list of the 'many more sources of good evidence'. These may be categorised as:

- a) meta-analyses from CUREE, the EEF, the What Works Clearing House, similar to the EEF from the United States of America (USA), EPPI Reviews (from the Evidence for Policy and Practice) and the National Foundation for Educational Research (NFER);
- b) summaries from the Institute of Effective Education (IEE), which 'commissions and facilitates research and communicates' and the IRIS Center from the USA which 'has a number of useful evidence-based practice summaries';
- c) 'articles' (as opposed to peer-reviewed papers from academic journals) from *Research Intelligence* (a free e-magazine by BERA), *Research in Teacher Education* (from the University of East London), which has 'useful free issues and studies' and a collection of AR projects by teachers at an RS.

Although this raises awareness of the broader range of evidence available (Williams and Coles, 2007), Mr Research reiterated that 'we favour the EEF here'. Similarly, Dr Pico at TaRC advocated the use of evidence from other sources to inform interventions, he said it

was important for teachers to ‘weight’ evidence in favour of empirical evidence over teacher experience from practice, advising the use of ERIC (Education Resources Information Center) and Google Scholar. Privileging certain forms of evidence as a way of appraising research is dealt with next.

Appraising research

Appraisal of research was understood by some at SRS as selecting studies that had convincing quantitative data gathered via an RCT. Again, the RISE Project can be seen as an influencing factor in this research engagement practice as its founder, Mr Rise, spoke about the appraisal of research to inform interventions at the school’s inaugural annual conference, TaRC. He warned that ‘everything you look for and all that you perceive has a way of proving whatever you believe’ and proposed that research evidence needs distilling before it is used to create an intervention. It became clear that by this he meant filtering research so that only, as he put it, ‘well-designed studies’ yielding quantitative data are used as sources of evidence.

To appraise research from these sources, Dr Pico recommended that teachers should be familiar with ‘effect sizes and confidence limits’. Suggesting that these terms, associated with statistical analysis, are ‘key terms in educational research’ implies that education research is dominated by quantitative data. He advanced that an RL in a school might be helpful in facilitating understanding of these terms. Although use of the phrase ‘effect sizes’ was observed during the fieldwork, this was used by Ms Deputy in relation to teachers presenting the results of their own research, not in the appraisal of existing research.

There was no evidence that RLs at SRS had been trained in appraising evidence according to the statistical significance of findings as they mainly relied upon the EEF. Presenting the role of the RL to delegates at Teachers and Research Conference, Ms PE-Research explained that part of the role was to engage with all kinds of evidence, not just from studies presenting quantitative data. ‘Evidence’ was defined in her presentation as being sourced from practice (i.e. personal experience), research and theory, with no mention of privileging any one form of evidence. It was clearly the EEF that was favoured, though, as Ms PE-Research’s research project, which trialled using technology for feedback, homework and collaborative learning was informed by EEF evidence only.

Another RL, 'Ms Maths-Research', explained that SRS's RLs were provided with two hours per week to engage with research and Ms Deputy elaborated that this was so they had time for additional reading, which she said was mainly from the EEF Teaching and Learning Toolkit. As opposed to looking for statistical significance in studies from the different sources recommended by Dr Pico, the extent of appraising the robustness of research to be engaged with consisted of using the EEF as it was seen as a reliable source of education research.

Another way of appraising research was for teachers to use their professional judgement to decide whether an evidence-informed intervention would be appropriate for their practice. A speaker at TaRC, pseudonym, 'Professor Research-Schools' as he was an academic heavily involved in the Research Schools Network (RSN), presented the importance of research evidence to underpin school decisions but highlighted the need for professional criticality (as proposed by Carr and Kemmis, 1986). Posing the question 'should teachers and school leaders have to understand research?', he provided the answer as 'yes' because 'research evidence is problematic', therefore needs critiquing. Dr Science-Lead can be used as an example of a teacher at SRS who used their professional judgement to decide upon an intervention. At TaRC, she explained that one initiative that was said to be productive was incorporating oracy into lessons but she felt that this would be a big undertaking, therefore it was disregarded as being too time consuming. Another strategy based upon research that Dr Science-Lead had read about involved giving voice-recorded feedback to students on their assessments but after trying this, she found that the theory from research did not work for her in practice.

Research-informed interventions

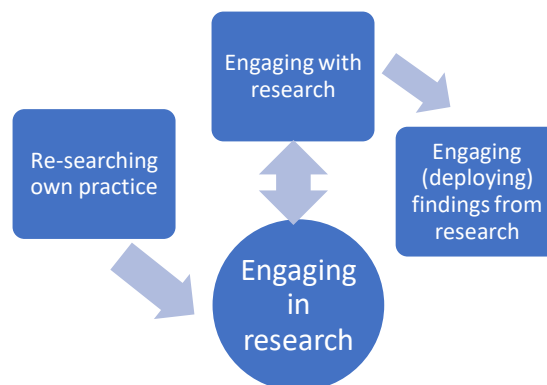
Some teachers were more critical than others when engaging with research to inform their interventions. An RL from the maths department who I met at the initial school conference (TaRC), known here as 'Ms Maths-Research', detailed the evidence she had engaged with to construct an intervention that she trialled in the 2015-16 school year. In her presentation, she explained how her research project originated from a policy-maker calling for stronger memorisation in schools. She engaged with the research cited as evidence for this and explored its limitations. In her PowerPoint, Ms Maths-Research cited the research she had engaged with, explaining that she then constructed an intervention based on the work of one particular researcher.

Another presenter at TaRC, however, had uncritically used the EEF to aid his intervention. The subject leader for history, ‘Mr History-Lead’ started his PowerPoint with the EEF evidence he used to inform the changes he made to assessment. He had decided to focus upon this area because of his own aims of making his marking more efficient and his preference of feedback rather than grades. The use of marking codes recommended by the EEF, he said, suited this agenda, which could be identified as strategic use of research (Cain, 2015). There was no mention of appraising the research used, as Ms Maths-Research did, but Mr History-Lead did actively engage with the research to inform his intervention rather than passively basing the marking strategy on EEF findings as he created the codes himself from the GCSE assessment objectives. Mr History-Lead used his knowledge of the GCSE specification as well as evidence from research to construct his intervention. Using meta-analyses like the EEF Toolkit to construct an intervention to be trialled was recommended to all teachers during INSET. Ms Deputy gave examples of marking strategies as possible interventions to be trialled with students based on a meta-analysis.

Engaging in research before engaging with research

Whereas the ideal was that teachers’ interventions were to be informed by research and their trials would involve recontextualising the knowledge from existing research (Hordern, 2016a), other teachers formed an intervention based upon their own reflections (*re-search*) and were encouraged to engaged *with* existing research once their trial had begun (Fig. 19).

Figure 19: engaging in research before engaging with research



The first Learning and Research Hub that I was able to attend was led by Ms Maths-Research, who encouraged the members of her Hub to find existing research on their chosen topic, even though trials had already begun. One modern foreign languages (MFL) teacher thought that this was a waste of time, muttering the proverbial ‘the horse has already bolted’. She had already started her intervention, which she had thought of herself (based upon her own re-search). In one TSA studied by Maxwell et al. (2015), the school’s facilitator of research, similar to the RL in SRS, perceived their colleagues to be reluctant to read research but this view was contradicted when the teachers themselves were asked about their reading as they said that they did ‘read research themselves and used that knowledge to shape their projects’. Whilst the MFL teacher at SRS may have thought that engaging *with* existing research was futile during her own engagement *in* research, this was still encouraged at SRS.

Even though the research projects of teachers were already underway at the time of the second Learning and Research Hub that I attended, Ms Deputy was still encouraging teachers to engage with research. During the whole-staff briefing at the beginning of the hub, she reminded all teaching staff present that she ‘spoke about access to journals etc. before Christmas’ and that there are folders for all the different areas of research that people are engaged in. She added that ‘some people have already taken things out of the school research library’, implying that engaging with research is ongoing. In the NCTL’s (2015, p.160) report into how TSs use R&D, ‘there was a variation across the alliances in the extent to which external research evidence was used to inform the development of interventions and to support ongoing development’. Although perhaps not always initially informed by research evidence, ongoing engagement with research was encouraged and taken up by some teachers.

One such teacher, Ms Spanish, told me in an interview that her intervention had been decided upon first, then as this was being implemented, research had been engaged with. The intervention was not based upon existing research, indeed, Ms Spanish herself said ‘I don’t know where the idea came from’, but it was later informed by existing research findings. Her later engagement with research on oracy using one particular book enhanced her practice of this initiative. As she explained, with her lessons involving speaking activities only, she had to find tasks that were engaging and structured to a certain degree so that she could easily gauge whether her pupils were progressing with their learning. This knowledge of progression was her main perceived barrier, which she thought was alleviated by academic reading. Whereas in the past, she relied upon reflections of other teachers on social media to

inform her practice, engaging *in* research had motivated her to engage *with* research, as also found by Maxwell et al. (2015).

Conceptual engagement with research

Cain (2015) identified some teachers' engagement with research as conceptual, rather than functional, and this was also seen in SRS. For example, some teachers at SRS voluntarily shared their research engagement at sessions before school called 'Breakfast Jams'. The first Breakfast Jam I observed was attended by 12 members of staff but I was told by Ms Deputy, who co-ordinated the sessions, that it is usually more. From the five I attended, the number of participants ranged from 6 to 14, usually consisting of the same teachers who were clearly interested in learning from research. Intellectually engaging with research, not necessarily to inform practice but as a matter of interest, was made compulsory part way through my time at SRS via journal clubs. The use of journal clubs has been documented elsewhere (Sims et al., 2017), although attendance is usually voluntary (Coldwell et al., 2017).

The Breakfast Jams provided a platform for teachers to discuss research they had been engaging *with*, as well as the research they were engaging *in* and often the two were linked. Ms Maths-Research, however, presented her use of quizzes that she had constructed from her reading of retrieval practice even though this was not the trial she was working on that year. She said it could be a trial, however, if she compared the test results from her class with a class not using the quizzes as a mode of formative assessment. Coldwell et al. (2017) found that sustained change was only possible in research-engaged schools if there was time for teachers to debate first of all, then reflect upon the impact of evidence-informed strategies in practice.

Although the Breakfast Jams were more about sharing how reading of literature had influenced teachers' practice and/ or trials and not necessarily for dissemination of research findings, some attendees at the Breakfast Jams did express an interest in trying what was being presented for themselves. For example, Mr History-Lead remarked that Ms English-Research's vocabulary intervention would be transferable to his subject.

When presenting at a Breakfast Jam, Mr History-Lead focused more on his practice than his engagement with research. Ms History-Lead admitted in his session that he needs to do more reading as what he was trialling was based upon his own *re*-search rather than existing research. The head teacher interjected that he had read about the use of immediate

feedback in the Times Educational Supplement, so although not directly engaging with academic research, some reading was shared in this session.

In the spring term during my time at SRS, the staff briefing was replaced every fortnight by a Journal Club that was mandatory for all staff, which was quite extreme compared with other studies of TSs in the literature. In a report on the impact of TSs, one TSA where R&D was considered a ‘core focus’ (NCTL, March 2014, p.4) held research study groups but these were only for senior leaders as opposed to the whole body of teaching staff. For SRS’s Journal Club, all staff were expected to read education-related literature, though not necessarily evidence based. The website *Education Next* was used to access reading, which was sent to teachers as an email attachment a week in advance. In the email forwarded to me, questions were posed that were to be discussed ‘in your usual groups’, which, Ms Deputy explained to me, are comprised of 10 to 12 members from different subject areas. The groups were led by the senior leadership team (SLT) during the 2016-17 academic year in which this study took place but Ms Deputy explained that the whole staff are going to be involved in facilitation for the next school year. The topic of research seminars was raised by Ms Deputy as she was escorting me out after I attended a Journal Club as she was clearly interested in the possibility of the school hosting research seminars in the future.

The purpose of the Journal Club seemed to be to discuss what they had read on an intellectual rather than utilitarian level. The main purpose of this research engagement activity was just engaging *with* research, not necessarily for anything to be implemented. One member of the journal club that I attended, however, remarked ‘this could be a trial’, in relation to the strategies to improve literacy that they had been reading about. Cain (2015) found that teachers engaging *with* research also helped them to engage *in* their own research, which is the focus of the final subsection.

4.2.4 Engaging in Research

Engaging in research at SRS was severally referred to as ‘evaluating’, ‘enquiring’ and ‘trailing’ so what these practices meant for the participants is first presented in this extended subsection. Interspersed throughout each subsection will be an exploration of the importance placed upon using a control group to produce quantitative data of pupil attainment. Where

there were teachers who collected qualitative data in their research, a description of their data collection methods is also presented, along with an exploration of the potential use that the different data collected may have. There is then an account of a national trial that Mr Research and Ms English-Lead were engaged in. Engaging in this kind of research ethically is explored next. The section ends with the enablers and constraints of engaging in research as teachers at SRS did. Though the potential of SRS teachers engaging in research using these different forms of data was not a focus for this study (as it was in the evaluative case study in Chapter 4.4), there were opportunities to explore the impact that engaging in research is perceived to have in each form of research utilised by the teachers of SRS.

Evaluating

The practice of evaluating can be traced back to the main intention of the RISE programme, which was for an RL to design appropriate, robust, school-led evaluations of research-based interventions at a school level. One reason for the necessity of teachers evaluating interventions was that they ‘couldn’t isolate what worked so [departmental] development plans were getting bigger’ (Mr Research, Research Lead Training I). Mr Research explained at an external conference, ResearchED, that an overarching agenda is set by each head of department and individual research questions seek to answer these questions, in part. To facilitate the individual research projects of teachers, staff were allocated to Learning and Research Hubs based upon the research questions submitted by teaching staff. I was told by Ms Deputy that hubs vary in size as follows: homework (which I was told by Ms Deputy is a small group), growth mindset, recall and mastery, assessment and feedback and direct instruction (which is another small group of only 5).

The desire to know whether an initiative was making a difference was important at SRS. This was also alluded to at ResearchED when Mr Research said that the RSN initiative itself was also being evaluated to see whether a research-based school improvement model makes a difference to classroom practice and student outcomes. Contextualising these evaluations was particularly important for some. Dr Pico’s presentation at TaRC ended with ‘you are teachers wishing to improve, rather than researchers seeking to prove’, reminding that it is not about disseminating generalisable findings but what works in context. Dr Science-Lead echoed this sentiment in the inter-school meeting she organised, saying ‘research is a misnomer; it’s about collecting evidence of what works in context’, which is

why she wanted other schools to trial her tracking strategy for themselves rather than simply employing the same method.

As has already been detailed, the PICO structure was introduced at TaRC but also recommended as a guide to evaluations was a document available on the EEF's website. This 'DIY Evaluation Guide' was referred to by Ms Deputy at the November Learning and Research Hub and by Mr Research at Research Lead Training II. Mr Research asked trainee RLs for a quick show of hands to gauge who had heard of the EEF DIY Evaluation Guide and it was clear that teachers attending from other schools had not. Mr Research certainly favoured this organisation and advised attendees to 'keep an eye on the EEF'.

The head teacher, when explaining on the first day of the 2016-17 school year that all teachers were required to research, said he wanted the appraisal process to be linked to pupil learning so teachers' research projects would be open to scrutiny by their line manager with a focus upon pupil attainment. At TaRC, the only success criterion mentioned by Mr Rise, from another RS, was 'impact on student progress' and this is also what Mr Research repeated during the Research Lead Training sessions that I observed, though with the focus being upon quantitative examination results rather than other forms of progress exhibited by young people. Dr Pico at TaRC presented his understanding of a document from the medical sector used to self-evaluate research engagement, highlighting the importance of documenting 'impact on pupil learning/ outcomes of any changes' that should be sustainable. Similarly, Professor Research-Schools at TaRC advised that CPD should allow for 'experimentation to adapt/ apply approaches to your classroom' and went on to advise that this should then be evaluated in relation to the impact on 'students' learning outcomes' using quantitative data.

Quantitative data were generally privileged at SRS but the limitations of quantitative data were felt by some teachers. In an interview with Ms English-Research about her intervention to enhance the vocabulary of her students, she conceded that in her opinion 'it's clear to see that they are remembering it and using it more. But to actually put maybe like a percentage on it or something is more difficult'. She laughed that the EEF report on 'how many months progress' and elaborated that because of her small sample size, this could not be done, therefore it must be limited. Cain (2015) identified teachers in the research-engaged school he studied as always aware of the limitations of their findings but in this case, Ms English-Research was acknowledging the difficulties in the epistemology of measuring

success in English due to the subjective nature of the discipline, which means that the marking of the tests cannot be fully standardised.

At the end of the academic year at ResearchED, however, Mr Research described the EEF evaluation tool as too onerous adding that they have yet to get evaluations right at SRS. He went on to say that there would be more training in this for middle leaders next year. He explained that the remit of middle leaders acting as RLs is ‘looking at data, collaborating, evaluating’ and setting up mini trials in schools. This reconsidered role will be quite different from what I had witnessed during the ethnographic study, when their role was to facilitate the research engagement of all teachers in the school.

Enquiring

Although Mr Research favoured RCTs, both when engaging *with* research and engaging *in* research, his Research Lead Training course was described as enabling ‘enquiry-based practice’ in the flyer. Teachers enquiring for themselves was a practice that Ms Deputy was keen to promote. On the first day of the school year, she spoke about how she hoped that teachers would find their own answers throughout the year as she did not think they were ‘getting anywhere with courses’. She referred to the Standard for Professional Development (DfE, June 2016) but added that CPD should be personalised as well as based on evidence. As the school’s CPD consisted of teachers enquiring about a problem pertinent to their practice, rather than relying upon external CPD providers, it was her hope that they would achieve ‘gold’ in the Teacher Development Trust’s CPD audit.

The subject leader of maths, ‘Ms Maths-Lead’, shared at the conference in July 2016 what she had learnt from engaging in research that academic year. She called her project an ‘experiment’, which sought to enquire whether a change in the order of curriculum delivery would benefit pupils. Based upon the theory of a ‘shuffled’ approach to curriculum design that she had read about, her intervention involved merging schemes of work so that topics are taught alongside each other rather than consecutively. She referred to evaluating results and measuring impact, which she did by using a control group who did not receive the intervention of a change in curriculum design. Rather than pupils being randomly assigned to the intervention or control group, the two classes were made as equal as possible in terms of academic ability, demographics, socio-economic background etc. as recommended by Mr Research.

Ms Maths-Lead presented at TaRC how staff were keen to hear the outcomes of her research, which included pupil and teacher learning. She presented attainment scores and qualitative data from observations to highlight different strengths and a ‘noticeable difference in their [the pupils’] mindset’, though she did not calculate effect size as teachers were advised to do in the following academic year when I was conducting this study. She presented her ‘experiment’ as a success, not because the intervention group had achieved higher test scores than the control group but because of her own learning that took place during the process. Ms Maths-Lead also noted that a shuffled approach, whereby curriculum topics are taught simultaneously within each week rather than in consecutive half-terms, does not always work in practice due to bank holidays etc. meaning that some weeks are shorter than others. Both groups progressed, though, with Ms Maths-Lead speculating that this was because the equal grouping of pupils deemed necessary for the trial resulted in a change of atmosphere. In the following academic year, therefore, her research focus was mixed-ability groupings. Inquiry in this case was ‘both method and outcome’ (Cochran-Smith and Lytle, 2009, p.149).

Also at TaRC, Dr Pico concentrated on enquiries that have clear hypotheses that can be tested, rather than the unintended outcomes that can arise. He advised asking ‘foreground questions’ and having a comparison (i.e. to validate the hypothesis) in a question was said to be better. Mr Research, in his first Research Lead Training, repeated this almost verbatim, saying that research is about ‘turning uncertainty into an answerable question’ with quantitative data. To exemplify this, he used the formulaic ‘if I do X there is a Y% chance that, on average, Z will happen’, where ‘Z’ is preferably higher examination scores.

In reality, it was not only attainment data that were gathered but pupils’ values were also taken into consideration, though in the form of quantitative data. Dr Pico’s self-assessment tool based upon the document ‘Evidence-based Medicine’ highlights how pupils’ values should be taken into consideration but does not explain how these are to be gleaned. Ms Deputy advised collecting feedback from pupils via surveys, which Ms PE-Research intended to do to supplement the assessment data she was focusing upon. Ms PhysEd also used surveys to collect qualitative data of why they felt the way they did about single-sex or mixed PE classes.

Trialling

Just as RCTs were favoured by Mr Research when appraising existing research, he also encouraged teachers to use a similar research design when engaging *in* their own research. What teachers referred to as ‘trials’ varied in the kind of evidence generated, with some teachers *trying* something out and reflecting upon it rather than *trialling* in a formal sense.

Mr History-Lead’s presentation at TaRC was entitled ‘Effective feedback and marking strategies’ and included the subheading ‘Transforming feedback to students through a variety of trialled strategies’ so he clearly identified what he was doing as ‘trials’. Unlike the other presentations where more tangible evidence was shared, it was anecdotal evidence of the outcomes of this assessment method that was offered in this presentation. Mr History-Lead ended his presentation by saying that he will continue to trial it for the rest of the year and next academic year, when my ethnographic study was conducted, it would be his research project. I learnt more about his trials when Mr History-Lead presented at a Breakfast Jam, although it was anecdotal evidence again that was shared. What Mr History-Lead appeared to be doing was *trying* strategies but not necessarily formally *trialling* strategies in the way that was advocated using the PICO process with, for example, a comparison group.

Other teachers can be said to have been ‘trialling’ interventions in a more formalised way as they felt that this produced more tangible outcomes that can be used to justify practices. Ms PE-Research at TaRC said she was trialling apps because there are ‘so many apps and they’re expensive so need research to justify cost’. Ms English-Research, in an interview, also said that she felt that she needed to quantify the effects of her trial to ‘sell the idea to others’, even though these calculations were considered beyond her subject specialism expertise as ‘especially being an English teacher... I don’t know... spreadsheets’. The spreadsheets she referred to were used to calculate effect sizes, as explained in the initial whole-staff briefing at the second Learning and Research Hub, in which Ms Deputy explained data collection and analysis. She explained that there is a Microsoft Excel spreadsheet template on the shared area of the school’s computer network, adding that ‘the maths isn’t too difficult’. Ms Deputy advised that there should be a ‘post-test’ i.e. a test given at the end of the intervention to assess progress and these results should still be written up even if there is no difference. If there is no real conclusion to draw from the trial, Ms Deputy informed teachers that results should be put into context to explain why, which reiterated Mr Head’s reassurance that it was not the expectation that the results from the trials they would

always be positive. For further reading, Ms Deputy signposted reading on effect sizes on the EEF website which is ‘a couple of sides of A4 so not too lengthy’.

To quantify outcomes, trialling an intervention with one group of students and measuring differences with another group was promoted at SRS. Dr Pico advocated the use of a comparison group at TaRC and was also stressed at the school’s first INSET day that year. At Research Lead Training I, Mr Research explained that the first two year groups of the secondary school (Years 7 and 8 in England, ranging from ages 11-13) are divided into parallel groupings. For them, this meant that there was an equal number of high, middle and low attaining pupils, young people with SEND, English as an additional language (EAL) etc. to create ‘like-for-like’ groups of participants in each sample. This structure was to allow teachers to try a strategy with one class and compare the outcomes with the other class to detect whether the intervention was worthwhile. Although frequently referred to as randomised controlled trials in SRS, groups were not randomised so are more accurately quasi-randomised controlled trials.

When Dr Science-Lead explained to the two attendees at her inter-school meeting that classes in SRS have been split to facilitate what she labelled as RCTs, Ms Deputy from Alliance High suggested that sets four and five could be compared as there is an overlap in ability; the only difference she perceived was that set 5 study animal care. Dr Science-Lead did not condone this comparison and suggested that the control and treatment groups could be within one class, which the other attendees did not seem too keen about. This kind of epistemological discussion was also found by Kushner et al. (2001, p56) who noted that ‘where there were cross-Consortium teams working on a common theme there tended to be a sustained reflection on methodology’. It is not known whether Dr Science-Lead’s ideas were put into practice as access to further meetings were not granted. Ms Spanish at SRS, however, did not see a problem in trialling her speaking intervention with a group that was not an exact match to the control group. This is reminiscent of a report by Maxwell et al. (2015, p.33) which found that ‘multi-strand collaborative R&D can, in some instances, operate without commonly agreed approaches to data collection and analysis across the schools, which may reduce the robustness of the enquiry’.

Some teachers anticipated issues with conducting a quasi-randomised controlled trial. When staff dispersed into departmental discussion groups at the INSET day, the use RCTs to collect data was discussed in the maths department, to which I was attached for the morning.

This research approach was raised as some teachers thought that conducting an RCT would not always be possible. Ms Maths-Research suggested switching the ‘control’ and ‘treatment’ groups after the Christmas holiday and it was also suggested that the same trial could be used to test different outcomes such as effort.

There were mixed messages about whether trials were required to measure quantitative data such as test results. Ms Maths-Research told colleagues at her Learning and Research Hub that they are not required to conduct an RCT and pairs of teachers could observe each other and use observation notes as evidence. At another Learning and Research Hub, Ms Deputy reiterated the importance of observation in the research process. To do this, IRIS software, where teachers wear a camera to record a lesson for later scrutiny, was recommended but there was no suggestion that this was compulsory as Mr Research had said during the INSET day. Ms Deputy also explained how LS (see 2.1.3) is linked to Learning and Research Hubs and feedback from LSs are used as part of the PICO write-up and conclusions. She called this ‘peer feedback’ and said that this was achieved by members of Hubs observing each other and commenting upon the work of students, as well as supporting each other’s progress in Hubs.

Lesson observations are common in the teaching profession but using this method when engaging in research was debated at SRS. Dr Science-Lead, in her presentation at TaRC started with the various pedagogical strategies she had tried that had not worked, using both departmental and senior leaders’ observations as evidence for this. Professor Research-School’s presentation at TaRC, however, had warned to be ‘very cautious’ with using lesson observations to determine whether ‘teaching is working’, preferring ‘high-quality assessment’ and student feedback to be used as proxies. There must be a ‘check for bias and confounds’, though, and ‘validated instruments’ should be used. This was echoed in Ms Maths-Research’s blog, which warned ‘there is a heck of a lot of bias that could creep in here’. She told me that she personally likes measurable comparisons as a mathematician.

Although a comparison was needed for appraisal as the PICO structure must be used, it can be inferred that Ms Deputy did not fully embrace this. A visitor from another secondary school who was interested in the research engagement of SRS for her own school attended one Learning and Research Hub and Ms Deputy showed her the department improvement plan (DIP) template. She explained that teachers’ PICO questions need to relate to this DIP (the documentation for which had been constructed by Mr Research) and should be

investigated using an RCT. In the write-up template she had formulated, however, Ms Deputy had added 'if applicable' in parentheses after the 'control group' element of the PICO structure, implying that the quasi-randomised controlled trial structure recommended by Mr Research was not compulsory. Interestingly, when presenting the PICO process at the RoW conference, she referred to the 'c' in PICO as 'cohort', not 'comparison', implying that engaging in research for her was more about contextual nuances, which, according to Coldwell et al. (2017), RCTs simplify.

There is clearly an interest in using RCTs in education, as demonstrated by Torgeson and Torgeson's (2013) guide for teachers wanting to conduct their own RCTs and Churches (2017), who has a book of case studies of teacher-led RCTs. A representative from the EEF at TaRC also referred to this research method, saying that the 'Research Use in Schools' round projects are piloted before they are evaluated via RCTs. SRS was later part of one of these national trials, as detailed next.

Conducting a national trial

Towards the end of my fieldwork in the 2016-17 academic year, SRS was awarded funding from the EEF to scale up Ms English-Lead's original intervention that had been trialled at the school and wider alliance over the last two years. The intervention was presented at TaRC by Ms English-Lead, who had been through the cycle of *re*-searching, engaging *with* research, engaging research and engaging *in* research. Ms English-Lead's presentation started with a list of reasons for wanting to try something new, which exemplifies the reflection that SRS's research engagement encourages. The topic of research chosen was inspired by the experiences of marking the work of students preparing for GCSEs and she told delegates that the intervention to be trialled was based upon a review of marking by the EEF. The outcomes from Ms English-Lead's trials over two academic years (2015-16 and 2016-17) in SRS and other local schools were thought by the EEF to be positive enough to justify a scaled-up version in the form of a national RCT.

Ms English-Lead explained more about this larger version of her trial at ResearchED and the RoW Conference hosted by the school. As these events occurred during the course of the ethnographic case study, data pertaining to Ms English-Lead's research engagement from my field notes are able to be presented here. Hers was one of five projects selected out of 200 applications to be trialled from September 2018 for two years, with results being published in

the following year. According to the recruitment flyer, the ‘evidence-based approach, rooted in effective educational research, can help to reduce workload in schools’ and hoped to have a ‘measurable impact on student outcomes’.

For the national trial, researchers from a university were collecting the data so it is questionable whether this can be regarded as engaging *in* research, although this is how it started when it was a trial in the school. Coldwell et al.’s (2017, p.8) study found that ‘more research-engaged schools were leading or taking part in external research projects’ but in the case of SRS, it appeared that they were facilitators rather than principal investigators, though Mr Research told potential RLs at Research Lead Training II that ‘this school is attempting a three-year trial’. A representative from the EEF at TaRC suggested evidence hubs as a way of disseminating evidence, bridging evidence and practice and preparing innovative approaches for trial. The reason for this strategy is that the uptake of research is social so schools listen to schools, though Brown and Zhang (2016) would disagree.

Funding for research has been seen as a barrier in TSs (NCTL, April 2014), although extra funding is allocated to TSs for this. Murray (2016) has intimated that research funding in England goes to TSs as opposed to universities and Mr Research corroborated this sentiment at the INSET day when he referred to the EEF funding schools directly to carry out research rather than universities (see Whitty, 2016, for researchers adapting their practice to tap into this resource). Maxwell et al. (2015) found that HEI support helped with the practicalities and, if appropriate, undertaking aspects of the research and, linked to this, national project funding. At SRS, the school had applied for funding from the EEF and this led to them working with academics from a university, though the research seems to have been commandeered by them rather than the HEI having a supportive role.

Ms Deputy had explained to me that they were applying for EEF funding for a trial but they were ‘still working out what the role will entail’. It later transpired that the school’s role would be to recruit schools that would be randomly allocated into the control or intervention group and to train the intervention schools in the marking strategy. Goswami and Stillman (1987) thought that teachers would be the new researchers due to it becoming harder for researchers to access schools. Now, TSs and RSs can be seen as exploiting other schools to provide accessible laboratories for researchers to revert back to the traditional way of research where teachers have passive roles as the participants of researchers and the consumers of the ensuing evidence. Although the classroom strategies studied by the RSN are

created by staff at schools with this status, the teachers' involvement is merely operational in recruiting other schools to be involved in RCTs and it is still researchers who produce evidence.

At ResearchED, Ms English-Lead introduced herself as 'leading' the national trial, but went on to explain that it is being evaluated externally by a team at a university. What she called the 'evaluation team' had produced the Frequently Asked Questions (FAQs) document that was distributed at the conference so it can be inferred that they were the principal investigators, even though Ms English-Lead saw herself as taking the lead in the research project. This FAQ document stated that the independent evaluators work within their university's code of practice and BERA ethical guidelines so the EEF trials adhere to a strict ethical framework, whereas the ethics of the trials in SRS can be considered dubious, as explored next.

Ethical considerations

Cain (2015) studied a school that, like SRS, sought to measure the impact of an intervention via comparisons with a control group, raising ethical issues. The practice of targeting certain pupils for intervention at the expense of others was discussed by teachers in Cain's (2015) study, though were not resolved. Mr Deputy, at Research Lead Training I, told attendees that the ethics of school trials was questioned by governors but it was considered more ethical to try innovations first before rolling out wider. He also explained that the 'control' group benefit from the intervention if it has been deemed successful.

Mr Deputy also explained that no consent forms were required as 'teachers are always doing new things' so it is just part of their schooling. There were certain groups of young people, however, that were explicitly excluded from participating in trials, implying that some of the innovations being trialled would not have been considered standard practice and did, in fact, involve more risk than teachers usually take in their practice.

Students in Key Stage Four were not involved in trials as they are preparing for their GCSE examinations. Ms English-Research explained at her Breakfast Jam that she had trialled her vocabulary intervention with Year 9 in the previous year but it was not her main trial this year as she did not have any Key Stage Three classes to trial it with and it would be inappropriate to try it with Key Stage Four. The NQT she is mentoring, therefore, is trialling the intervention with their Year 7 class, perhaps because there is more scope for risk in this

year group whereas trialling an intervention in Key Stage Four could jeopardise their important examinations.

Even in Key Stage Three, some young people were not involved in trials if it was considered likely that they would later choose to study for GCSE the subject in question. Although Ms Spanish's idea was formed to help students studying for the new GCSE, the pupils she trialled this with were unlikely to benefit from the intervention in this particular examination as she admitted that not many of them were interested in taking Spanish at GCSE. She said she 'would love to trial this with set one or set two but at the time I was worried' as there was a higher chance of them choosing Spanish for a GCSE option, so it was thought too risky to focus on speaking only.

Ms Deputy had constructed a template for teachers to use when writing up their research project and this included the prompt 'what are the anticipated risks?', which I had interpreted as 'ethical risks'. Ms Deputy explained at the RoW Conference, however, that this prompt referred to the success of the trial and what might impede progress, encouraging each teacher to explain how they were planning to deal with these.

At ResearchED, Mr Research told delegates that students were not aware that they had been placed into parallel groupings for the enquiries that the teachers of Research High complete but one teacher had revealed this information to her students. Ms Maths-Lead shared with delegates at TaRC that she deliberated whether to tell the young people about their participation in her trial, revealing that she decided she would inform them of what they were involved in. The students were 'on board' with participating in the research as they could see what they were trying to achieve as a department and they could see the point of the research.

Enablers and constraints

One constraint of teachers engaging in research was the varying degrees of co-operation amongst the teaching staff at SRS. A teacher at Dr Science-Lead's Learning and Research Hub announced provocatively that 'my research has failed', perhaps hoping for a debate about whether researching was worthwhile. She was reassured by Dr Science-Lead, however, that this was ok and that it is still useful to know about what did not work and I was able to corroborate this as a participant observer. It seemed that this was not the response she was hoping to provoke as she left, leaving just Ms English as the other members of the Hub were

working independently. It seemed that this teacher, who was a science teacher, had not fully embraced the research culture of the school, similar to the ‘pockets of resistance to undertaking or getting involved in research’ found by Hammersley-Fletcher et al. (2015, p,29). This was a constraint that Ms PE-Research had anticipated at TaRC when she said ‘one factor to consider’ was ‘getting staff on board’. Coldwell et al. (2017) found school leaders’ support for engagement with research to be the most important catalyst for evidence-informed teaching but that even in the highly-engaged schools they evaluated, there were discrepancies in the practices of individual staff members, which is what the RLs at SRS were supposed to encourage.

Initially, the only teachers at SRS who were research engaged were middle leaders so the constraining factor of gaining support for research was less problematic. Ms Deputy at the RoW Conference explained that the idea to be research engaged was initially ‘‘top-down’ but with crucial ‘buy-in’ from middle leaders’, referring to subject leaders and RLs chosen to pioneer research at the school. The novelty of middle leaders being selected by senior leadership enabled engagement in research that cannot be replicated when rolled out to all staff. Some teacher-researchers, therefore, were not as enthusiastic as others in conducting their own research, although I was steered towards the latter and only caught glimpses of the former.

The importance of teacher agency was also alluded to by Ms Deputy at RoW as an enabling factor for teachers engaging in research and this was linked to the reduction of workload. It should be noted, however, that workload was the focus of the conference so the link might, therefore, have been presented in such a way as to raise the profile of the school’s research. Ms Deputy explained how staff research a topic pertinent to their own practice rather than senior leaders dictating what their CPD should focus upon. Foreman-Peck and Heilbronn (2018) have argued that AR can be democratic, allowing teachers to explore issues pertinent to them that might contradict normative practice. This was the case at SRS, although a prerequisite was that research projects must be based upon two to three priorities (dependent upon department size) set by the head of department. Similar priorities are grouped into cross-curricular hubs, with each member of staff taking ownership of that priority for a year as part of their appraisal. Again, to limit workload, she said this is restricted to a two-sided template and staff are given time to complete this report. Everything is built into directed time, not time allocated for planning, preparation and assessment (known as PPA time) and teachers are given more time if they ask.

I observed teachers' time being carefully managed by the SLT so as not to overstretch staff and teachers had a degree of freedom in how they used the time that had been allocated for research. The first Learning and Research Hub that I was permitted to attend was on 29th November 2016 because most teaching staff were required to attend a briefing all together so was deemed useful for me. Teachers who had a Year 11 tutor group, though, did not have to participate as their directed time had been used before the school day. Ms Deputy announced that the overall briefing would be kept short so as not to detract from individual work, that teachers were then able to do in their own way, even at home. A timescale was also provided to teachers at this Learning and Research Hub, which outlined when Hubs would meet to discuss key milestones; in this way, Ms Deputy was enabling research by directing teachers but not constraining the teacher-researchers by setting universal deadlines that might not be conducive to the individual projects taking place.

For Ms Deputy, time to collaborate and share departmentally and cross-curricular was an important function of the Hubs, which feed into appraisal. At Ms Maths-Research's Learning and Research Hub, the group discussed the effect their interventions were having and Ms Maths-Research later told me that talking in hubs is an enabler for the research process. The conversations that members of a hub have can also be used in the appraisal document as part of performance management according to Ms Deputy. Mr Business said of these appraisal reviews that 'there is that culture here that you know if it doesn't go well, reflect on it, even in the reviews' so they are able to take risks.

Mr Research also explained at ResearchED that research was embedded in the school culture and this was due to the adapted school structures that enabled research. He named such changes as 'research' appearing on teachers' timetables as part of their directed time and adapting the teacher appraisal system. Making research part of teachers' appraisal was intended to 'normalise it' and linking it to departmental improvement plans made them more focused according Mr Research (see also Coldwell et al., 2017).

Another enabler of research pertains to the status of the school, which allows staff to take risks in their practice in order to research the impact of a novel way of teaching. Ms Deputy, after a Breakfast Jam session, told me she was surprised that her friends teaching at other schools do not know about conducting trials as a way of evaluating practice. She went on to say that it is perhaps because SRS can 'relax when it comes to Ofsted' as they had been deemed 'outstanding' in their last inspection so were able to take more risks in trialling

strategies. When I interviewed ‘Ms Spanish’, she told me of how she would have tried her chosen intervention as part of her general teaching practice anyway but was glad of the opportunity to be able to research it more formally rather than just reflecting upon the perceived efficacy of this initiative (re-search). Ms Spanish said she was grateful that the school has ‘pushed me to try new things’, reminiscent of Dr Pico’s self-evaluation of evidence-based practice, which included challenging oneself to develop constantly. This can also be seen in the latest Ofsted inspection, which described the school as having ‘a culture of continuous improvement’. Of course, this does not necessarily equate to engaging in research; it is, therefore, the RLs who help teachers to evaluate the impact of their risk-taking in the form of a research project. For other teachers, however, it appears that taking risks is not part of their ordinary practice. In these cases it is the duty of the RLs to help others take risks with their pedagogical practice, as explained to me by Ms Deputy when she introduced the role of the newly-appointed RLs to me at the start of my time at SRS.

This risk-taking, with or without the evolution to research projects via RLs is clearly not possible in all schools. At Dr Science-Lead’s inter-school meeting, attended by a maths teacher and science teacher (also deputy) from Alliance High, the latter spoke of how SRS are ‘in an enviable position’ as they are not ‘under the cosh’ of Ofsted as Alliance High are. Being more experimental was also linked to a high Ofsted grading by a participant of Coldwell et al.’s (2017) study and conversely, accountability frameworks were found to be restricting by Kushner et al. (2001).

As well as the deputy from Alliance High feeling that they could not take risks due to their current status with Ofsted, she referred to other barriers to the kind of research engagement that Dr Science-Lead had been describing, which did not appear to be a problem at SRS. She described Alliance High as an expanding school with more than half of the pupils with SEND that had been forced into accepting academy status following the poor Ofsted inspection. There is also a high turnover of staff and currently a staff shortage, which means that senior leaders like herself have a heavier teaching timetable than they would do usually. It can be surmised, therefore, that a research culture similar to that in SRS might not come as easily for a school with competing demands on teachers (Maxwell et al., 2015). This was not the case at SRS as they can afford (through TS and RS funding) to appoint middle leaders as RLs with a reduced timetable to focus upon research.

Despite the belief that teachers at Alliance High cannot take risks in the trialling of interventions due to socio-economic factors, the maths teacher at the meeting said that he felt able to try something new due to the changes to the external examination that his students would be subject to. He also commented that the new head of science would be willing to try a strategy based upon SRS's research. He elaborated that because the GCSE assessment was new at the time, there was no precedent as to how the syllabus should be taught. It was also his belief that the new head of science would be willing to trial the tracking strategy devised by Dr Science-Lead. This reiterates the sentiment at the beginning of this subsection that it is not only the support of senior leadership that is an enabler of engaging in this kind of research, but the interest of middle leaders also. Teachers critiquing why an approach from research would not work in their context due to socio-economic factors was also found by Hardy (2016) but seems to have been overcome in this TSA through the interactions of colleagues.

4.2.5 Concluding thoughts

It is evident that the research practices of SRS were facilitated by Mr Research's appointment of middle leaders as RLs. On a day-to-day basis, Ms PE-Research presented the role of RL as:

- a) supporting and leading staff in their research;
- b) sharing latest research;
- c) monitoring how strategies are being developed; and,
- d) networking locally and nationally.

Research engagement even became part of performance management of teaching staff in the 2016-17 academic year. Mr Rise advised at TaRC that 'school leaders need to offer time and good CPD for research evidence to be integrated into our work', which SRS did provide. How far research evidence was integrated into the work of teachers at SRS, however, seems to be synonymous with how 'research evidence' is understood. Some teachers relied upon evidence from the meta-syntheses of the EEF to inform their interventions whilst others got ideas from more informal means such as anecdotes. Similarly, their own collection of evidence in their research consisted of a range of data: quantitative in the form of comparable test results and qualitative in the form of free-text answers in pupil

questionnaires or even anecdotal evidence of the teacher's opinion on the impact of their intervention.

There appeared to be a discrepancy between how Mr Research and Ms Deputy understood research, which is reminiscent of Gu et al.'s (2015) conclusion that the majority of the TSAs they studied did not yet have a consensual understanding of R&D in their school and/or alliance. At SRS, Mr Research focused more upon engaging findings *from* research and engaging *in* research. This was evident in Mr Research's initial template for teachers to use when writing up their research project for their performance management review. He had emailed this to me and asked me for feedback. It started with the 'PICO question', then was divided into two parts, one for the spring and summer terms, with sections for, 'Outcome of control group', 'Outcome of intervention', 'Preliminary Evaluation'. As I was compiling my literature review at the time, engaging *with* existing research was at the forefront of my mind. I replied with 'the only thing I could suggest would be linking the interventions or even the evaluation methods with existing research'.

I had a similar request for feedback from Ms Deputy, who sent me an email listing the prompts she was intending to include in the write-up document for the research projects of the teachers. From this, it can be inferred that Ms Deputy's understanding of research did incorporate engaging *with* existing research as it included 'what does the evidence say about this approach?', with a prompt to 'cite reading'. This may, however, have been for my benefit and it cannot be claimed with any certainty that the presence of myself as a researcher did not affect the way in which the school's understanding of research evolved during my time there. This will be further explored in the reflexive account of 6.3.

4.3 Mixed-methods Case Study

This section is shorter than the others in this chapter as it presents findings from a case study that was intended to be evaluative for Phase Three but was adapted to form a brief mixed-methods case study. It complements the ethnographic case study of Phase Two as it was conducted in a TS with Research School status but in the primary sector. It is, therefore, referred to by the pseudonym Primary Research School (PRS). Findings from this chapter also mirror the theoretical framework and are structured as such, starting with an overview of the research context.

The deputy head teacher and Director of Research at PRS, pseudonym ‘Ms Research’, organised research seminars delivered by academics and it was the impact of these that was initially intended to be evaluated. Although this was not able to be fulfilled, the perceptions, practices and potential of research engagement in this school were still able to be gathered from:

- a) quantitative and qualitative data from the questionnaire about the perceptions of research engagement;
- b) observations of the research seminars to gain understanding of how research engagement was practised;
- c) document analysis of web-based materials produced by the school: website, blogs, newsletters, advertising literature of the school’s research activities to ascertain how the school presented these;
- d) an interview with the school’s Director of Research in order to further question the rationale behind the school’s research engagement; and,
- e) observations of Ms Research’s presentations at three conferences in which she explained the school’s research practices, including more information about the research seminar series to which I was granted access.

What is presented here, therefore, is a case study using mixed methods to gain an understanding of the research engagement in this school. Again, findings are structured using the theoretical framework adapted from Carr and Kemmis (1986) to explore the different elements of research engagement: reflecting upon one’s own practice, using findings from research, engaging critically *with* research, and engaging *in* one’s own research.

First, there is an overview of the school’s context in relation to research engagement. Although Ms Deputy is the Director of Research for the whole MAT of which the school is part, my research just focused upon RPS. When interviewed, Ms Research explained that she believed R&D had some part to play in the school’s journey from near closure following a poor Ofsted inspection to being judged ‘outstanding’. This is corroborated on the ‘Our Research School’ page of the website, which states that ‘evidence-based practice [is] central to the school’s transformational improvement journey’. Even before being awarded RS status, the school had ‘sustained a deep engagement with research and research evidence for many years’ and this was linked with being ‘designated as a National Teaching School in 2014’.

Teaching School

On the school's website, there is a diagram, entitled 'Research and Development: Building an self-improving system' [sic.], which explains how the school addressed the R&D part of its TS remit at a time when it was a discrete entity. One of the '5 Core Areas' presented in this diagram is 'a research rich environment' where 'current research and thinking is widely accessible and discussed'. Linked to this, another core R&D area is 'research literacy for all', the intention being that 'all staff should have the skills and confidence to engage critically and evaluate research', but it was not explained on the website how teaching practitioners should acquire this research literacy. Another one of the five core areas of R&D presented in this diagram is 'involvement in research', which may involve 'wide scale national research projects exploring how research findings can be effectively translated daily practice' [sic.] and 'small scale practitioner led projects generated from within the Alliance which reflect local priorities'. This practitioner-led research is also referred to in a PRS blog, which asks readers to contact the RS if 'you have an idea or a question that you think is worth looking into'. Linked to this are 'opportunities and motivation to engage in research and enquiry', which is defined as 'lesson study, action research, case studies, systematic review of current literature, communities of practice'. There is then the 'dissemination of research' via 'website/ Twitter/ blog, shared forum, peer review system for the publication of practitioner enquiry, support for publication, conference'. The only research practices of PRS that I was able to experience consisted of:

- a) disseminating findings from research via an e-newsletter;
- b) voluntary after-school research seminars, in which academics presented their research to teaching practitioners;
- c) encouraging involvement in large-scale research projects; and,
- d) supporting teachers to conduct their own trials.

Research School

The webpage 'Our Research School' also describes how RPS's new status as an RS brings together their teaching school alliance and MAT 'as a resource for schools bridging education research and everyday classroom practice'. The RSN is described on this webpage as being scheme supported by a £2.5 million grant awarded to the EEF and the Institute for Effective Education (IEE). Like Teaching Schools now, RSs have a tri-focal remit: training, innovating

and communicating. These elements are present throughout this chapter as they all have a part to play in the theoretical framework of *re*-searching, engaging findings *from* research, engaging critically *with* research and engaging *in* research.

4.3.1 Re-searching

Whilst looking again at one's own practice (termed 're-searching' here) was not a focus for the school as a TS or RS, it was alluded to in the data gathered so will be presented in this short section. Ms Research was quite cynical of teachers reflecting upon their own practice and calling it 'research' as this practice does not add to the overall knowledge base as the RS agenda advocates 'potential contribution to the knowledge base', as specified in the RSN's Innovation Evaluation Project guidelines displayed on the PRS website. Teachers reflecting upon their practice, however, was mentioned by delegates at the seminars held in RPS but was not identified as 'research' as it is in some of the literature (Goswami and Stillman, 1987; Saeverot and Kvam, 2019).

What teacher reflections *can* be, according to Ms Research, are forms of data that may be useful for teachers wanting to follow what she called the 'evidence-informed agenda'. She explained in the interview that she preferred this term rather than 'research', making a distinction between published research that is considered 'robust', therefore useful to others, and evidence that is generated informally and seen as localised. I have, therefore, included this concept here as '*re*-search' rather than more conventional 'research'.

The data that are generated by teachers re-searching their practice may be useful as teachers should 'collect data from many sources', not just research according to Ms Research's blog. In Ms Research's five-part blog entitled *Evidenced and Informed*, she proposed that 'anecdote is evidence' that is 'very rich'. She also advised using 'group observation of teaching – with a focused lens for enquiry', implying that reflecting upon observations can be identified as evidence. Ms Research mentioned at a ResearchED conference that PRS had a one-way observation mirror installed in one classroom to examine a lesson forensically without the class being able to see the observer. Re-searching, therefore, was practised at PRS, though was not classed as research, but rather as useful evidence to inform practice according to Ms Research. Similarly, the use of LS, whilst identified on the

PRS website as a ‘research method’, was described as focusing upon the learning of the teaching practitioners involved, rather than yielding findings that may be relevant to others.

The distinction between ‘research’, which is useful to others, and ‘evidence’, which can be gathered by teachers in informal, reflective ways, was epitomised for Ms Research by the grassroots conference organised by teachers, ResearchED. In the interview, Ms Research shared her frustration that ResearchED was ‘never really about the researchers talking about research, it was about teachers talking about stuff’, which she obviously did not consider ‘research’, though still useful. Ms Research herself was a frequent presenter at this teacher-led conference, two presentations from which are included in this case study. Rather than presenting her own reflections, or those of others, as ‘research’ to be used by others, Ms Research focused upon implementation science and presented interventions used in her school that were based upon research, thus fulfilling the ‘communication’ strand of the RS remit.

Even when the school had tried a form of re-searching via LS, the blog post on this initiative focused more upon presenting the evidence-base behind this choice, detailing how the school sought the advice of a professor from a local university, who visited the school with scholarly examples of LS in academic works. Another blog post stated that ‘having looked at the evidence into research use, we think that the Research School model is the best way of supporting this effectively’. Engaging findings from research was clearly more of a focus for PRS than re-searching, as is demonstrated in the next extensive section, which includes how RS status enables this form of research engagement.

4.3.2 Engaging findings from research

Each part of the tri-focal remit of the RSN (communicating, training, innovating) pertains to engaging findings from research. This is explicit on the webpage, ‘Sector-Led Support for Evidence-based Practice’ [sic.], which explains how, overall, the RSN supports teachers ‘to make better use of evidence to inform their teaching and learning’. Hammersley-Fletcher et al. (2015) found that teachers did not often consult academic research but when they did, their findings from this research were rarely put into practice. It is the RSN’s mission to enable the findings from research to reach practice with ‘many evidence-based resources and

tools available to help improve teaching practice'. The RSN's aim is to 'get research into schools in ways that really make a difference in the classroom' by:

- a) 'encouraging schools in their network to make use of evidence-based programmes and practices' (communicating);
- b) 'providing training and professional development for senior leaders and teachers' informed by evidence (training); and,
- c) 'supporting schools to develop innovative ways of improving teaching and learning' based upon evidence (innovating).

PRS fulfils the training element of the RS remit by offering courses on research-informed strategies for teaching practitioners, 'using the evidence of what works for CPD' according to the RPS blog. The RPS newsletter specified that 'courses are designed to support staff to engage with the latest research evidence and provide a model of how this might be translated into effective practice'. In the document, *Professional Development Opportunities 2016-17*, several courses are listed for teachers from local schools to attend but only two appear to be evidence informed. One of these courses, which costs £400 + VAT for a teacher and TA to attend, is 'Inference Training', a method of improving reading comprehension. The strategy was 'included in Brooks (2007) *What Works Well for Children with Learning Difficulties*'. This book is also cited when describing another course, 'FFT Wave 3', which is training in a literacy intervention. The only other PD opportunity listed that appears to be informed by scholarship is the 'Which Book and Why' Event, which is billed as 'an exceptional opportunity for teachers to work with *Dr Sue Bodman* and *Glen Franklyn* from the International Literacy Centre at University College London Institute of Education' (italics in original).

Within her school, Ms Research explained in a presentation at a ResearchED conference that there is a 'menu of interventions', informed by evidence, for teachers to choose from at pupil progress meetings every six weeks if certain pupils are deemed not to be making progress in class assessments. In PRS's blog, it is explained that 'each school in our Trust has a slightly different menu according to what works' so context is clearly taken into consideration when engaging findings from research. As it is senior leaders who construct these menus, however, it is 'filtered' (Coldwell et al., 2017, p.26) communication of research to be used by teachers.

As the 'innovation' strand implies, PRS does not merely engage the findings from research passively but claims to be actively developing strategies informed by research. In

Ms Research's PowerPoint presentation at ResearchED there was a slide entitled 'Implementing Theory to Practice – *developing* interventions to support our children' (emphasis added). Ms Research advised those present not to 'buy' any commercial intervention packages, explaining that at PRS they rely upon the creativity and professionalism of teachers to create their own resources based upon the evidence-informed interventions found. This is what Ms Research referred to in her blog as 'intelligent adaptation' rather than 'faithful adoption' of strategies with an evidence base. Teachers, therefore, are not necessarily as passive in engaging findings from research as the theoretical framework based upon Carr and Kemmis (1986) suggests. Although there is no evidence to corroborate Ms Research's claim that her teachers do not passively engage findings from research, the variety of interventions adapted from research that were presented at conference does seem to indicate that this was prolific in the school and wider alliance.

In her blog, Ms Research stated that 'using research evidence... is a team sport', indicating that the ideal is to have teachers' input in the innovation of strategies based upon evidence from research; however, I encountered evidence that this is not always the case. At a conference hosted by the CCT, Ms Research explained to delegates that unpopular evidence-informed decisions are made by senior leaders that may alter the way teachers have operated for many years, implying that they are not consulted about the use of research evidence. This was seen even in the more research-engaged schools investigated by Coldwell et al. (2017, p.7), where senior leaders often asked 'what does the evidence show' when making decisions, therefore perhaps precluding the expertise of teachers, which also seems to be the case here, despite the presentation of PRS employing the nexus of both research and practice to innovate.

Ms Research's preference for research that yields conclusive evidence of a strategy's efficacy was evident from the start of my correspondence with her. For example, when I was emailing Ms Research to recruit the school for the evaluation phase, she asked what my research is designed to *do*, which implies that she was expecting it to be more utilitarian in having a tangible use rather than merely *understanding* research engagement, which is the primary aim of this doctoral research. Furthermore, in a follow-up meeting, Ms Research would only consent to the school's participation in the evaluation if it provided the school with research findings that were useful. In this case, Ms Research had wanted an evaluation of the research seminar series that had been started the previous academic year. She was happy for me to distribute questionnaires, therefore, as these would help to improve the

initiative, which was hosted by PRS after school but were ‘open to all’ and ‘free to attend’ according to the RPS website.

The five (out of the seven seminars in the 2016-17 school year) that I observed were eclectic in content and methodology. The first seminar that I attended focussed on research into ‘unconscious bias’, which, the researcher presented, we all have. From my own observations of the presentation, I would categorise it as theoretical. The second seminar I attended was on Dyslexia by an academic from a university on continental Europe who the flyer said was there to ‘talk about his research and expertise’. The seminar consisted mainly of the presentation of quantitative data and attendees were also given an article from *New Scientist* and a paper from *Pediatrics*. The next was on a scheme known as Shanghai Maths by a university reader, whom the flyer stated is currently involved in a ‘longitudinal evaluation’ of the initiative. Next was a seminar on the Early Years Foundation Stage by a professor, whose presentation drew heavily upon two papers of quantitative data from the United States that the professor was involved in writing. The next seminar was on English as an Additional Language (EAL) and consisted of qualitative data from two schools that the researcher had worked with. The final seminar was by a professor who presented ‘findings from a series of studies’ on exam pressure, which involved mixed methods.

One aspect that Ms Research wanted to know about the seminars was how useful participants thought the seminars had been in terms of the new ideas they gained from them and their application in the classroom. In the interview at the end of the study, Ms Research said that she knew some teachers who were pro-active after participating in a seminar, for example, some changed how they supported pupils with Dyslexia, though she acknowledged that impact from the seminars might not be felt immediately. Most respondents said they either agreed (23%) or strongly agreed (34%) that they had gained ideas to try out; furthermore, they could see how the abstract ideas presented in the seminars could be applied in the classroom: 43% agreeing and 28% saying they strongly agreed with this. Additional qualitative data gave more specific perceptions of the impact of this form of research engagement. One respondent from the Dyslexia Seminar stated ‘I can see how it could be applied to my school – whole school’, implying that it is not just practices in individual classrooms that could be affected by this kind of research engagement but whole-school policies.

It was not just the immediate practical impact of the seminars that Ms Research was interested in, however, as she also speculated that the seminars might enhance subject knowledge and/ or be useful for teaching and learning, so these were asked on the questionnaire. When asked about perceived impact upon their subject knowledge, 74% said that the seminars had ‘some impact’, with 17% indicating ‘a great deal of impact’. Ms Research admitted that some attendees at the seminar series do not value this more academic outcome and ‘want easy answers and something that they can apply in the classroom tomorrow’. This was apparent in the qualitative data gathered by the survey; for example, a participant at the Early Years seminar stated that they would have liked have developed their knowledge of ‘more practical things we could do to take back into the classroom’.

In terms of teaching and learning, the perceived impact of the seminars was slightly more positive but the qualitative data suggest some frustration that the seminars are not more geared towards teaching practice rather than theories of pedagogy. Participants believing that the seminars would have ‘some impact’ upon their teaching and learning made up 64% of delegates, with a further 23% indicating that their participation would have ‘a great deal of impact’. An attendee at the Shanghai Maths Seminar stated on their survey that they ‘would like to know more about how to embed in the classroom’ whilst another suggested ‘real life examples of how it would work in the classroom’ and one requested ‘more examples of how to actually apply it to teaching/ planning’.

Ms Research critiqued this desire for research to have immediate practical impact as being ‘evidence informed’, which she distinguished from the more preferable ‘evidence based’, defined as teachers creating new knowledge from their re-contextualisation of existing evidence. This is quite different to the literature, which presents ‘evidence-informed’ teachers as using both evidence and their own expertise to create new knowledge and ‘evidence-based’ teachers as passively engaging the findings from research alone (Coldwell et al., 2017; Brown and Zhang, 2016). Ms Research elaborated more in the interview, defining ‘evidence informed’ as ‘do this and you’ll be applying the evidence’, whereas being ‘evidence based’ means evidence permeates one’s whole practice, including new evidence generated by teachers during the process of ‘understanding in context’. Coldwell et al. (2017, p.22) identified three ways that research-engaged schools use evidence:

1. replicating pedagogy found to be useful according to research (i.e. engaging findings from research);
2. recontextualising the pedagogic principles from research; and,

3. being inspired by research to create new approaches to pedagogy.

Re-contextualising research and being inspired by research were encouraged in PRS and these practices can be identified as engaging *with* research, the focus of the next section.

4.3.3 Engaging with research

A blog by RPS states that ‘your local Research School will be more than happy to advise and help’ if there is ‘something you would like more evidence about’ so clearly encouraging engagement with research is a priority for PRS and other RSs. Research is disseminated by the RS in termly newsletters sent via email to those who have signed up but there is perhaps a danger here of research being selected to suit a particular agenda rather than encouraging teachers to engage with research more widely. The RPS website has a ‘Research Links Library’, which lists ‘links to important research reports’ divided into: overcoming disadvantage, teaching, leadership, reading and TAs. These reports are mainly from the EEF and government publications from the NCTL and DfE. There is also a ‘useful links’ section that includes links to BERA’S website (specifically the page about research in schools), teacher-led research movements, the National Foundation for Educational Research (NFER), the meta-analyses of John Hattie, the Institute of Effective Education at University of York and an EEF document about RCTs. Whilst this is a comprehensive list, it does lean more towards meta-data, with little scope for teachers to engage critically with the nuances of studies. It could, however, be argued that this might be out of necessity as these databases are in the public domain, whereas research papers are often still behind a ‘paywall’, even in the wake of the recent ‘open access’ movement. Ms Research was cognisant of this difficulty and during a talk at conference recommended the What Works Clearing House as a website that offers access to evidence from research, though again in the form of meta-analyses.

Evidence syntheses were promoted in the RSN and Ms Research herself, though she took a sceptical view of these. Although she recommended, for example, CUREE, in her blog, she stressed to readers that they should ‘always refer to the original studies’. She urged readers to ‘read with comfortable scepticism. Take the time to understand. Embrace the nuance.’. However, the PRS newsletter promoted the EEF as a way for teaching practitioners to ‘make decisions based upon reliable and relevant evidence (without needing to wade

through piles of journals and research papers)’. Ms Research was critical of this approach and said in the interview that in syntheses ‘nuanced details get lost in translation’.

Ms Research went into detail in her blog, *Evidenced and Informed*, as to how classroom practitioners should engage with research, albeit with quite a narrow definition of what is meant by ‘research’. She advised to check whether data have been published, rather than posted in the public domain via the internet, and that how these data have been gathered should be scrutinised e.g. number of participants and how these were selected. There was also a warning to readers of her blog to ‘remain sceptical (even more so when the research is by someone whose work you know and respect)’. Interestingly, she referred to research here as ‘the trial’, which shows her preference for the randomised controlled trial (Wrigley, 2018). Again, using the parlance of the RCT, she elaborated that it is important to know who had delivered the intervention, who it was compared to, timescale and the standardisation of the test. Ms Research’s blog also advised readers to look for limitations acknowledged and negative results. The blog then goes on to acknowledge that whilst it is ‘tempting to cherry-pick the bits you like and simply ignore the bits that you are not so comfortable with’, engaging with research means that ‘you have to consider ALL of it’. ‘Research’ in this sense, however, seems to be synonymous with RCTs, rather than any of the other research methods used in the field of education.

In her presentation at a ResearchED, Ms Research highlighted the importance of contextualising external evidence before putting it to use in practice, by taking into consideration one’s children, community and teachers. One head teacher interviewed in Coldwell et al.’s (2017) evaluation saw evidence-informed teaching as connecting external evidence with one’s own professional judgement to reflect upon teaching practice. Ms Research, in her blog, was keen to stress that findings from research conducted in laboratory conditions is not to be implemented without caution. She exemplified this by stating ‘the findings from the cognitive science lab might be clear – what that looks like within the context of each school is not’. When hoping to utilise findings from research, therefore, teachers need to take into consideration the culture of the research context and whether this aligns with their own workplace.

The PRS blog proposed that the RSN would ‘put the use of research into the hands of schools and practitioners’ and one way in which PRS enabled this was via research seminars. According to Ms Research in the interview, these offer a platform for ‘professionalism, a

debate... some teachers have gone away from seminars and... re-evaluated how they look from different perspectives'. According to Coldwell et al. (2017), research-engaged schools encourage teachers to challenge evidence and their own practice.

It was important, for Ms Research, to keep up-to-date regularly with findings rather than rely upon a static knowledge base, saying in the interview that evidence from research is not 'set in stone' but is always evolving. This was demonstrated in the seminar series when an academic who had already presented her work previously, returned to update attendees on her progress. Ms Research said of this 'that was really nice to invite someone back again to talk about where they're up to now because I think it highlights that recursive element' of research. In her blog, she stated that 'it is interesting and powerful to go back to the research', implying that classroom practitioners should not be satisfied with being the passive recipients of research during a fleeting course but should feel empowered to engage with research on an ongoing basis.

The seminars were intended to be mutually beneficial: for the researchers presenting and for the teachers attending. For the presenters of the seminars, they are 'an opportunity for educational researchers to share their work' and a way to 'explore the practicalities of translating their findings into effective strategies for the classroom' (as described in a PRS document entitled *Professional Development Opportunities 2016-17*). According to Ms Research's interview, the seminars she organised provided a 'solution for getting researchers in contact with teachers and saying this is my research and this is what I think it says'. For attendees of the research seminars, 'there is 'opportunity for questions afterwards', which demonstrates the discursive nature of research. Ms Research said 'what I really wanted, and still really want and we haven't quite got there yet, is for you know for the teachers to feel empowered enough to say yeah but it doesn't look like that in the classroom. To kind of have that sense of dialogue'. This is facilitating critique of research (Godfrey and Brown, 2018) but it appears that teachers do not feel confident to do this directly with the researchers themselves.

According to Ms Research, the seminars are not just about learning about new ideas but also a way of teachers investigating whether what they do is effective according to the research. This is similar to Cain's (2015) notion of teachers using research strategically. The academic who presented the seminar on reading pointed out that what they had witnessed in schools was not represented in the literature. The attendees, therefore, were directed to check

whether their own practice could be adapted so that it is supported by research. In a PRS blog also, it is stated that the alliance will ‘with intelligence and impartiality, use the best research evidence we have available to challenge existing practice’ but, as Ms Research pointed out in her blog, this ‘can be uncomfortable’.

Now that the seminars have been explored in relation to engagement with research, attention will now be turned to results from the questionnaire that pertain to this form of research engagement. First, the reasons for attendance at the seminars will be explored as the possible reasons that Ms Research suggested were mainly about engaging intellectually with research, rather than teachers wanting to attend the seminars in order to use the research findings passively. This is Godfrey’s (2016) idea of teacher professionalism, where evidence informs rather than dictates action. Furthermore, as Ms Research wanted to know about the impact upon the *attendees*, as well as upon their practice (explored in 4.3.2), questions were asked about their enjoyment of the seminars and whether they found the content interesting. These responses will be analysed next as they also indicate engagement *with* research rather than engaging findings *from* research.

Ms Research anticipated the following reasons for attendance: interest in topic, general interest in research, familiarity with a particular researcher, enjoyed last year’s seminars, recommended CPD and part of appraisal. Respondents were required to rank each option according to how important they were as a reason for attending. Overwhelmingly, respondents chose ‘interest in topic’ as their first choice (74%). This could be interpreted as teachers not necessarily being interested in research in general but the subject content of the seminars, which also explains the flux in attendance figures, ranging from four to in excess of 19. In the interview with Ms Research, she saw it as an achievement that people do attend, despite initial scepticism from a colleague when the seminars were first launched. She remarked that this shows the ‘researchly conduct’ of teachers, a phrase she had heard at a recent conference organised by the Chartered College of Teaching.

In the questionnaire, 51% of respondents said they ‘strongly agree’ that the content of the seminar they attended was interesting, with 36% stating ‘agree’ and from the comments provided, some participants were clearly interested in the research being presented and wanted to know more. One respondent who attended the Dyslexia Seminar said they ‘could have listened for another hour easily’. In the interview, Ms Research speculated that teachers may feel unsatisfied with their regular CPD and feel ‘there’s something I want to know more

about', which she called 'professional curiosity'. The Exams Seminar prompted one attendee to specify that 'I gained new ideas to THINK ABOUT rather than try out'. Similarly, participants of Coldwell et al.'s (2017, p.7) evaluation saw research as informing their thinking rather than changing their practice immediately. An attendee at the Unconscious Bias seminar commented on the questionnaire that the speaker 'really encouraged us to reflect on practices'. The enjoyment of the Dyslexia Seminar was that it was 'interesting to unpick some of the established 'myths' around dyslexia'. A respondent who attended the Early Years seminar, however, felt that the seminar was 'interesting but limited practical applications', implying that whilst most respondents took an interest in engaging *with* research at the seminars, there was still a desire to be able to engage findings *from* research.

Enablers and constraints

Whilst it was Ms Research's intention to encourage engagement with research, she acknowledged in her blog that 'being evidence informed and building an evidence base for your own school is easier said than done' so the barriers and enablers will conclude this section. The personal interest in research that staff at PRS have is a key factor and, perhaps linked to this, is its status as a TS and RS, particularly with regards to the resources that these accolades bring forth. The accessibility of research was alluded to throughout this case study, both in terms of teachers being physically able to access research findings as well as being able to access the meanings within the research that they do encounter, as will be explained first.

In her blog, Ms Research praised the accessibility of evidence: 'we are moving into an 'evidence golden age' for education. Never before has the research been more readily available or accessible'. She recommended that 'books/ blogs/ tweets by famous EduTweeters can be a good way of finding research to read' but in the interview she revealed how she thought that accessing research in this way is insufficient. The research seminar series, therefore, was one solution to expose teachers to research that is scholarly but accessible, not just to those present but to anyone as the materials are available on the PRS website and there are also podcasts of the seminars published on this platform, as she explained at a ResearchED conference. This is part of the communication role of being an RS, as the PRS blog states: 'getting the existing evidence out there in an easy accessible format' [sic.]. Another priority for Ms Research, therefore, was ensuring that the content of

the seminars was easy to understand so my questionnaire asked respondents how clear each presentation was and whether they thought the content was accessible.

The questionnaire findings showed that 49% of respondents agreed that the content of the seminars they attended was accessible and a further 40% strongly agreed with this. A similar percentage agreed that the seminars they attended were clearly presented (40%), with 47% strongly agreeing with this. Co-ordinating academics to disseminate the findings from their research in an accessible format was not easy, though, as Ms Research explained in the interview. She speculated that ‘sometimes some researchers are a little bit anxious about talking about their research to teachers because they think that they won’t understand’ and suggested that it should be their responsibility to be able ‘to articulate it with clarity’. The PRS website implied that teachers are needed to translate evidence to practice as academics would not be as proficient in this.

Ms Research divulged that some academics who were contacted were not willing to present their work to teachers. She said she has had experience of academics saying their research is not of interest to schools (also in Hordern, 2015), which she was astounded at because surely the purpose of educational research is to make a difference in schools. Ms Research is now ‘trying to be a bit more strategic and target’ those whom she knows would be willing to visit the school to disseminate their research. This leads on to the socio-cultural factor of personal interest as Ms Research was clearly well-connected with researchers due to her interest in research itself.

Ms Research’s personal interest in research was clear and this, combined with support from the school, enabled research engagement to flourish at the school. From the initial email conversations, it was clear that she was interested in reading academic papers as she asked if the research team (meaning my supervisory team) had published any papers that she could read. She told in the interview how she has ‘independently been a member of the British Educational Research Association for many many years’ [sic] since she was first introduced to the organisation during her Master’s of Teaching, which she did in the second year of her teaching career. She told of how she had always been interested in the idea of research and is allowed time out of school to attend BERA’s annual conference every year. Much like the senior leaders from research-engaged schools in Coldwell et al.’s (2017) study, Ms Research found that a way to source evidence was at conference. She said she searches through the

programme to find researchers who she thinks would be willing to be recorded talking about their research for a podcast or even to visit the school at a later date to deliver a seminar.

Populating the research seminar programme can be attributed partly to Ms Research's recruitment strategies and also to the research culture of the school. From running the programme for two years, Ms Research believed that the best procedure is to pre-populate the programme in the summer to start in October as everything is still too new in September. One seminar per month was found to be optimal but none in the summer term due to exam pressures. In the interview, she explained how the researcher who delivered the first seminar did so in gratitude for being able to research teachers in the classroom at PRS. In the interview and at conference, she repeated how sending 'cheeky emails' to academics was how the research seminar programme started. Building up connections with these academics then 'snowballed' to other academics and these relationships are reciprocal. For example, the school might help recruit participants for a future study of a researcher who has given a seminar. McLaughlin's (2010) study found that schools working with universities enabled academics to disseminate their research to teachers but suggested that accountability frameworks would need to change to make this worthwhile for each party. With the Research Excellence Framework of recent years, there is more incentive now for academics in HE to disseminate their findings for impact case studies. At best, this only encourages teachers to engage *with* research rather than being enabled to engage *in* their own research (as pointed out by Godfrey and Brown, 2018). Ms Research referred to the Research Excellence Framework (REF) when explaining this reciprocity as she believes the seminars are a useful platform for researchers to have impact, and of course this is to the advantage of the research engagement of the school. As far as Ms Research could see, with the number of academics in universities, there are potentially lots of researchers who could present to teachers.

The school clearly has the capacity to enable personnel to focus upon research, which schools without the status enjoyed by PRS do not have. One reason why the school enjoys such privileges is because its improvement led to it being deemed 'outstanding' by Ofsted, which is a criterion for being awarded TS status, and Ms Research attributed this improvement to the research engagement that has always been a priority for her. She told of how the R&D element of the TS remit was very important to her as research and evidence had always been a 'crucial lynch-pin' and she requested that she lead the school, the alliance and the trust in this area. The first job that the CEO asked Ms Research to do in this role was to establish an underpinning ethos for R&D, which she found in the BERA-RSA (2014)

paper on the role of research in teaching. With her BERA membership, Ms Research ‘knew where to look to find something’ and she told of when she ‘found the BERA paper - Ahah! Bingo! Hurray! That’s perfect. That outlines it perfectly for us’. She was pleased when she found the paper as she was able to see R&D as an overarching ethos addressing five areas, which formed the five core areas detailed at the beginning of 4.3. Ms Research wanted these to thread through everything they do, as seen in Gu et al. (2015) and Coldwell et al. (2017). This can be seen as pioneering as the Teaching Schools Council (2017) has now adopted a similar view of R&D, which they say should underpin ITE, CPD and school support rather than being a separate entity. Again, it is the personal attributes of Ms Research, as well as the support of the school, that enable research engagement.

Being a TS also has financial implications, as does the other status that PRS holds – Research School. With R&D being part of the TS remit, there is a ‘very, very, very small budget’, as Ms Research described it in interview, to fund the travel expenses of the researchers who deliver the seminar. Ms Research intimated that with R&D being in the remit of teaching schools, there is no excuse for the lack of research engagement that she suspects is the case in some TSs. Being a member of the RSN also means that they are allocated £200,000 over three years. As they become a more established RS, Ms Research thinks this will also help in the organisation of future seminars. She believed that research seminars should be possible in other schools without this status, although she acknowledged that a small academy of schools might find it harder to do this.

PRS has the personnel to maintain the research seminar series experienced in this case study over the 2016-17 academic year even, as Ms Research explained in the interview, now that she works more for the RSN and EEF. With PRS having a director of teaching school, here known as Ms Teaching-School, she has been able to delegate the responsibility of organising next year’s seminars, although Ms Research seems keen to maintain some control of the programme. She gave an example of a forthcoming seminar that she knows Ms Teaching-School has organised for the next school year as being delivered by someone from the National Handwriting Association as Ms Teaching-School has been conducting her own research into improving handwriting and a PRS blog cites this charity as a source of evidence for her innovation. Engaging *with* research, then is linked to the research that some senior leaders are engaging *in*, as will be detailed in the next subsection.

4.3.4 Engaging in research

The only physical access granted to this research site involved the research seminars, which have already been explored in relation to participants engaging findings *from* the research presented and engaging *with* this research; however, the school did also engage *in* research, as has been gathered from other data, presented in this short section. Modelling the school's research engagement on BERA-RSA (2014), Ms Research explained in the interview that 'some areas were obviously easier to action than others' and gave the example of measuring the impact of changes as a difficulty, even though this is not mentioned in that document. Her blog elaborates upon the problem as 'interventions having an initial dip and then improving' outcomes. It was clearly the school's intention that an intervention needs to be followed by engaging in research, which might be carried out by teaching practitioners themselves, in collaboration with external others or merely involve teachers being participants in others' research.

A PRS blog post identified the school's status of RS as 'more focused on using research than carrying it out', which was corroborated by Ms Research who commented in the interview that she thought the teacher as researcher debate had been laid to rest. What was encouraged, though, was evaluations of innovations, carried out by senior leaders in the form of trials. PRS's blog encourages schools to conduct their own research as it is stated that as an RS, they 'support schools in testing their own innovative answers'. The spring 2017 newsletter, sent via email to anyone who has signed up to it, included 'how we measure the impact of the innovative practices we develop' because 'using research evidence to inform our decision making is only the start'. The newsletter suggests that schools 'should be robustly evaluating the impact of the changes we are making' because 'we need to know if it is more effective than before'.

This newsletter claimed to reveal 'how others are finding out what works best for their schools' and although it is stated that there are 'a range of different strategies to do this', it is only 'trials' that are mentioned in this document and elsewhere. This is justified by saying that in order to generate evidence on the innovative practices developed by teachers, 'it is important that research is designed and carried out so that it has maximum validity' according to a page on the PRS website entitled 'Research Design and Support'. The PRS website includes links to 'audit your school' to find out whether you are 'research ready' and

the focus of this webpage is upon using RCTs as it is stated that this research method ‘helps to make your research more valid’.

One such trial was conducted by the MAT’s Director of Maths, known here as Mr Maths. He had received funding from a regional maths hub to evaluate an evidence-informed innovation intended to aid the learning of times tables. In a PRS blog written by Mr Maths, he described his evaluation as a ‘randomised control trial’. Whether this was truly random, however, is doubtful as another blog on the PRS website described the process of randomising as making the control and treatment groups similar, which is not usually the case in RCTs (Torgeson and Torgeson, 2013). Mr Maths’ blog explained that in the ‘intervention’ group, ‘activities are based on ideas and suggested by Professor Jo Boaler from Stanford University’, so the innovation was informed by evidence. The children in this group would be compared to their counterparts in the ‘control’ group, who would be doing ‘business as usual’. Ms Research in her own blog described engaging in research as ‘evaluating impact against business as usual’, elaborating in the interview that this process is usually conducted over eight to ten weeks.

Although the website specified that what is being encouraged is ‘not large-scale randomised controlled trials’, Mr Maths’ trial was conducted ‘in Year 3 in a range of schools for one term’, as was were other projects referred to in the PRS blog. One involved 10 ‘treatment’ and 10 ‘control’ schools because, as Ms Research corroborated in the interview, it is deemed important to know that an intervention works in other contexts and not just at PRS. At a ResearchED conference, Ms Research explained an ongoing project she was involved in, which started with her wanting to ‘test’ a literacy intervention she had created based upon research. She did this using a ‘small scale trial (using RCT methodology, with control group wait list, across 4 schools) [sic.]’ and this had then been scaled up with the help of academics to form a collaborative research project, explored in the next subsection. Ms Research’s blog specifies that ‘the evaluation will compare the attainment of the intervention and control classes on a common end-of-year test’.

Quantitative data, therefore, were the focus of these trials but Ms Research mentioned the need for ‘softer, qualitative data’, in her blog, *Evidenced and Informed*. When she trialled a reading intervention, Ms Research also conducted interviews so she could capture ‘the voices from children, the person delivering the intervention, progress data, parents’. At ResearchED, she explained that this was to ‘triangulate the data’. In her blog, she explained

that there are ‘wider outcomes possible than just the academic’, which is what Mr Maths was concentrating upon, leading him to conclude that his intervention had ‘an ‘effect size’ of between three and four months’ improvement’. In his blog Mr Maths wanted the ‘results to add to the evidence about, and warrant further research into, the teaching of times tables’ so the intention was for the evaluation to be influential on a wider scale rather than on a local level.

In her presentation at a ResearchED conference, Ms Research emphasised the communication of findings to research participants, calling it ‘an ethical imperative’ and there were other ethical considerations apparent in the data from PRS. Readers of Mr Maths’ evidence-informed intervention are encouraged to learn more by following the link provided. A PRS blog also encourages researching practitioners to ‘share your findings with EVERYONE’, positive and negative because, as Ms Research explained at ResearchED, ‘EVERY outcome from every intervention helps us understand and learn more’ (emphasis in the original data).

In terms of ethical considerations in the conduct of research, there is a statement on the website that at PRS ‘all the research we do is underpinned by strong ethical implications’ and is ‘adapted from the The British Psychological Society Code of Human Research Ethics, 2014’ [sic.]. PRS’s blog on an RCT that the school was running states ‘all of the ethical safeguards outlined in the [TSA’s] ethical guidelines for research will be followed’ and the ‘‘control’ schools will be given the training and materials after the trial’. On the Innovation Evaluation Project webpage also, potential practitioner researchers are advised to ‘explain how you will maintain the confidentiality of your participants’ when applying for funding.

Facilitating the funding of research can be seen as a key feature of PRS and the schemes they publicised also gave support to schools wanting to engage in research that aligns with the RSN agenda. The Innovation Evaluation Grant, detailed on PRS’s website, offers ‘the expertise and finance to robustly evaluate your innovative practices’ [sic]. This webpage details how the grant from the IEE is intended to ‘provide funding for pilot evaluations of innovations of teaching and learning approaches that support the RSN’s goal to improve the attainment of pupils by increasing the use of evidence-based practices’. Research objectives could include ‘attainment, engagement or teacher efficacy’. As well as quantitative data from test results, qualitative data are also important for what they call a ‘process evaluation’, which may use data gathered from observations or ‘surveys and/or

interviews to assess staff and pupil perceptions of the innovation'. The role of PRS is as a gatekeeper to this funding as applications 'should be supported by the Director of Research at your local Research School', with successful projects being awarded up to £5,000 from the £20,000 grant. Readers are told elsewhere on the PRS website that the 'EEF have opened a new funding round' and, similar to the agenda of the RSN, it is for 'projects aiming to improve attainment and related outcomes for 3-18 year-olds'. Teachers engaging in research has been described as liberating (Zeichner and Klehr, 1999), however, the way this is enacted in PRS means that it is constrained to a narrow agenda and, as will be explored next, is reliant upon external others.

For the Innovation Fund, 'schools are encouraged to collaborate' and in the PRS blog, teaching practitioners are encouraged to 'think about either setting up a small research project yourself or collaborating with someone else' or at least to 'ask for other pairs of eyes', mentioning two academics who are working with the school on a collaborative project. At a ResearchED conference, Ms Research presented her literacy intervention that had been recognised as having potential by academics in Argentina, so a research collaboration had started. She explained that she is 'working closely together' with the EEF and experts on what has become an international trial. Rather than leading the trial, however, it sounded like she had created the intervention and was training teachers (online) in how to implement it. It can, therefore, be deduced that, although instrumental in engaging with research in the innovation stage, Ms Research is engaging in the research of others, which will now be elaborated upon.

Teachers can be engaged in research but as passive participants rather than being the investigators themselves and this was encouraged by PRS. Ms Research's literacy intervention is described in a blog post as 'used internationally and has considerable research to support it', going on to request schools to sign up for the training and materials pack to be part of 'a large national trial'. There is clearly an interest for schools to volunteer to be part of research like this as a comment left on one blog post stated 'we would be happy to trial your pack'. In the booklet on PD opportunities is a plea to 'become involved with research and development studies' through PRS's teaching school alliance. The PRS website has a page on 'Current Research', which lists three trials in which teaching practitioners may want to become involved, most of which are run by the EEF and universities. The blog posts also advertise the research of others, mainly of the researchers who have presented at the seminars. For example, the academic who delivered the seminar on EAL wrote a blog post

for PRS that started with ‘Teachers in England, of YR to Y13, are invited to complete a survey’, with the hyperlink to the online survey at the end of the post. This was witnessed in a Research Seminar presentation where there was a link to ‘please take part in my survey’ for the speaker’s next research project. There is, therefore, a reciprocal relationship between researchers and PRS, though not in an equal collaboration.

4.3.5 Concluding thoughts

The main focus of this case study was on research engagement via the seminars hosted at PRS but, as Ms Research pointed out when I was emailing her about the seminar series being identified as a research engagement activity, she replied that it is not about teacher engagement with research but one strategy to facilitate this. It is clear that there were many ways that PRS encouraged research engagement. In her blog, Ms Research exclaimed that ‘we spend a lot of time drenching teachers in professional learning’, reiterated at ResearchED, where the seminar series was described as one example of this ‘downpour’, which is part of the alliance’s CPD offer, though open to any interested party.

Ms Research’s blog was critical of the ‘interpretations of the evidence’ seen in the teaching profession and in the interview Ms Research traced this back to general inadequate engagement with research in the teaching profession, echoing BERA-RSA (2014, p.12) which criticises the CPD of teachers for being ‘insufficiently informed by research in all of its different forms’. The seminar series sought to ameliorate this by providing a platform for academics to present their findings from eclectic forms of research: RCTs, longitudinal studies, mixed-methods, etc. In the interview, Ms Research expressed her belief that it is important for teachers to hear about research first-hand and the seminar series was a possible solution for getting researchers in touch with teachers to reduce misinterpretations of research findings. Teachers engaging with researchers directly that did not seem to feature in the literature dealing with empirical studies on teacher engagement with research, although similar initiatives were found by Coldwell et al. (2017) in highly-engaged schools.

Initially, this study was intended to be an evaluation of the potential that research engagement has for the teaching profession; although this did not come to fruition, the perceived impact of research engagement was established, by both Ms Research and the respondents of the questionnaires distributed at the seminars. When asked about any impact

that Ms Research knows of, she said that the seminars can sometimes cause a ‘jolt’ that encourages teachers to change their practice but, as it is stated in the school’s blog, engaging with research is ‘unlikely to change practice’ straight away. In the interview, she went on to explain that it is hard to speculate about impact because it is the intention that the seminars are ‘contemplative’ and make research engagement ‘slower and more methodical’ rather than what she called ‘quick-fire drive-thru’ research engagement, similar to Rea et al.’s (2015a, p.19) ‘hit and run’ training. In a report of TSs for the National College for Teaching and Leadership, a director of one alliance 'noted that R&D is not used for some of the more practical quick-fixes schools need' (Maxwell et al., 2015, p.45), implying that it could and should be used in this way. Although Ms Research believed that ‘it isn’t always about hearing something you can implement directly’, comments left on the questionnaire imply that teachers want to know about practical implementations of interventions that have been researched and knowing about the research behind these interventions is interesting but secondary.

The enabling factors for the research engagement in PRS was clearly Ms Research’s own interest in research, coupled with the school’s agency to encourage her enthusiasm. This is evident in the attendance at BERA’s annual conferences, which may even have influenced the parlance used in, for example, the newsletter where there is a recommendation to establish special interest groups to research particular issues in education à la BERA.

4.4 Evaluative Case Study

Rather than structuring this section of Chapter Four in line with the theoretical framework, each section pertains to the doctoral research questions in order to present:

- a) the research *practices* of the school being evaluated;
- b) the *perceptions* held of these by the participants; and,
- c) the *potential* of their research engagement.

The final research question is most pertinent to this study as it is an evaluation of the research practices of a school but as Table 15 demonstrates, all questions were addressed. As a ‘user-focused’ evaluation based upon Patton’s (1997) ‘utilization-focused’ evaluation, the success criteria were established by participants (as in Kushner et al., 2001) so the findings do not

necessarily map onto the adapted framework of Carr and Kemmis (1986), though links are made where relevant.

The school participating in this particular study is referred to as Teaching Primary School (TPS) as it is a National Teaching School, as designated by the NCTL. As such, there is an expectation from the NCTL that teachers will be research engaged (Teaching Schools Council, 2017). TPS introduced LS, involving research engagement, in the 2016-17 academic year as part of compulsory staff PD. This evaluative case study aimed to investigate the potential of LS as a form of research engagement (as proposed by Hall, 2014) within teachers' CPD.

Table 15: how each research question is addressed

Doctoral Research Questions	User-focused Evaluative Case Study
1. How do teaching practitioners in a variety of settings perceive research engagement?	Participants (n=3) identified what they perceived as the value of research engagement. These became evaluation criteria.
2. How can socio-cultural factors in schools influence practices of research engagement?	Observations (n=7) of whole-school research engagement via LS for professional development, school documentation and meetings with the head teacher
3. What potential worth can research engagement have for the professional development of teaching practitioners?	Outcomes of research engagement via LS perceived by participants (n=3) evidenced from documentation, interviews (n=2), lesson observation (n=1) and focus group with pupils (n=5)

First, the second of the three research questions is attended to as this introduces the research *practices* of the school in which the user-focused evaluation took place. The first research question is then addressed to introduce the three participants and their *perceptions* of what is valuable in engaging with research in the way that they did during the 2016-17 academic year. Finally, the focus shifts to the third research question via an analytic framework based upon the participants' expressed aspirational outcomes (or the *potential*) of their research engagement. By presenting the extent to which these aspirational outcomes were achieved, the 'reach' of this form of research engagement for PD may be understood using criteria deemed valuable to the teaching practitioners involved, and therefore others in a similar position. Whereas the findings from the first two research questions are exploratory (presenting how research engagement is viewed and enacted in practice), findings from the

third research question are educative. Elliott (2001) made the distinction between educational research, which has an educative aim for teachers, and research on education, which has little relevance for teachers. For research to be educative, Elliott (2001) advised that teachers should be involved in prioritising their objectives and deciding upon evidence that is relevant for them. As a user-focused evaluation, these criteria were achieved.

4.4.1 Research engagement practices

R&D was a school priority and this manifested as engaging *with* research via LS. The practices of this initiative are first described before other CPD practices involving engaging with research are identified. Engaging findings *from* research was also present in LS, the main research activity being evaluated, as well as teachers *re*-searching, as will be described next.

Lesson Study

The main research engagement practice of TPS was LS, with which all teachers were required to engage. There are different ways in which versions of LS can be used as a research-engagement activity. For example, Maxwell et al. (2015) reported two TSAs using LS for all teachers to conduct their own enquiries. The version of LS at TPS was not used for engaging *in* research but for teachers to reflect upon their current teaching, engage *with* research and engage findings *from* research for further reflection (*re*-search). This involved teachers working together in groups of three or four to find research that would help them answer an agreed research question. They are then expected to use this research to plan a lesson (as in McLaughlin, 2010), called a ‘Research Lesson’ to try out what had been learnt. Other teachers from the school and other participating schools observe the Research Lesson, taught after the official end of the school day, and discuss the learning they observed in the lesson. Findings were then shared amongst the network of participating schools at conference.

Lesson Study in TPS started in the 2016-17 academic year when the school and four of its partners joined an existing LS project of a local maths network, henceforth referred to with the pseudonym ‘MathsNet’. Ultimately, there were seven participating schools, from the primary and secondary sectors so LS clearly aligns with the networking culture of TSAs (see

Maxwell et al., 2015) and other multi-site collaborations (MACs/MATs) but facilitation from external partners was necessary for access to this research. The chair of this network, a former secondary head teacher, described LS as a form of research engagement and explained how he was keen to promote the CCT as members receive access to academic journals that they would not ordinarily be able to read without paying a subscription. This access to research, that he has via his role at a university, is essential to LS, as he went on to explain.

Throughout the LS process, participants were guided in research engagement by a ‘koshi’ (Japanese for ‘knowledgeable other’) in line with the LS format that originated in Japan. The chair of the maths network described himself as embodying this role so has been assigned the pseudonym ‘Mr Koshi’. As such, he ‘helps develop the lesson plan, points to research etc.’ (Field Notes), although in the *Team Handbook*, LS is described as ‘teacher-led’. Maxwell et al. (2015) noted the differences between one TSA studied, who had a similar research facilitator who provided research evidence to engage the teachers, and in two other alliances where this was done collaboratively, resulting in the core participants reporting more of a commitment to reading external research i.e. engaging with research.

Like in the Japanese model, TPS had an overarching research theme for the year. Then more specific research questions were decided upon and lessons were planned carefully, informed by literature, experiences and resources available. The koshi also comments upon the Research Lesson as set out in the document *Lesson Study protocols for observers and post lesson discussions* under the heading *The role of the Koshi*. Mr Koshi also explained his role at the Research Lesson at another primary school that I attended, reminding the attendees that his feedback (that was pre-prepared and delivered in a PowerPoint straight after the lesson) focuses upon their engagement with research.

Similar CPD in the literature involves participating teachers conducting their own research to evaluate how effective research-informed strategies have been (Herrenkohl et al., 2010) but this was not a focus for MathsNet’s LS. Although at the end of the Research Lesson, there is a discussion to ‘evaluate the quality and impact of the lesson plan’ (*Lesson Study Protocols* document), there is no formal data collection that would identify this part of the process as engaging *in* research. A new feature of the Research Lesson plan for the 2017-18 academic year moved a little closer to this with a new section on ‘Convergence: what will we all do now as a result of the lesson and discussion?’, which can be seen as teachers producing their own knowledge to be acted upon rather than simply engaging (deploying) the

research of others. LS is usually an iterative process of engaging with research to inform planning, implementing findings and collecting data about the impact on learning (Dudley, 2014; Rea et al., 2015b) but the latter stage was not witnessed in the case study school, which focused upon research use, as explained next.

Research Use

The CPD structure of TPS featured Teacher Research and Development Groups (TRDGs), which did not involve teachers engaging in their own research, but focused upon the development of ‘practitioners who regard research incredibly highly’ (Team Handbook) through engaging with research. These TRDGs were explained by the head teacher, referred to here by the pseudonym, ‘Mr Head-Teacher’, as a group he leads ‘every so often’ to ‘discuss relevant literature and find ways to improve from what has been read’. When elaborating upon this document at a later meeting, Mr Head-Teacher said that he hoped to create a version of TRDGs for TAs, starting from November that year, using the MITA (Maximising the Impact of Teaching Assistants) report published by the EEF. As a teaching school, R&D is evidently considered valuable for all teaching practitioners, not just classroom teachers, unlike a TSA in one study by the NCTL (March 2014) where research study groups were reserved for senior leaders rather than all teaching professionals.

A school document called *Teacher Development Pathway* (TDP) presents teacher development as a ‘spectrum’, ranging from ‘prescription’ at one end to ‘autonomy’ at the other extreme, similar to Carr and Kemmis’ (1986) framework of teacher professionalism used in this thesis. For all teachers at TPS, there should be ‘evidence of reading within practice’, as stated in the document under the ‘professional attributes’ section, which puts them at the ‘autonomy’ end of the spectrum as they are sourcing their own knowledge to engage with. Mr Head-Teacher’s vision is that a ‘developing teacher’ (defined in the TDP document as being 3-5 years into one’s teaching career) ‘seeks research, development and opportunities for improvement proactively’ (TDP document). Here, autonomous decision-making is linked to dedicated service to a profession (as in Evetts, 2013).

However, there is still some prescription in the research that teachers should engage with. In the school’s *Team Handbook* under the section entitled *Teachers as Researchers*, there is a list of three books, given to all staff, which are ‘expected to be read in their own time’ as they are referred to in staff development sessions. The EEF’s MITA report is also

cited as a valuable resource so engaging with research is clearly valued in TPS, though within the parameters of ‘set texts’ recommended by the head teacher, as also seen in Coldwell et al. (2017).

The aim is not only to engage *with* this research but to engage findings *from* research, which was considered a feature of an autonomous professional. The trajectory towards autonomous teachers was also presented in the *CPD and Opportunities* document for all schools in the TSA, which provided a model of prescription to autonomy via research use. Engaging findings from research was also the theme of Mr Head-Teacher’s presentation at the Lesson Study Conference held in September 2017 entitled *Using evidence-informed practice to improve the effectiveness of teaching*. The aim of this presentation was to showcase the achievements of schools involved in the LS project during the previous year. This evaluative case study gains an insider-perspective on LS, based upon the success criteria set by the participants themselves.

4.4.2 Perceptions of participants

Now that the context of LS as a form of research engagement within the CPD structure of the school has been described, it is necessary to introduce the teachers working within this socio-cultural domain to address the second research question regarding teaching practitioners’ perceptions of research engagement. Here, this question illuminates the value that the participating teaching practitioners placed upon LS as a form of PD. Once the perceived values of LS have been established, these will be used as criteria so the potential of LS as a form of research engagement can be examined.

Head teacher

The head teacher categorised LS specifically as ‘Research and Development’ rather than general PD, as evident by its place under the *Research and Development* heading of the *Professional Development* section of the *Team Handbook*. In the initial meeting with Mr Head-Teacher, the importance of engaging with research via LS was also evident. Here, he mentioned how since starting LS, he ‘hears staff talking about research now’, which Coldwell et al. (2017) defined as an indicator of engagement with research in their evaluation of evidence-informed teaching. Mr Head-Teacher’s aspirational outcome of the LS cycle 2016-

17 was that this ‘culture change’ (Field Notes), already detected, would be embedded. It was collaboratively decided by the head teacher and the researcher that the best way to detect whether this was indeed the case was via observations captured in field notes for, as Mr Koshi (also present at the meeting) pointed out, it is difficult to specify tangible benefits as it is more of a cultural shift.

As well as identifying LS as a way of teachers engaging *with* research, Mr Head-Teacher also saw LS as a way of teachers engaging *in* research. The *Team Handbook* proposed that ‘the findings from the lesson studies throughout the year will be collated and published as an official piece of educational research’. Similarly, in Rea et al.’s (2015a, p.143) study, one TS made it a priority for teachers to publish the impact of what they were witnessing as a result of their research engagement, their rationale being that ‘almost three quarters of published educational research in Japan is written by teachers’. Hall (2014) also stressed that it is important for teachers engaged *in* research (using LS as an example) to document their findings. The production of a published piece of research was seen by Mr Head-Teacher as a tangible aspirational outcome linked to his goal of a culture change in raising the esteem of the teaching profession, mentioned during Mr Head-Teacher’s presentation at the Lesson Study Conference. A published piece of research would be a ‘concrete’ expression of teacher autonomy in that instead of only being the passive recipients of research, teachers of TPS would become the active producers of research via LS. There was no evidence to suggest that this happened during the evaluation, however.

Junior teacher

When liaising with Mr Head-Teacher regarding recruitment for the study, he expressed the view that ‘not all teachers will see the benefits straight away’ but that there were two teachers who had articulated that they had benefited from the LS cycle during the 2016-17 academic year. As it was necessary to recruit participants who could articulate some perceived impact of LS, these two teachers were approached and consented to participate in the evaluation. One of these consenting individuals was a teacher who had recently moved from the infant to the junior division of the school, therefore has been assigned the pseudonym ‘Mr Junior’.

Mr Junior’s main perception of LS was that it enabled him to deviate from the scheme of work bought in by the school, referred to here as Master Maths (MM). LS presented one research-informed strategy to develop the teaching of problem-solving skills within a six-part

lesson, which is the structure of lessons created by MM; as his Lesson Study Plan states, the aim was to ‘incorporate problems and puzzles that would inspire pupils’ because these were seen as lacking in the MM scheme. From his trialling of research-informed strategies during the previous year’s LS, Mr Junior stated in the initial meeting that he has now been enabled to incorporate ‘fun’ problem-solving opportunities into MM. This links to the idea of teacher autonomy to which the head teacher wanted his teachers to aspire. For the purpose of this evaluative framework, this is referred to as professional agency. To evaluate the success of this purported professional agency, lesson plans adapted from the MM scheme were analysed and used as prompts for a semi-structured interview with Mr Junior.

When asked about the impact of his involvement in LS on his pupils, Mr Junior replied that because he has investigated appropriate choices of tasks with effective structure, he is now able to instil confidence in his pupils so they are ‘able to begin tasks [more independently] knowing how to approach the maths problem’. This confidence in thinking mathematically by talking through ‘productive struggle’ was a focus of the Research Lesson of 15/03/17 so this was examined as a criterion in the evaluative framework (Table 15) by observing a maths lesson taught by Mr Junior. This was then followed by a focus group with five of Mr Junior’s pupils to ask further questions about pupils’ approaches to solving mathematical problems. Generally, Mr Junior’s perception of research engagement via LS was that it gave him agency to tailor his lessons to engage his pupils in maths.

SEND teacher

Attention is now turned to another classroom teacher who was recommended by the head teacher for this study as she was so convinced by LS that she has been involved in two cycles rather than the stipulated one cycle that is linked to teachers’ appraisal (as explained by Mr Head-Teacher). As she is the school’s SENDCo, she will be known here as ‘Ms Send’. She was involved in the same LS cycle as Mr Junior and she found the experience so rewarding that she participated in a second cycle voluntarily, investigating adaptations of pre-prepared lessons sent to the school as part of the Master Maths (MM) programme to which they subscribe.

At the start of the 2017-18 school year, when asked what she thought had been achieved by engaging in LS in the previous academic year, Ms Send said that she had gained confidence from watching the deputy head model the lessons that they had planned together.

Although this modelling was not linked to research engagement, it might be identified as a form of *re*-search. Furthermore, confidence was mentioned as an outcome by two TAs who both separately said that they feel more confident in their roles since being involved in observing the Research Lessons. One said this was because she ‘needs less explanation now as she can sit back and watch’ (Field Notes). As with Ms Send, this TA valued the opportunity to observe a lesson, as opposed to being involved in assisting with the lesson as is usually the case. Similarly, the other TA said LS ‘allows you to sit back and see who hasn’t got it’ (ibid.), which they do not normally have the opportunity to do because they are just working with individuals or groups rather than being able to see the lesson in its entirety. From these perceptions, it can be deduced that LS, whilst perhaps not being a way for teachers to research their own practice (as data are not collected), it is used to *re*-search (or re-look at) teaching and learning, resulting in improved teaching, an aspirational outcome that is explained next.

A benefit of LS, combining *re*-search and engagement *with* research, was that Ms Send felt she had gained confidence in the planning process, which led to efficiency in the delivery of the maths curriculum. Ms Send, in the initial meeting said that because of her increased confidence in adapting MM lessons to suit the needs of her SEND class, comprising of pupils of all ages, she was now able to plan lessons that she is confident will be successful and not waste time with pedagogy that is inappropriate for her class. Efficiency in delivering the maths curriculum, therefore, became the final criterion in the evaluative framework derived from the perceptions of the three main participants, as displayed in Table 16.

Table 16: methods used to evaluate aspirational outcomes

Aspirational outcomes	Methods agreed to evidence this outcome	Focus
1. A culture change	Observations during visits (n=7).	Teachers referring to evidence from research to develop their teaching. ‘Official piece of educational research’ published.
2. Teacher agency	Comparison of MM lesson plan and the plan adapted by the two teachers through LS via document analysis and from discussions in semi-structured interview.	Key questions: Why did you change that? Is that what you learnt in last year’s LS?

3. Pupil confidence in approaching mathematical problems	Observation of a maths lesson taught by Mr Junior. Focus group with five pupils.	Are pupils confident when approaching maths problems? Key question: How do you know how to solve the problem like that? Key questions: What is maths? What made you 'get it'? Is there anything in your lessons that makes you feel confident? How do you feel when sir gives you problems to solve?
4. Efficiency in delivering the maths curriculum	Analysis of lesson plan documentation adapted by Ms Send in light of involvement in LS. One semi-structured interview to explain changes.	Key questions: Why did you change that? Is that what you learnt in last year's LS? How far do you normally get in the scheme at this point in time?

The evaluative case study presented below is a combination of a process and an outcome evaluation (Guskey and Sparks, 1991), where the process of research engagement itself is explored (in terms of whether it developed a research culture at the school and offered more teacher agency) and the related outcomes of these changes (pupil confidence in approaching mathematical problems and an efficient delivery of the maths curriculum) are assessed. McLaughlin (2010) maintained that if research engagement is the main objective of an initiative, this was easier to achieve than if the main aim was pupil attainment or school improvement, though the latter has been attempted by Coldwell et al. (2017). Their evaluation of whether research engagement directly improves practice in the teaching profession was determined by pupil test scores correlated with the extent to which participating teachers could explain their teaching choices with reference to published research (also in Hammersley-Fletcher et al., 2015). Such a test was not imposed upon participants in this doctoral study and instead, the criteria gleaned from the head teacher and two teachers from the primary school, which did not involve increasing pupil test scores (Table 16), were used to evaluate the potential of LS.

4.4.3 The potential of Lesson Study for research engagement

With the *practices* of Lesson Study at TPS, and the *perceptions* of these practices in mind, the main question can begin to be answered: What *potential* does research engagement i.e. LS have for the PD of teaching practitioners? To address this question, each aspirational outcome

from the evaluative framework depicted in Table 16 was investigated using the findings from the agreed data collecting methods to illuminate whether the targets have indeed been achieved. The first two aspirational outcomes pertain to process factors as they relate to the process of research engagement rather than the outcomes of this initiative.

Aspirational Outcome One: a culture change

The first aspirational outcome to be evaluated is the culture change that Mr Head-Teacher intended to embed. Ms Send evidently could refer to the evidence from research that had informed her teaching but for Mr Junior, there were issues around access to this research, which may prevent research engagement becoming part of the school culture. What LS has been found to do, however, is enhance the professional culture of teaching, not via engagement *with* research but through *re*-search.

The *School Prospectus* for 2016-17 states there is a ‘positive professional culture and solution-focussed approach’ in the school, which is enhanced through LS according to the two teachers interviewed. When Ms Send mentioned culture in her interview, she intimated that the focus of LS for the 2016-17 school year fostered a supportive culture where there is no fear of being judged, which could be identified as the ‘positive professional culture’ mentioned in the school prospectus. She also explained that examining one’s own practice to progress and try something new was a cultural shift, implying this is relatively new in the school. LS encouraged, for the first time, to her knowledge, teachers to find things out for themselves as opposed to top-down PD (Kennedy, 2005). The whole school had a research question: how can we develop the teaching of problem-solving skills within a 6-part lesson?’ to answer, which, Ms Send said, the first Research Lesson she was involved in partly answered. The ‘solution-focused approach’ referred to in the school prospectus is, therefore, manifest in LS. Mr Junior also noted that there had been ‘a culture shift in CPD to what was done before’, which, he elaborated, had been observations, reflections and self-taping. LS includes observations and reflective practice like the CPD Mr Junior said he had done before but it is the research element that is different. He said engaging with research provides new ideas and helps answer questions. This could also be linked with the ‘solution-focused approach’ referred to in the school prospectus.

The head teacher said he wanted a culture change so all staff, including TAs, see the value of research and it is clear from the data collected that LS has the potential to facilitate

this. It was evident in the interview with Ms Send that she values research as she believed that improvements come from research and was pleased that the developers of MM use research. She was excited to talk about the research she has read, saying ‘I loved this one’ (pointing to a paper cited in a Research Lesson plan) and ‘that was a good paper’, referring to another as ‘one of my favourite[s]’ and exclaiming ‘oh yeah!’ when reminded about another paper cited. She is also clearly familiar with the research she has engaged with and was eager to share what she had read, which extended beyond the field she was investigating for the lesson e.g. it was a ‘vocabulary paper that resonated’. Being able to articulate how evidence from research had changed practice was a feature of research-engaged schools according to Coldwell et al. (2017), although they noted that this can be superficial.

For example, although all teaching practitioners participating in LS were expected to engage with research, the evidence suggests that this was not always the case, therefore a research culture may not have been embedded yet. The Research Lesson plan template includes a space for reflection relating to personal experience and associated research and this engagement with research is intended to be valuable for all those involved in the LS project, not just those teachers involved in preparing a particular Research Lesson. In the *Protocol for Observers* document, it advises that participants observing a Research Lesson should refer to any research articles referenced in the Research Lesson plan. This stipulation was part of the LS process formulated by Mr Koshi and was also found by Rea et al. (2015a, p.144) in their study of a TSA where teachers ‘engage with relevant research to support their observations and reflections’, though not in an LS format. This frequent engagement with research is what Mr Head-Teacher wanted to promote in the culture of the school using LS. It is dubious as to whether this was achieved, however, as Mr Junior said that he had not sourced research in preparation for his Research Lesson as it was decided amongst his group that he would just teach the lesson. Ms Send, however, thought that in her two groups, one of which included Mr Junior, all members had sourced research. This discrepancy casts doubt as to whether all teachers were engaged with research during the LS process, as Mr Head-Teacher’s vision for a research culture would necessitate.

From the process evaluation arm of this case study, access to high-quality publications was identified as a barrier to the development of a research culture intended by Mr Head-Teacher. In the semi-structured interview with Mr Junior, he mentioned that he needs research access as a professional. Without this, teachers have to rely upon references to research in the public domain e.g. the media. In the initial meeting with Mr Koshi, he

remarked that he had not heard of some of the authors cited by teachers in another school involved in the LS project and was surprised that they had not used the work of more prominent researchers. Perhaps this is because teachers do not have access to the kind of research that Mr Koshi has as an employee of a university. Ms Send, however, did not mention access to research as a problem and explained that most of the research she used had come from the MM website where ‘there’s usually one or two pieces of research that might help you to teach it’. It is possible here that Ms Send’s understanding of research varied to Mr Junior’s and to Mr Koshi’s expectations of the researchers that teachers would cite in their lesson plans. Whilst it may appear that research use is becoming part of the culture at TPS, this is dependent upon how research is understood.

Mr Junior referred to LS enabling him to learn as a professional from his own practice and that of others (re-search), rather than by using existing research. LS provides a platform for teachers to re-search, which Mr Junior linked with a culture of professionalism: ‘reflecting as professionals is the most important aspect’. He talked a lot about feeling part of a profession and said that LS is about ‘working together as professionals’. This was echoed by the first keynote speaker at the LS conference, Professor Geoff Wake, who proposed that it should be renamed Collaborative Lesson Research.

Utilising the potential of LS for professional development is not yet part of the whole-school culture, though, as some staff in TPS were more engaged in LS than others. Brown and Zhang (2016, p.794) also found from a survey of 696 practitioners teaching in 79 schools that what they called evidence-informed practice’ (EIP) is not a ‘cultural norm’ amongst staff. As part of the research engagement required for staff appraisal at TPS, each teacher is involved in an LS cycle per term, which, Mr Head-Teacher explained at the conference, forms their weekly PD meetings. Part of the wider LS project involves engaging with Research Lessons taught at other schools in the network and at least two teachers from TPS did this at a school that the researcher attended on 05/07/17. Most staff, however, only observed the Research Lessons that were taught in their own school, as required, which raises the question of whether this can be identified as research ‘culture’ if it is prescribed.

To summarise, Mr Head-Teacher hoped that LS would embed the research culture he desired in the school and the success criteria for this aspirational outcome would be teachers referring to evidence from research to develop their teaching and the publication of an ‘official piece of educational research’. Ms Send certainly referred to evidence from research

and explained how she thought this had developed her teaching. She remarked that research is now part of their CPD culture in other subjects, not just maths as it was in the last academic year. She has applied the evidence she has found to another subject, English, for which LS was being used in the 2017-18 academic year. Publishing an ‘official piece of educational research’, however, appears to be ongoing as nothing more was mentioned about this during the evaluation. This is possibly because the version of LS used had not enabled teachers to engage *in* their own research to generate new knowledge in any formal way that could be published. Perceptions of whether the research culture of the 2016-17 academic year had been achieved appear to be divergent, perhaps due to the expectations of individuals. From what Mr Junior said about LS, *re*-searching one’s own practice appeared to be more valuable than engaging *with* existing research but Ms Send appreciated the opportunity to engage *with* research, as she understood it.

Mr Junior said that lack of time meant that colleagues were not able discuss whether findings from research would be applicable to TPS’s context, which he would prefer rather than simply including something in a lesson just because the research implies it will be successful (engaging *with* research rather than just engaging (deploying) finds *from* research). At the time of the evaluation, Mr Junior said research is more of an afterthought although it added depth and quality to what they were doing. According to Cain’s (2015) framework for viewing teachers’ use of research, this can be identified as strategic whereby external research is used to confirm teachers’ practice, in contrast to research engagement being instrumental in the active sense. What Mr Junior wanted is the ideal whereby ‘the professional teacher exercises discretion and judgment to evaluate educational research’ (Winch, Oancea and Orchard, 2013, p.2). There was, however, still a sense of ‘professional ownership’ (Coldwell et al., 2017) in the agency that teachers felt they had through LS, explained next.

Aspirational Outcome Two: teacher agency

LS can be seen as a way to give teachers more professional agency over what they do in the classroom, therefore fulfilling the head teacher’s aim for his teachers to move from prescription to autonomy in their professional practice. According to Coldwell et al. (2017), one of the core assumptions of evidence-based teaching, as it was referred to by the DfE at the beginning of their evaluation, was that it supports autonomy for schools and teachers. TPS, therefore, shares the same government aim of teachers having the agency to make

decisions as professionals. What follows is an account of how LS has enabled teachers at TPS to justify changes they make to the prescriptive Master Maths scheme of work bought in by the school. It is mainly the *re*-search encouraged by LS that the two participating class teachers spoke of, though Ms Send mentioned research that she had engaged *with*. Although there was a perception that LS enabled teachers to be more autonomous in their teaching as they were generating their own knowledge suited to their contexts, they did not have the agency to engage with a wide range of research and there was a desire for other teachers to adopt practices discovered by LS, thus negating any autonomy initially sought.

Ms Send said in the semi-structured interview that LS fostered teacher autonomy rather than following the MM scheme only, which is what the school had been doing in the past. She advanced that as a professional, she knew that prescribed lessons such as the schemes of work from MM are limited and she was critical of MM for being too prescriptive. Similarly, Mr Junior said he had always edited the slides sent by MM and, like Ms Send, it was only through trying things out in LS that he could justify deviating from what is prescribed. As well as Ms Send engaging *with* research, as demonstrated by the several papers used in the first LS cycle she was involved in with Mr Junior, LS for her was also about looking again, at her practice (*re*-search). She now questions her own practice, remarking ‘I don’t know why we didn’t do it before’. There is now agency to question previously accepted practice and change what they do as a school. Ms Send remarked that new teachers who started the school this academic year were not used to this autonomy.

Despite this perceived freedom to adapt MM, the Research Lesson plan mentioned the possibility of creating a lesson template that includes what the group had learnt about variation of mathematical expressions, questioning and cognitive conflict. For example, one feature of the proposed template was going to be focused on questioning but this initiative was more strongly influenced by the group *re*-searching their own practice rather than engaging *with* existing research. When Ms Send was asked whether the aim to construct a maths lesson template had been fulfilled, she replied that it was decided that a template was not the ideal way forward as the MM lessons are sent to the school in .Flipchart file form so it would be awkward to transfer the relevant material onto a new template. They have instead decided that it would be better to compile a list of ‘non-negotiables’ to share with the staff. Ms Send did go on to say that from the new cycle of LS, a template has been made for English lessons that includes strategies from research. Similarly, Mr Junior mentioned creating a ‘top 10’ of strategies learnt through LS and rolling this out to the whole school.

Cochran-Smith and Lytle (2009, p.146) clarify that those wishing to adopt what they call an ‘inquiry stance’ need to realise that it is not intended to standardise conduct so that all teachers adhere to ‘best practice’ to solve problems so that test scores improve and optimise the future workforce’. Whilst those involved in this LS cycle at TPS had a degree of agency to be able to try different ways of teaching problem-solving skills within MM, if they then disseminate their findings to others as a formula to be followed, this could stifle the autonomy of other teachers so it is questionable as to whether the autonomy desired by the head teacher has been achieved.

It was the looking closely at pedagogy, or *re*-searching, that was mentioned a lot by the two class teachers in relation to feelings of agency. Mr Junior said that the main outcome of LS for him was being able to adapt lessons ‘to add depth in so children can get a deeper understanding’. By planning the research lesson carefully with other teachers, he was able to plan more complex tasks that would challenge his pupils. Mr Junior said that appropriate choice of a mathematical problem is hard to do without the deep thought facilitated by LS, which may be conceptualised as ‘*re*-searching’. He described LS as ‘the most extensive planning I’ve ever done’ and it had given him the skill to ‘pick lessons apart’. Similarly, Ms Send explained that the detailed planning in LS requires you to anticipate pupil answers to teachers’ carefully-planned questions using Bloom’s Taxonomy, as stipulated in the *Team Handbook*. She remarked that ‘I don’t think I’ve done that before really’.

As well as *re*-searching different ways of adapting the MM lessons, the new strategies being trialled via LS allow participating teachers to view lessons from a child’s perspective. At the end of a cycle of LS, teachers watch a research lesson being taught and Ms Send said that during one of these observations, she realised that text on MM slides made them ‘too full’ for her children with SEND. She now adds a frame around text so slides are not too overwhelming. As she explained, LS has given her the agency to tailor lessons for her children.

Mr Junior, however, felt that he already had a degree of agency before being involved in the scheme when asked whether the adaptations made during the LS process would have happened naturally with time. For example, he later explained that he had made changes to the language used in the MM scheme and this was not from his LS group’s engagement with research. Ms Send also divulged that not all of her adaptations were a result of LS. Although a hint of cynicism of LS was detected in Mr Junior, he did concede that being involved in LS

enabled him to try out language variations in his teaching, which he might not have done ordinarily.

Ms Send was more positive about the sense of agency she felt she gained from LS. She explained how the second LS cycle that she was involved in enabled the group to adapt MM to include problem-solving skills rather than using the six-part lesson to teach a one-off problem-solving lesson. From an analysis of the slides sent by MM and Ms Send's adapted slides, changes were noted and asked about in the interview. For example, she said that from engaging with research, she has now included variation in the representation of mathematical concepts, the visualisations of which came from a research paper. The symbols she was able to add from this research engagement are now always added to each slide of the MM lessons. She later connected this freedom to adapt with her participation in LS. An outcome of collaborative research that Maxwell et al. (2015) found was a sense of ownership in the issues being focused upon and the potential solutions to these. This in turn was linked to enjoyment and motivation by their interviewees. This may explain Ms Send's positive perception of LS as she saw it as a platform for identifying a problem, as well as a way of solving that problem.

One simple solution gleaned from LS was the adaptation of 'star words' (the mathematical vocabulary needed for each lesson). In the interview with Ms Send, she emphasised how she had learnt from her research that vocabulary helps with solving problems so it was important to facilitate the children's use of 'star words'. From research, she also learnt to put the key vocabulary in context so the use of star words in the MM scheme was seen as ineffective as they were not emphasised in relation to the concepts being taught. In the second Research Lesson, the group trialled printing star words on card to have on tables but as Mr Koshi pointed out in his evaluation, this was too time consuming. An alternative method of displaying key vocabulary on each slide is now employed and was evident in the adapted lesson plan that Ms Send sent to the researcher. In the interview she demonstrated how research has been used in the adapted lesson plan and noted that being able to change the use of star words has been the main positive outcome of engaging with research through LS and that her pupils' use of vocabulary had improved as a consequence, though this could not be substantiated.

Engaging in research to generate evidence of favourable changes is part of some versions of LS and this element has been linked to teachers feeling more able to take risks in

their teaching (Hall, 2014) but engaging in research in a systematic way was not part of LS at TPS. The main thrust of this form of LS was to *re-search* new pedagogic approaches, some of which came from engaging with research according to Ms Send. Ms Send thought that her teaching had improved because LS had given her the opportunity to vary how she used vocabulary, being able to try this out in LS but admitted that this was in conjunction with the changes that one always makes as a professional. Ms Send said that although she does not vary each MM lesson too much, what she has changed had been tried out in LS.

The version of LS used at TPS had the potential to allow teachers to discover and develop effective teaching and learning strategies for themselves but the extent of teacher agency in developing research-informed changes to their practice was dubious. When Ms Send was asked where she accessed the research used in LS, she remarked that she found Google Scholar so overwhelming that she became reliant upon the MM website as she ‘wanted somewhere that was a bit more refined’. Furthermore, Mr Junior remarked that Mr Koshi signposted ‘where we could find research from’. It is questionable as to how autonomous teachers are when they are restricted to what research they are exposed to. This lack of agency to source research independently was also identified in Coldwell et al.’s (2017) evaluation where one school relied upon an academic at a local university sourcing research evidence for their LS.

In summary, the two participating teachers had made changes to the MM scheme but this was not always as a result of LS. They did both believe that participating in LS had given them opportunities to try new things, which is what Hall (2014) also found from interviewing heads of departments and teachers who were involved in LS. It seems that it was Mr Koshi’s *re-search* of Ms Send’s Research Lesson that influenced her use of key vocabulary in lessons, although this was not identified by Ms Send, who focused upon the impact of her engagement *with* research during LS.

Aspirational Outcome Three: pupil confidence

The evaluation has thus far been focused predominantly upon the process of research engagement via LS and now turns to the outcomes of this process, starting with Mr Junior’s class. A pupil outcome that Mr Junior thought had occurred was that he could now instil confidence in his pupils so they are able to approach a mathematical problem straight away rather than be discouraged by complexity; however, there was no evidence that it was in fact

LS that had caused this. Through LS, Mr Junior had explored the teaching of problem solving as an explicit process, which pupils were then encouraged to talk through in an act of ‘productive struggle’ when posed with puzzles, rather than presenting children with questions to be answered individually. These elements of maths pedagogy were informed by evidence and *re*-researched during LS to improve teaching and learning, which Mr Junior thought it had.

In the LS cycle that Mr Junior was involved in with Ms Send, the main objective was to develop the teaching of problem solving and Mr Junior exclaimed that ‘research definitely helped with teaching problem solving’. The only evidence of teaching problem solving that was witnessed in the observed lesson was when some pupils who had been struggling were brought up to the front of the classroom to receive additional teacher support. This could be seen, however, as standard pedagogical practice and not necessarily a result of LS. In the focus group, one boy said that it was homework that made him confident in class and, again, this was not due to LS but is usual practice according to the *Team Handbook*.

Pupil confidence was enquired about in the focus group with Mr Junior’s pupils but again, this could not be traced back to their teacher’s research engagement in LS. As an ice-breaker at the start of the pupil focus group, the children, given pseudonyms here, were asked to introduce themselves and something they were proud of in their maths books as it was hoped that this would settle the children and spark a discussion of what helps them in maths. ‘Lewis’ told of how he was proud of what they had done in the lesson they had just had because he said he wanted to ‘get it’ straight away and achieved this goal. He appeared confident to approach a problem because he was motivated but also because he said it was easy. The rest of the group was asked whether they were confident in what they had been doing in the lesson and they all nodded. Another pupil who spoke of confidence when presenting what he was proud of was ‘Michael’, who told of how he is not usually confident but was pleased that he was able to do that particular task. Michael could not articulate what made him feel confident but ‘Kyle’ suggested that for him, it was the ‘Maths Meeting’ at the beginning of the lesson that made him think ‘I can do that’. The importance of Maths Meetings is detailed in the *Team Handbook* and is not from LS. Doing Year 6 work, which is what was mentioned by Mr Junior in the lesson, was also seen as a factor that increased their confidence. Knowing this made Lewis ‘feel a bit grown up’ and Kyle said he was shocked when Mr Junior said they were working through problems that used to be for Year 6s and that this made him feel proud. These factors cannot be attributed to Mr Junior participating in LS, however.

There were, however, examples of children confidently approaching mathematical problems, as intended from LS. For example, pupils were observed estimating 'one third' on a number line and did not appear disheartened when they realised they were wrong. Pupils were also observed quickly writing down their answers in response to a question posed to the class and one pupil confidently raised their hand straight away when a verbal response was required. One girl was clearly so confident in what she was doing that she jumped ahead, prompting the boy next to her to exclaim 'oh yeah!'. This peer support was brought up by Kyle in the pupil focus group. Kyle told of how he talked through a problem with his partner to figure it out, thus implying that encouraging pupils to talk through slight struggle, as explored in the Lesson Study that Mr Junior and Ms Send were involved in, is making a difference to their learning. Ms Send explained that in the Research Lesson they were 'trying to build up that vocab [sic.], that mathematical discussion' from what they had researched and this has clearly continued.

Enabling pupils to discuss maths with each other to build up confidence was a focus for Mr Junior's LS, which sought to explore ways to 'incorporate problems and puzzles to inspire' children and this may have been fulfilled. Building up pupil confidence in this way was prompted by a research paper cited in the Lesson Study Plan of Mr Junior's LS team. It was of a research project that asked the question 'what is maths?' to children; the answers received led the researchers to conclude that children think maths is about learning rules to pass tests. From their engagement with this research, the LS group decided to make the MM lessons 'more interesting' in the words of Ms Send so learners would be eager to solve problems rather than seeing maths in a negative light. For example, Mr Junior explained that he added a 'spot the mistake' activity to the MM lessons and 'how many different ways can you represent a number'. By way of evaluating whether Mr Junior's pupils were indeed inspired in their maths lessons, the same question 'what is maths' was asked in the focus group. In response to this, most pupils looked at their maths exercise books for prompts, leading to answers such as 'times' and 'add' because these were the symbols depicted on their books but there were some insightful responses too. Michael and another boy known here as 'Nathan' associated maths with 'finding out things' and Lewis and Kyle referred to maths as 'useful'. These pupils clearly equated maths with discovery rather than passing tests so the aim of the Lesson Study pertaining to 'inspiring' pupils can be seen to have been fulfilled. Whether this can be linked back to the increased confidence that Mr Junior wanted cannot be known.

A poignant response to the question ‘what is maths?’ was from Kyle, who expressed that ‘it’s quite hard’, which can be potentially interpreted as ‘productive struggle’, another intention mentioned in the Lesson Study Plan. Although Kyle expressed that he thought the work they had just done was ‘really, really tricky’, he did achieve a lot, to his surprise. Succeeding through the ‘productive struggle’ that had been incorporated into Mr Junior’s lessons since LS may improve the confidence of these children in future tasks but this was beyond the timescale of this evaluation.

Another strategy tried in LS was the use of alternative representations of numbers (e.g. one whole number is four quarters) as this was seen as a way for pupils to gain confidence in understanding the composition of numbers; however, this may have actually impeded the development of confidence in solving mathematical problems. Some confusion was noted in the lesson observed when children were representing fractions in different ways (as they have been told to do and as featured in the Research Lesson) but they were told not to do that in this lesson as the focus was upon mixed numbers (i.e. a whole number and a fraction rather than just fractions). In the focus group, Kyle said he found this confusing and thought that any representation was acceptable.

As has already been explained, a change made by teachers from LS was the display of ‘star words’ on the board throughout the lesson, though the perceived positive impact of this was not observed. Some children, although appearing confident in using the language they had been prompted to use for the ‘talk task’, did not have the conceptual understanding of the meanings of the words so were using them incorrectly. When this was reported back to Mr Junior in the interview, he did explain that he usually had a TA who would be able to listen to the other half of the class to correct any misunderstandings. This is important as there could be a danger of instilling false confidence if pupils are not corrected.

Mr Junior believes that LS has improved teaching and learning, and when asked whether that outcome would have occurred anyway due to the changes one is always making as a professional, he responded that it is ‘the variations tried in LS’ that made a difference, linking back to teacher autonomy from LS. Confidence in approaching maths problems was observed but it seems that it is mastery techniques that help with this, rather than changes brought about via LS. The focus group suggested that pupils feel positive about maths and see problem solving as central to this, which is what was hoped for in the March 2017 LS. In

this regard, LS enabled Mr Junior to try new ways of posing mathematical problems to his pupils, which he felt had made a difference to his pupils' confidence.

Aspirational Outcome Four: teaching efficiency

The main outcome of Ms Send's involvement in LS that she expressed in the initial interview was being more efficient in her delivery of the maths curriculum. Ms Send was reluctant to corroborate that efficiency was an intention, or a success, in the second semi-structured interview, possibly because she did not remember declaring this in September 2017 as the second interview was not conducted until February 2018. What Ms Send did explain in this interview was that she now has the agency to adapt questions to increase the pace of lessons and by using strategies from her research in LS, she gets to the 'talk task' faster.

Since LS, Ms Send now feels able to adapt the pace to suit the needs of her class and this was through LS allowing her to look closely at her pupils' learning, conceptualised here as *re*-researching, rather than existing research informing her practice. The documentation for the 2017-18 LS programme highlights the learner-focus of LS that requires teachers to 'look at students' thinking and learning' to give teachers 'ways to think about planning lessons'. From her experience of LS, Ms Send said she now thinks 'about parts of lessons now and what they're useful for', feeling able to take slides out of the packages of lessons that are sent to the school by MM. She also omits what is already known, rather than returning to concepts as she feels this would confuse some of her pupils with SEND, although this is a strategy she uses as standard and has not acquired through LS.

Ms Send admitted that she still needs to follow the prescribed lessons to a certain degree but LS gave her the agency to change the way she delivers the MM scheme, making it more efficient. Although the main content of the lessons is standardised by MM, Ms Send said she has 'heavily changed and altered' the overall scheme of work, seeing LS as a vehicle to improve the prescriptive MM programme. An outcome is that she is abandoning lessons less often, which is what she had done in the past when her class could not access the resources devised by MM. A projected result of this outcome might be that her SEND class could progress further in their attainment in maths because they would have covered the basic content faster, although this could not be substantiated in this evaluation.

An intention of the second Lesson Study was for children to deepen their thinking by making links between different representations of mathematical concepts, thus allowing new

material to be grasped faster. In the interview, Ms Send explained that teachers' perceptions of deepened thinking were explored via engaging with research in LS and she now teaches her pupils to look at problems from different angles, believing that learning different ways of working through problems helps them later. This is a technique that Mr Junior must have gained from LS too as one of his pupils, Michael, in the focus group said of mathematical problems that 'if you want to check using another way, you can'. By comparing the original Master Maths lesson plan to the plan Ms Send adapted and sent to the researcher, it was evident that she had included an extra representation of fractions. In the interview, she explained that by engaging with research through LS, she learnt that this reinforces the 'part-whole model'. She believed that completion of units is timelier because the lessons are now more accessible, which, again, may allow the class to move on to the next level of mathematical learning.

Ms Send could not say that she had taught more of the MM curriculum by February 2018 compared to February 2017 as her SEND class does not learn in the same linear way as a mainstream class. However, she believed that she is more efficient in delivering the MM scheme now, which could affect change at a later point, but is beyond the scope of this evaluation. What can be deduced is that her aspirational outcome of teaching efficiency is linked to the agency that she now feels she has to create a more tailored curriculum for her unique class.

4.4.4 Conclusions from phase three

There were difficulties in evaluating research engagement, as anticipated from Rea et al. (2015b), who proposed focusing upon the reflections that participants have of their experience and their willingness to repeat it as a CPD activity. Ms Send certainly perceived LS to be beneficial as she repeated her involvement in the scheme beyond the minimum requirements for her performance management. As well as these teacher reflections captured in the semi-structured interviews with the participants of this user-focused evaluation, a lesson observation and pupil focus group intended to witness the impact of LS impacting teachers' daily practice. This was evidently important for TPS as this paper featured in a document for the LS cycle for the 2017-18 school year but the teaching practices encountered in the evaluation could not be attributed to LS. The evaluation, however, did establish the

potential of LS as a form of research engagement, both for organisations like MathsNet and for schools like TPS.

MathsNet's research engagement

The research engagement across MathsNet via this LS project can be theorised using Cain's (2015) tri-focal framework of the purposes of research engagement. The Lesson Study of 2016-17 can be viewed as 'instrumental' as research was used to find solutions in the Lesson Study cycle but also 'conceptual' as LS provides a platform for teachers to examine critically the strategies suggested by research before trying them out in their Research Lesson. The extent of their criticality is debatable, however, as they trusted research sourced externally, i.e. by Mr Koshi or MM, which was not critiqued.

The third category in Cain's (2015) trio of research engagement reasons is 'strategic', whereby teachers find research to justify what they already do. This was witnessed in a different school involved in the LS project, as evidenced in a Research Lesson plan, where teachers cited research to justify choices made in the lesson plan and how a lesson may deviate from the plan. Whilst this is a valid form of research engagement, what teachers do at TPS may be perceived as more purposeful and proactive, rather than retrospective.

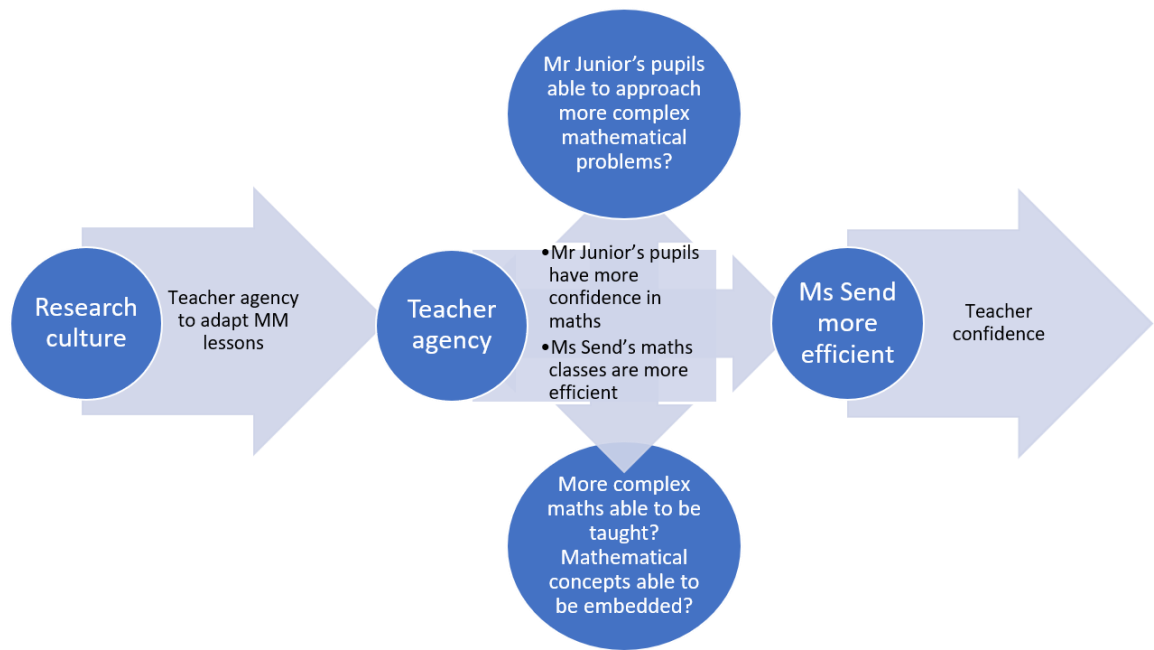
The school's research engagement

Whilst Cain (2015) may be useful in theorising research engagement in MathsNet as a whole, the theoretical framework for this thesis (based upon Carr and Kemmis, 1986) may be returned to when focusing specifically upon TPS. Teaching Primary School's research involvement in LS encouraged teachers to *re-search* (or reflect upon) current practice, engage *with* research (to plan for improvements), engage (implement) findings *from* research (in a Research Lesson) and reflect upon the Research Lesson (*re-search* again). LS was being continued in TPS during the academic year in which this evaluation was conducted but from what Ms Send said, there was not much engagement with research this time. The focus this year was on English and appeared to focus around training pupils in the types of questions they will encounter in their standard attainment tests (SATs) as the aim this time was for an increase in test scores. In a way, research is still taking place but can be identified as '*re-searching*' (past and practice test papers) rather than engaging *with* academic research. The final stage of research engagement, engaging *in* research, is missing, however. This is not the

case in other forms of LS, where an evaluative stage is integrated into the Lesson Study cycle by teachers collecting their own data (Dudley, 2011). Burford et al. (2013), however, found that there is still a need for a professional researcher for design, analysis and validity.

If evaluation had been built into LS from the start, additional data could have been collected to further evidence the experience and outcomes but would have been narrow in scope. In a report by the NCTL (Maxwell et al., 2015, p.28), the researchers of 'working parties' of a teaching school alliance, akin to the LS teams at TPS, critiqued the initiative for the absence of 'rigorous measurement of the impact of changes made as a result of the activity'. Furthermore, this kind of teacher research, as opposed to the research of an outsider, may not have illuminated an unintended consequence of research engagement via LS. Although Ms Send's aspirational outcome that was articulated at the beginning of the evaluation was more efficiency in her teaching, she also expressed how LS had improved her confidence as a professional. This, therefore, can be identified as an unintended 'process' outcome of LS. In the interview, Ms Send explained that the first LS cycle she was involved in brought her closer to answering the question of 'how can we develop the teaching of problem-solving skills within a 6-part lesson?' so she does 'feel a lot (*pause*) clearer'. She also said that she is 'probably a bit more confident about teaching'. Ms Send concluded that she is confident that lessons have 'improved hugely' through her engagement in LS, which could be due to the process of *re*-searching and engaging *with* research as well as having the agency to improve the efficiency of her teaching. In lieu of concrete data, a theory of change (Fig. 20) has been proposed, indicating the extent to which TPS's version of LS met the aspirational outcomes of the participants. Each circle represents an outcome and the arrows indicate how these 'products' are linked to further achievements.

Figure 20: theory of change



Taking the LS process further, with teachers engaging *in* research by collecting data to evidence whether or not changes made via LS are making a difference, might be a way forward, although Coldwell et al. (2017) concluded that no research-engaged school that they evaluated could demonstrate the impact that their evidence-informed teaching had. Nevertheless, there is potential in research engagement, depending upon the perceptions and practices of those involved, which are outlined in the Discussion chapter next.

Chapter 5: Discussion

This chapter of the thesis synthesises findings from all of the research methods that were employed to understand the perceptions, practices and potential (or implications) of research engagement in England's evidence-informed teaching profession. There is a section dedicated to each strand, culminating in some concluding thoughts ahead of the more general conclusion of the whole of this doctoral project in the next chapter. First, the research question 'How do teaching practitioners in a variety of settings perceive research engagement?' is addressed, by exploring participants' ontological and epistemological views of the knowledge that can be gained via research engagement. The second research question, 'How can socio-cultural factors in schools influence practices of research engagement?' is then answered by outlining the enablers and constraints of research engagement. Finally, attention is turned to 'What potential worth can research engagement have for teaching and learning?'. This section (5.3) starts with teaching and learning in the broad sense of pedagogy, then focuses upon how the process of research engagement can have an effect on teaching as a powerful form of CPD. This not only impacts upon the notion of teaching as a profession but is also beneficial for individuals in their personal and professional lives.

5.1 Perceptions

Perceptions of how 'knowledge' is perceived must first be established before presenting how teachers perceive the acquisition of this knowledge via different forms of research. Therefore, the perceptions that participants had of research engagement will be organised into ontology (understandings of knowledge) and epistemology (ideas of how this knowledge may be obtained). Each of these subsections is structured according to the theoretical framework based upon the work of Carr and Kemmis (1986) to exemplify how participants perceived research engagement along this continuum of *re*-search – engaging findings *from* research – engaging *with* research – engaging *in* research.

5.1.1 Teachers' Views about Forms of knowledge

In a study of teaching as an evidence-informed profession, it is necessary to establish the ontological perspectives of participants. The findings revealed that these may be linked to teachers' access to different forms of knowledge, for example in ITE, which may privilege knowledge from reflective practice (*re-search*) if the programme is school-led rather than university based. For in-service teachers, especially those with HE connections, the results pointed to a tendency to favour theoretical knowledge from academic research over knowledge from *re-search*. However, the study revealed that engaging knowledge *from* research can become dogmatic if senior leadership promote their perception of what knowledge is, at the expense of a broad ontology developed by teachers with the agency for their independent studies to make a difference in their practice. When senior leadership value the expertise of teachers, however, there can be engagement *with* research in the form of a professional dialogue between research and practice, which may allow new, contextualised knowledge to be formed. New knowledge can also be gained via teachers engaging *in* their own research but, as will be explored, the ontology of senior leadership can influence the kind of knowledge that is produced, which may fit their own world view but is incommensurate with the desire for teaching to be an 'evidence-informed *profession*' (DfE, March 2016, p.37), which assumes a degree of autonomy in comparison to teaching as an occupation.

Knowledge from re-search

What some teachers perceived as knowledge from research can actually be identified as knowledge from *re-search* as it originates from teachers reflecting upon their practice and sharing their insights for other teachers to make use of. It has been suggested that teacher education in England is more focused on facilitating the acquisition of practical knowledge rather than research-informed knowledge (Beauchamp et al., 2013) and this was evident in the differences between how Ms Diploma spoke about academic knowledge and Ms Scitt preferred more practical knowledge from the general media. This finding would resonate with Hordern's (2016a) claims that linked the distance between the singular disciplines in education with teaching practice being based upon techniques not founded in evidence but popularised by influential practitioners, for example via social media. Whilst knowledge from the media may be identified as *re-search* if it involves practitioners reflecting upon their

teaching, Ms Research warned against only relying upon these. However, such criticality was not encouraged by Ms Deputy at SRS.

Ms Scitt's privileging of knowledge from re-search may be due to her ITE programme. In a report on the impact of TSs (NCTL, March 2014), a SCITT course was praised for its 'constant cycle of research, implementation, feedback, reflection and action planning' (ibid., p.7), apparently allowing for a closer link between theoretical and practical knowledge. However, this 'theoretical' knowledge is not from formal research; rather, it involves the facilitators (current teachers) 'drawing from up-to-date personal experience' (ibid), which may be identified as re-search. Although there was some input from an HEI in Ms Scitt's ITE, this was in the training of research methods rather than the use of academic research. School-based ITE, therefore may colour teachers' view of what research is for their future careers, as opposed to more academic routes, like that undertaken by Ms Diploma, where formal research from academics is more valued.

Re-search being valued by some teachers but dismissed by others may be linked to access to different forms of knowledge. For interviewee Mr Send, the reflective practice that he and his colleagues were engaged in, which he called 'action research', were more relevant than findings from someone else's academic research. Both Mr Head and Ms Research, however, favoured knowledge from academia, perhaps because they both had access to academic outputs from HE and an academic association respectively. Ms Research from PRS was critical of the teacher-led movement, ResearchED, doubting whether it counted as 'research' at all. Their website, however, was perceived by Mr Research at SRS as a useful resource. Coldwell et al. (2017) found it interesting that ResearchED was not mentioned by participants in their evaluation of progress towards an evidence-informed teaching profession. This doctoral study might provide an explanation for this by identifying it as more of a platform to share re-search, rather than it being considered by teachers in Coldwell et al.'s (2017) study as the conduct and dissemination of research, which is what they were enquiring about.

The findings therefore suggest that some teachers view knowledge from re-search as more practical and accessible. Policy-makers are also now recognising the value of teacher expertise as the new Early Career Framework makes it clear on almost every page that the guidance has been formed from a wide evidence base that includes practitioners' ideas as well as academic research (DfE, 2019). There are, therefore, implications here for academics

as the evidence they produce from more formal research may become subverted by this more ‘ubiquitous re-search’, which they could in fact harness through collaboration with teacher-researchers.

Engaging knowledge from research

The study found that for those teachers valuing the more academic research conducted by external others, for example at the two RSs, the knowledge base used was limited to that derived from RCTs. Knowledge from this research method was couched in terms of definitive answers to problems faced by teachers, therefore not requiring critique. Although acknowledging the use of teacher expertise, Dr Pico at TaRC promoted the ‘what works’ agenda, which has become part of the discourse in education according to Biesta (2007a). As in the literature, Dr Pico used the medical model (Hargreaves, 1996) to explain why findings from RCTs should be perceived as reliable sources of knowledge, which according to Biesta (2010) have become regarded as the only source of ‘what works’. This was certainly the perception of Mr Research, who wanted to implement knowledge that was only from RCTs, with no critique required because he was sure this knowledge was credible. This is what Hordern (2015, pp.438-9) has called the ‘craft conception’, which allows for the hegemony of a knowledge base preferred by an organisation or ‘dominant voices within a particular hierarchy, with limited scope for entertaining the possibility of alternative perspectives’. Kushner et al. (2001, p.19) found that in one School Based Research Consortium, there was ‘an overly narrow definition of pedagogic research, which had then had a negative effect on the level of enthusiasm amongst the teachers involved’ but this impact upon teachers at SRS was not detected.

Quantitative data more generally were privileged by teachers at SRS and Ms Diploma spoke about using strategies in her teaching from research that had convincing quantitative data. Coldwell et al. (2017) found mixed opinions regarding quantitative data, which, for some, provided clarity. Badiou (2014, p.33) called this a ‘necessity for realistic calculations of security’, which poses an obstacle for teachers to be more philosophical in their use of knowledge. For others in Coldwell et al.’s study (2017, p.40), quantitative data were ‘static and unreliable when pupils/ classrooms are complex and changing’. These contextual nuances may be taken into consideration in RCTs and indeed this was recommended by Koutsouris and Norwich (2018).

When knowledge from research is valued over teacher-generated knowledge, therefore, there seems to be a preference for positivist research with little critique of the findings as they are presented as indisputable facts. This, therefore, undermines teaching as a profession as teachers are passive in this utilisation of ‘facts’. There were teachers in the study, however, who did actively engage with research rather than passively accepting knowledge gained from research as fact, as explained next.

Engaging with research

Teachers involved with HEIs were found to be more critical of research, though there are other influences that can affect this engagement with research. Ms Academy and Ms Scitt highlighted the importance of critiquing research, though Ms Scitt then talked about this in relation to articles from the media rather than the academic research that Ms Academy was referring to. This difference in the definition of research could also explain why school-based student teachers like Ms Scitt rated their training in accessing, assessing and applying research more highly in the survey than student teachers on HEI-led courses. Ms Diploma, by contrast, referred to the use of academic papers, as did Mr Head, who had completed a Master’s degree. Mr Head, however, did not seem to critique the research itself but relied upon the reputation of the journal and the researchers to determine credibility. Whilst having a connection with HE might, therefore, encourage criticality, this may be surpassed by socio-cultural factors relating to the other networks within which teachers belong. Academic experience, can, therefore influence perceptions of what research to engage with, though this can also lead to complacency and the absence of critique.

Critique of research at PRS and TPS meant engaging with research by re-contextualising this knowledge. Hordern (2016b, p.461) acknowledged that the use of what he called ‘specialised knowledge’ depends upon whether practitioners can reconcile this with what they experience in their own practice. Ms Research at PRS wanted the attendees of her research seminars to use knowledge of their own practice to engage with the abstract knowledge being presented by visiting academics. Teaching practice itself has been seen as a source of knowledge by Hordern (2015) but only when underpinned by deeper, academic thinking. This was the intention in TPS, using LS as a way for teachers to connect academic knowledge with their own teaching practice.

For interviewee Mr Send, however, engaging with knowledge from academic research was not as preferable as teachers discussing their own ideas generated by their *re*-search. Hordern (2016a, p.433) has warned against the recontextualisation of current practice rather than recontextualising what he called ‘purer disciplinary knowledge’ (in education, these are singularly: sociology, psychology and philosophy). For teachers to be professionals, they should have full access to this disciplinary knowledge and critically engage with what they find in order to transform that knowledge for use in their own practice. When delivering training at SRS, Dr Pico included teacher expertise as part of the wider knowledge base that teachers should be using, which is obviously readily available from colleagues. Combining ‘knowledge of research and professional hunches to create the best possible learning experience for the students’ was found by Herrenkohl et al. (2010, p.88) to be successful but the participating teachers had links with academics, which was not common for the teachers participating in this doctoral research.

Engaging in research

For some participants of this study, knowledge came from teachers engaging *in* their own research but this knowledge was not as valued as that from *re*-search (for some) or academic research (for others). Research-engagement practices relating to engaging *in* research were the least valued by survey respondents, implying that knowledge gained from more informal *re*-search is preferable as practices categorised as this were rated higher on average.

Where engagement in research *was* witnessed in this study, there was a difference of opinion as to the knowledge that can be yielded and this appears to be linked with academic background and input. Ms Diploma had academic input in her research for the PGDE but did want the certainty of quantitative data, perhaps because of her academic background in psychology before starting her teaching career. At SRS, where there was no HE-input, there was a narrow perception of the knowledge that can be produced, which was predominantly the efficacy of one teaching strategy over another by comparing pupil test scores. For Ms Academy and Ms Scitt who had conducted Master’s research, however, quantifying the impact of an intervention was not the outcome they desired, nor did they think it was even possible to do this.

On the other hand, engaging in research using a form of RCT was thought to provide conclusive solutions to problems in the teaching profession, particularly in the RSs studied.

This runs contrary to Kushner et al.'s (2001, p.22) assertion that 'the 'evidence' in 'evidence-informed practice' may take different forms: relatively little of it may be in the form of research findings that can be expressed as clear propositions'. Dr Pico's formula, used by teachers of SRS to formulate their research questions, is geared towards a tangible outcome that can then be replicated if favourable. Both SRS and PRS assumed there will be positive outcomes of their trials; for example, RPS's blog states that the schools in the control group of their RCT will receive the 'treatment' after the trial, presumably whether it is a success or not. Ms Research called this a 'control group wait list'. Biesta et al. (2019), in an editorial for the British Educational Research Journal, called for research that poses rather than solves problems as this is, in itself, a form of education for those posing the problems; however, this was not how research was viewed in the two RSs studied. There is, therefore, a disparity in how academics view the purpose of research and how this is seen in the field where there are accountability pressures.

Overall, it appears that teachers in the study valued knowledge from re-search if they did not have access to more formal research and sometimes referred to this as 'research', either conducted by themselves or other teachers. Those who did engage in more formal research either did so to produce definitive answers or for more exploratory reasons and this was affected the influence of HE, or not as the case may be. The implications of these findings for the first research question on 'perceptions' are discussed in the conclusion of this section. For now, the next subsection explores the forms of research engagement that produce the knowledge outlined here.

5.1.2 Forms of research engagement

This next subsection mirrors its predecessor in using the continuum from Carr and Kemmis (1986), with the addition of engaging in the research of others as a form of research engagement neglected in other studies. It also touches upon the research practices of teachers, therefore begins to answer the second research question, whilst maintaining focus upon teachers' perceptions as in the first. Each subsection also has the inevitable parallels with the ontological views outlined above as they are inextricably linked with the epistemology explored here.

Re-searching

Though some teachers perceived what they were doing to be engaging *in* research, their practices have been identified here as *re*-search as they were more about reflecting upon practice rather than systematically collecting and analysing data. Others (Ms Scitt and Mr Junior in this study and some participants in Kushner et al.'s (2001) study) did not see reflective practice as research at all and equated this with what they would ordinarily do in their PD. Interviewee, Mr Send, believed that trying strategies and sharing one's reflections on the outcomes of these trials was a beneficial form of research engagement. Participating teachers in TPS found the *re*-search that was possible in LS to be beneficial. This research-engagement activity also included the use of existing research and it is the perceptions of this that is dealt with next.

Engaging research

There was a lack of criticality in research engagement for some participants, who perceived being 'evidence informed' (DfE, March 2016) as basing teaching practice on evidence from research alone. Dr Pico at SRS's Teachers and Research Conference used a discourse of 'evidence-based practice', even when referring to the DfE's (March 2016) White Paper, Educational Evidence Everywhere, which employs the phrase 'evidence-informed' teaching throughout, with active connotations. Similarly, Ms Deputy from SRS was dismayed with evidence never being put to use in her own school, indicating that she thought this was the ideal. For Ms Research at PRS, the research presented at the seminars she hosted was not intended to be used straight away but was more of a slower, intellectual process.

Another influence upon teaching is the popularity of researchers, which can preclude critique of their research, leading to the perception that research has been engaged *with* when really teachers are passively engaging findings *from* research. The absence of critique has been blamed for the development of short-lived fads in teaching (Hordern, 2016b) that are implemented due to popularity rather than reliability of evidence. For Mr Head, the credulity of evidence was based upon whether he was familiar with the researchers and the journals in which they had published. Ms Research, however, advised readers of her blog to critique research, especially if it is by a familiar writer.

Engaging with research

There was mis-placed confidence in Mr Head's critique of research, referred to above, and this is worrying when it is considered that engagement with research was mainly done by members of the leadership team in the two RSs studied. Coldwell et al. (2017) found that senior leaders said they were 'confident in judging the robustness of research quality', whereas other teachers perceived that they lacked this skill, though the research team did not consider that this may be due to inflated confidence of senior leaders and concluded that criticality was a feature of senior leadership. Ms Research identified the importance of 'research literacy for all' in the BERA-RSA (2014) report but no attempt to up-skill her staff in this was witnessed, leading to her frustration that attendees of the research seminars did not feel able to refute claims made by visiting academics. If teachers are enabled to critique research i.e. engaging with research, they may be more experimental and critical with a more developed understanding of evidence and ethics (Cain, 2015) but this equity between teachers and leaders was not witnessed in this doctoral study.

Unfortunately, the data suggest that teachers do not feel enabled to engage with research. The survey findings in this study suggest that training or CPD in assessing the robustness of research is not as highly rated as accessing and applying findings from research. Even in TPS and PRS, where there were opportunities to discuss research, there was no training for this. Like the survey findings from this doctoral research, Hammersley-Fletcher et al. (2015) found that from 156 survey respondents who were asked about the research practices of their schools and the value that they placed upon these practices, engaging *with* research, rather than engaging *in* research, was more important. However, not many of their respondents were enabled to participate in the exercise they valued i.e. discussing existing research. In SRS, the focus was upon engaging in research, at the expense of carefully engaging with research, as Ms Academy's Master's degree had encouraged her to do.

It is not necessarily the influence of HE, however, that enables teachers to engage with research as Mr Head had a Master's degree but did not critique research in a way that would be familiar to academics. Whilst academia can help teachers to be more critical, this is not a guarantee, so it is, perhaps even more of an issue for those without this Master's education. It is recommended, therefore, that critique of research is embedded in the CPD of

teachers, which HE may be able to facilitate, as detailed later in the conclusion of this section.

Engaging in research

The two RSs were similar in encouraging members of their leadership teams to engage with research, who then disseminate to colleagues, but they had different perceptions of who should conduct research. Ms Research from Primary Research School (PRS) did not think all teachers should engage in their own research, as was the norm at Secondary Research School (SRS). Research by Teach First (2017, p.16) reported that some interviewees, leaders of research in schools and universities, were ‘highly sceptical of teachers undertaking research themselves’. Like Carter (2015), participants in Teach First’s (2017) study also proposed that rather than ITE focusing upon student teachers conducting their own research, teachers should be familiar with research methods for their engagement *with* research. As those interviewed in their study were leaders of research in schools (like Ms Research) and academic researchers, it could be that they felt threatened by the prospect of more teachers being involved in the production of new knowledge via research. Teach First (2017) concluded that student teachers should be taught useful evaluation methods rather than focusing upon academic research, which was presented as dichotomous to evaluative research.

The EEF’s DIY Guide was recommended in Teach First’s (2017) report as a useful framework of evaluation for new teachers and this was also promoted at SRS, though towards the end of the ethnographic study, Mr Research expressed the school’s frustration with this tool. He preferred the school’s own way of evaluating the success of an intervention by comparing the progress of two parallel groups in pseudo-RCTs. The perception that there is only one way of producing valid knowledge was called ‘methodolatry’ by Higgins (2016, p.233). Teacher-researchers at SRS bypassed the training that a researcher would have had in choosing and adapting the most appropriate methods. Respondents in this study’s survey valued ‘familiarity with a range of research methods’ the least, which is perhaps why one particular research method, the RCT, has been able to gain prominence in the teaching profession.

Not all participants shared this preference for RCTs, however, and this could be linked with the influence of HE on these individual perceptions. Ms Scitt derided the idea that

a control group could be used in teacher-research and a similar opinion of quantitative data was held by Ms Academy. As already noted, the perceptions of the kind of knowledge that can be gained from research may be linked with HE background and input and this translates into the epistemological decisions made by teacher-researchers as well. In the research-engaged schools evaluated by Coldwell et al. (2017, p.31), there were a variety of ways in which teachers assessed the impact of research use, ranging from ‘noticing’ changes to measuring differences with a control group but the HE connection is overlooked.

Conducting more academic research was seen as unnecessarily onerous, mentioned several times by Mr Send and a survey respondent. The TS that Rea et al. (2015a, p.93) studied wanted to change teachers’ perceptions of research as academic and removed from practice so they could realise that ‘the kind of investigations they were undertaking as part of their trio groups clearly fall into the category of research’. This is similar to the LS practised in TPS, though that is identified in this thesis as *re*-search since although teachers were investigating in groups by engaging with research, no data were formally recorded.

There was a perception that to engage in research formally, funding is needed. This was either to invest in research instruments and analytical software (Ms Diploma) or HE programmes (Ms Academy and Mr Independent). Hammersley-Fletcher et al.’s (2015) survey found few respondents thought being funded to conduct research would be useful and even fewer had received funding to conduct their own research. SRS has received funding to trial an intervention developed by a teacher, which would pay for classes to be covered during the research process. Although Ms English-Lead and Mr Research identified this as engaging in research, it appeared that Ms English-Lead would be delivering training on the intervention rather than researching the impact of it, so can be identified as engaging in the research of others, as explored next.

Engaging in the research of others

Despite Ms Research’s scepticism of teachers engaging in research, teachers engaging in the research of others was encouraged. In this way, it appears that teachers would be research participants rather than partners in research, much like Mr Head talked about in his interview. Ms Research revealed that a way of securing speakers at her seminar series was to allow academics to recruit participants for future research. The survey conducted in the first phase of this doctoral research asked how important was ‘being actively involved in the research

process rather than being the subject of research'. This statement was not highly rated by respondents and nor was 'having the ability to analyse data gathered through research', which was rated even lower. This implies that teachers would rather engage in the research of others than be actively producing new knowledge themselves; however, this does not necessarily make teaching an 'evidence-informed profession', unless the findings from that research are implemented by these teachers.

To summarise, some elements of research engagement, as conceptualised in this thesis, were not considered as evidence-informed practice and some that were are dubious. Re-searching was perceived as part of a teacher's regular CPD but if reflections are articulated as part of LS, coupled with engaging findings from research, this is an intricate form of evidence-informed practice that teachers perceive as beneficial. It is more arduous than passively engaging findings from RCTs without any input from the teacher but it is active involvement that makes teaching a profession. Teachers do not necessarily need to enrol on Master's programmes for this level of criticality but it cannot be doubted that there is expertise in HE that teachers who have experienced this do appreciate. Unfortunately, this is often reserved for senior leaders and those teachers who have entered the profession via a school-based route might never have this exposure to academia. The danger of this is the privileging of evaluative rather than explorative research, which can preclude the expertise of a professional teacher.

5.1.3 Concluding thoughts

In answer to the first research question, one of the key points seems to be that re-search is clearly valued by the teaching profession because it is accessible and the knowledge produced is practical. However, there is also the perception that this is not research; instead, to be evidence-informed, teachers need to apply findings from RCTs, as they are also accessible and present practical imperatives. If re-search is to be considered an important part of evidence-informed practice, it would seem important that these supplement the more formal research outputs that are typically produced by academia. If it is accessibility and practicality that make re-search and RCTs appealing, perhaps academics should ensure that their research also possesses these qualities so that teachers feel able to engage with a wider variety of research and not just apply findings from RCTs. Research findings could be disseminated via seminars, like at PRS; and to bring research closer to the classroom, there

could be collaborations with the teaching profession, as will be discussed in the recommendations in the conclusion chapter.

In terms of teachers engaging *in* research, what can be deduced from the perceptions of research engagement is that forms of knowledge, and forms of research to acquire this knowledge, are influenced by key players in a context. SRS's privileging of RCTs may be explained by Mr Research's science background. As found by Menter and Hulme (2010), teachers with backgrounds in scientific research initially found it uncomfortable to work in an unfamiliar paradigm, as related by Ms Scitt and epitomised with Ms Diploma, Ms Maths-Research and Ms English-Research. As the Royal Society and British Academy (2018, p.43) point out, the field of education research has 'an unusual pool of researchers' who have backgrounds in a range of different disciplines other than the social sciences. This variety of expertise should be harnessed by the teaching profession and a plethora of research methods or approaches should be embraced. This will only be possible if teacher education is more inclusive of different research methods, both for teachers to engage *with* and engage *in*. Considering that TSs are increasingly taking on the role of ITE and the TSs studied in this research did not focus upon research methods, it is imperative that something changes before evidence-informed teaching becomes too homogenised. Exposing teachers to an expansive epistemology would broaden how teachers perceive research, which affects their practices, as explored next.

5.2 Practices

The second research question enquires about research practices and the enablers and constrainers of these have been illuminated in the course of this study. They are broadly connected to the infrastructure in schools, related to their status, associated funding and agenda of key school personnel; and beyond the school, in the broader networks to which they belong. However, the latter section in 5.2 also highlights how research practices may be closely related with the motivations of individuals, irrespective of enablers or constrainers within their school and, or the wider community.

5.2.1 School Infrastructure

Research as a Priority

The way schools operate in terms of their research engagement may be attributed to their status, e.g. TS, RS, academy and independent; however, there were less formal school ‘types’ in the data that also influenced how research practices were prioritised. For example, high pupil attainment and staff retention were enablers of evidence-informed practice, whereas schools without these ‘luxuries’ were less enthusiastic about research engagement. This is corroborated in the literature, with Brown and Zhang (2016) finding that schools rated ‘outstanding’ or ‘good’ are more likely to engage evidence-informed practice (EIP).

Some schools in this study made research practices part of teachers’ allocated CPD time, which was seen as beneficial as it was planned into the school calendar so was not an extra burden and did not take away from directed classroom time. Teaching practitioners were engaged in individual enquiries in Mr Send’s school, where TS status was a goal, and in Mr Head’s school were part of research teams. Hargreaves (2010) in a publication for the National College for School Leadership (NCSL) praised both of these practices being part of CPD but a report by its successor, the NCTL (2014), presented the perception from one TSA that working R&D into CPD within the alliance had weakened research and development. This notion may be vindicated as the research practices in the CPD of schools studied can be seen as *re*-search rather than more formal research. In SRS, however, the research practices that were part of teachers’ CPD as well as their performance management were more formal, but perhaps too much so, meaning that teachers felt they had to engage in research practices with which they were not comfortable.

Even when research was a priority in a school, there was still a perception that time to do this needed to be utilised more strategically to do it justice. Mr Junior in TPS felt that he would have liked more time to engage with research thoroughly, which he did not feel able to do in his LS project as he was concentrating on the teaching of the Research Lesson rather than the research behind it. This focus upon the practicalities of teaching rather than research was also picked up by Ms Research who told of how someone had posted on her Twitter page: ‘oh and when we’ve done all this reflective thinking there might be some time for teaching’. Ms Scitt also noted the need for teaching to be prioritised over research, though

speaking practically rather than cynically. Coldwell et al. (2017) also encountered teachers who were dismissive of research as taking time away from the immediacy of teaching, even in research-engaged schools. A solution that both Ms Research and Mr Independent referred to was working research practices around pressure points in the school calendar. This schedule was in relation to engaging *with* research but there was a similar logic behind Mr Independent's view of teachers in secondary schools engaging *in* research. Prioritising research, therefore, should not detract from the primary role of teachers as educators and this is easier to do if schools have the resources and personnel to balance the distribution of labour in the workplace.

Personnel

Having research-related posts as part of the management structure of schools studied was identified as a clear enabler of research practices. For example, having a Director of Research in PRS's TSA as well as a Head of Teaching School enabled the organisation of research seminars. In SRS there was even more of a distributed leadership framework with dedicated posts known as RLs, similar to roles presented in the literature (Maxwell et al., 2015; Maxwell et al., 2015; Rea et al., 2015b). The role of the RLs was to facilitate the research that all colleagues were conducting, much like the 'champions' of LS recommended by Dudley (2014) to facilitate the learning cycle, which TPS had in the form of an external consultant. Mr Independent's school did not have TS status as the others mentioned here did, but he was allocated a similar role as Staff Development Co-ordinator, encouraging his colleagues to research. Having personnel, either in-house or contracted in, enables research practices.

As much as middle leaders played their role in encouraging research engagement in SRS and Mr Independent's school, the onus is still upon senior leaders, however, to ensure that research is a priority (Godfrey, 2016). This would resonate with the studies conducted by Hammersley-Fletcher et al. (2015) and Brown et al. (2018) which established that more needed to be done to ensure the commitment of the SLT for research engagement. Ms Diploma worried that SLT apathy towards research would affect her future research engagement. Some schools show their support by investing in HE on behalf of their staff, as will be explored in the next subsection.

Funding

Just as some schools have a larger budget to expend on key personnel to enable research practices, there was found to be a further cost implication for some of these ventures. The additional management roles in the TSs referred to above were funded by their TS budget, for example. Kushner et al (2001, p.33) anticipated initiatives such as Teaching Schools in 'resourcing schools to manage and co-ordinate research', which TSs are doing in different ways. TPS buying in an external consultant gave teachers access to research papers, via his affiliation with a university, that they would not ordinarily have had been able to access. He was keen to promote membership to the CCT as this would give teachers direct access to published research but this would have to be financed either by individuals or the school, which did not happen during the case study. Mr Research in SRS said that he had enquired about whole-school access to the CCT but again, this had not been completed during my time there.

Having individual access to research was enabled by HE in other schools studied (Ms Academy and Mr Independent's) which again may have a financial implication upon a school's budget that HEIs need to be cognisant of. With the cost of Master's research not being supported by some schools (as Ms Academy found), whole-school initiatives run by school staff appear more feasible but access to academic papers, that Master's students receive (Maxwell et al., 2015) was found to be lacking, as was adequate training in research methodology. The whole-school research initiative in Mr Send's school was cost-effective as there was still the training that students of a Master's degree might get but without the overheads for the school to pay (Foreman-Peck and Heilbronn, 2018). Of course, this assumes that training in research would be adequately provided by school staff, which could not be concluded in the data collected from Mr Send, or SRS.

One reason why SRS chose a whole-school research initiative was because investing in one-day CPD courses were inadequate for embedding improvements, a view also taken at PRS. Thomas (2017, p52) suggested that "HEIs could... discuss with headteachers the merits of investing in funding or partially funding M level CPD in relation to its potential high impact for relatively low cost, in comparison with one-day courses which also incur significant costs for cover and disruption to pupils' learning during the school day". It is imperative that HEIs be proactive in this way as Research Schools like PRS and SRS have the funding to invest in HE but are choosing not to in favour of their own research engagement practices but without the benefits of HE affiliation such as access to academic papers and research expertise.

Teacher Agency

Academic input can enable teacher agency in that teachers participating in a Master's degree have independent access to research that they can feel confident to critique and implement in their own way, as professionals. Without this autonomy to make decisions, teaching can be informed by evidence but would lack the professionalism that would make it an evidence-informed profession. In Mr Head's school and PRS, access to research was limited to senior leaders (see also Godfrey, 2016), who passed information on to their staff, meaning that access to research is 'filtered' (Coldwell et al., 2017, p.26). Though critique of research was encouraged at the research seminars in PRS, teachers were not enabled to assess the research-informed strategies that senior leaders had decided should be implemented in their classrooms. Lesson Study in PRS can be seen to foster teacher agency to discuss research evidence before implementing strategies based upon findings but, again, the research papers had been sourced by Mr Koshi rather than independently. Ms Send explained that she preferred this as open access research outputs were too numerous. For Ms Academy, however, there was no indication of difficulty in using electronic scholarship in the public domain, perhaps because she was able to employ the skills she had developed during her Master's degree. It is not just the agency to access research independently that HE enables, therefore, but another outcome of a Master's degree is the ability to interact with available scholarship even when access to academic papers has expired. This benefit of Master's research was also implied by a teacher interviewed by Coldwell et al. (2017) from a school where all teachers undertook a Master's degree, who believed that this had supported their research awareness so they were not just relying upon the usual research platforms that were often referred to in PRS and SRS.

Teacher agency within a school can also refer to the choices about research engagement that are offered, or not as the case was in SRS and TPS. Some schools studied made research practices mandatory whilst others gave teachers the agency to decide upon their engagement, which was considered beneficial as the timing of teacher-research in one's career can be crucial. In Secondary Research School (SRS), all teachers conducted their own research, supported in groups, which led to some resentment. This was not detected in TPS, where it was compulsory for all teachers to participate in LS, but this may be because the evaluative case study did not give the level of access to the whole staff body in the way that the ethnographic case study was able to do. What was clear in TPS was that some teachers

were more dedicated to research than others in their group, which would imply that research may be best as voluntary endeavours (McLaughlin, 2010; Menter and Hulme, 2010; DfE, March 2016; Brown et al., 2018).

The semi-structured interviews with survey respondents gave a deeper insight into why having the agency to choose when to participate in research practices was important. Family commitments were mentioned as reasons for not being able to dedicate time to research so schools should consider these external pressures when working teacher-research into their CPD framework. This problematises Brown and Zhang's (2016, p.794) study on evidence-informed practice (EIP) as they concluded that an evidence-informed teaching profession will only be achieved when 'practitioners both fundamentally believe in and engage in EIP' which cannot be on an individual level but needs to be en masse. There is a paradox here as teachers who participate in research activities as part of the expectations of their profession may not fully believe in these enforced practices. They may actually feel that this undermines their autonomy as teaching professionals to undertake the research practices that they feel are right for themselves, when it is the opportune moment in their own personal and professional lives. It is in choosing when and how to partake in research-related activities that allows for the fundamental belief in EIP that Brown and Zhang (2016) have called for. There are, therefore, socio-cultural factors that influence research engagement practices.

Wall and Hall's (2017) model of teacher enquiry necessitates autonomy, disturbance and dialogue and whilst no school studied can be said to embody all three of these prerequisites, TPS is the closest to this ideal, with SRS attempting something similar. Teachers at both schools had the agency to research an area pertinent to their practice, which Kushner et al. (2001) saw as a strength in teacher-research. The proviso was that the research focus had to align with the school improvement agenda, as seen in the research-engaged schools in Coldwell et al.'s (2017) study. This was similar in Mr Head's school but topics could also come from the needs of individual classes or an interest relating to the role of staff, which is what Cochran-Smith and Lytle (2009, p.147) called 'joint problem-posing'. Ms Academy had experienced the freedom to research a topic she felt relevant to her own practice but this is no longer the case. In this way, teachers are not being treated as professionals as Evetts (2013, p.788) defines professionalism as having 'the power to define the nature of problems in that area and the control of access to potential solutions'. In SRS, Ms English-Research and Ms PhysEd could not research exactly what they wanted to because they were required to use a control group. This may be an example of 'managed

empowerment' that is technique and outcomes-focused' according to Menter and Hulme (2010, p.118). Not having the autonomy to engage in the research practices pertinent to teachers does not fulfil the government's aim of an evidence-informed teaching profession because although they are informed by evidence, their sense of professional agency has been undermined.

TPS surpassed the other research sites in encouraging a dialogue with research evidence that allowed teachers to problematise both research findings and their own current practice. According to Wall and Hall (2017) it is these elements that make teacher enquiry ethical, in that the teachers involved take ownership of this research, as well as being pragmatic in what is possible for teachers to do, i.e. *re*-search as opposed to formal research. In terms of the 'disturbance' advocated by Wall and Hall (2017), Ms Research wanted teachers attending the research seminars at RPS to problematise the research being presented to them as well as question their own practice but she admitted that this had not been achieved. At SRS, there was a dialogue between teachers in Research Hubs but little appraisal of research evidence and the same can be said in the research-based teams of Mr Head's school.

In both TPS and SRS, research engagement is linked to performance management, which might leave teachers more exposed to accountability rather than research being for PD (Kushner et al., 2001). A report by the NCTL (Maxwell et al., 2015) found that this does not allow for the level of autonomy found in other TSAs as some research foci are too risk averse. Whilst teachers at SRS, such as Mr Business, felt able to take risks with their research, this was not the general message from the head teacher, who linked the research projects of individual teachers to the high-stakes attainment of pupils. The rhetoric of evidence-informed teachers exercising autonomy has been found to be contradictory due to internal and external accountability frameworks (Brown and Zhang, 2016; Higgins, 2016). This was felt in a school in SRS's TSA, where a deputy expressed her doubts for research practices in her school due to the pressure of Ofsted, which was absent in SRS. Interestingly, a teacher at the same school did not feel this pressure, which was perhaps borne by the senior leadership in the school, leading to a naïve perception of teacher agency to research.

The socio-cultural aspects of a school's infrastructure that enable research practices have been identified from the literature as: distributed leadership, school-wide culture of collaboration and dedicated time to engage *with* and *in* research (Maxwell et al., 2015;

Godfrey, 2016). La Velle and Flores (2018, p.535) have highlighted the importance for teachers themselves to be trusted to develop these factors, as is happening, to varying degrees, in the schools studied, with some schools embodying a culture that permits teacher agency. What can be added from this doctoral study is that this is linked to the status of a school, whether formally a Teaching or Research School or simply being a school with an environment conducive to research practices.

5.2.2 Wider Networks

The findings of the study also point to the influence of wider school networks on research practices. Generally, these networks involve those associated with TSs, RSs and universities. TSs were designated as the original vehicle of the self-improving school system (Hargreaves, 2012) and, together with the more recent development of RSs, have been instrumental in defining research engagement and encouraging this in their own networks. However, in this study, it has been established that their influence is not always necessarily positive. Similarly, relationships between schools and universities seem to enable research engagement, though not without problems of ownership, as explained after a discussion of the positive aspects of HE. There have been two studies (Maxwell et al., 2015 and Godfrey, 2016) into these areas that are drawn upon in this discussion to place these findings in a wider context.

Teaching and Research School Networks

As established by Godfrey (2016), networks of research-engaged teachers in Teaching and Research Schools can be seen as beneficial because of the collegiality beyond the organisation that they allow. In all three TSs in this study, they sought to model research engagement practices for their alliance members; for example, SRS and PRS advocated trials and in TPS, Lesson Study was promoted in their TSA. There has already been an evaluation of the TS initiative for the NCTL, where Gu et al. (2015, p.127) found TSAs seeking to ‘embed inquiry-based research cultures across all the partner schools’ and the data from the case studies in this doctoral project have provided an insight into these cultures, with the addition of the new RS status. One of the functions of RSs is to disseminate innovations, which both RSs in this study did, with the recommendation to trial these innovations rather than assume that they will work in a particular context. These school networks are beneficial in encouraging wide-spread research engagement but the danger is that they perpetuate the

hegemony of trials being the only research worth engaging *with* and *in*. To broaden teachers' views of what research could entail, perhaps HEIs could participate in these networks more.

Higher Education

As has already been discussed, HE can provide access to academic research but can also be influential in facilitating *re*-search, engagement *with* research and engagement *in* research. Taking part in an academic course, like Ms Academy's Master's, was not just about engaging with well-established research but also about engaging in dialogue about the research undertaken by colleagues. Coldwell et al. (2017) noted the importance of teachers discussing their findings from research with colleagues on a Master's course but did not highlight this as a key function of HE, as it appears to be in the findings in my research. As pointed out by Herrenkohl et al. (2010), this intellectual stimulation does not have to come from an award-bearing course, however, as any collaborative research can counteract the isolation that teachers often feel. The socio-cultural factors that are conducive to research engagement in the teaching profession, therefore, are those that foster collegiality.

All interviewees from the survey mentioned the importance of reflecting upon their practice, with those who had been involved in HE courses citing these programmes as the stimulus for this reflective conversation. Hordern (2015) has proposed that teacher-generated knowledge needs to be taken further by researchers in HE to make it more useable and TPS perhaps went partly in this direction with the help of Mr Koshi facilitating discussions after each Research Lesson. In this way, a member of the academic community entered the domain of teachers and helped them to frame their reflections. This can be useful, not only for teachers in having an external critical friend, but also for academics seeking to (re)acquaint themselves with the teacher perspective of education. Collaborations between teachers and researchers, therefore, can be mutually beneficial.

As well as HE aiding *re*-search, HE courses were felt to enable engagement *in* research but only if there was close collaboration between the school and the HEI. Ms Diploma was keen to conduct her own research during the practicum of her ITE but felt constrained by the apathy towards research in her school placement. Constraints raised by participating teachers in Thomas et al. (2014, p.402) were 'lack of mental space, lack of inspiration, and difficulties arising from colleagues not having the same motivation'. Ms Academy did not experience these problems as she conducted her Master's research

alongside colleagues, facilitated by the school's collaboration with a university. Mr Independent also had the support of his school to engage in Master's and doctoral research. This is particularly important given how onerous academic research can be in addition to a full teaching timetable, which was highlighted as a reason not to engage in HE courses by Mr Send. HE, therefore, provided a collegial environment for research, but this was not straightforward if the campus and school domains were seen as disconnected. Mr Send thought that HE was not needed in teacher-research as his school already had a collegial environment. There was a similar socio-cultural environment of collegiality at SRS, again, with no HE input but as they were aiming for more formal engagement *with* and *in* research, the absence of academia may be seen as detrimental, as explained next.

HE may help with the practicalities of robust research (Maxwell et al., 2015); for example, Ms Diploma noted the presence of an ethical body in HE that might reassure schools that research conducted by teachers complies with safeguarding measures. Conducting AR ethically has been explored by Nolen and Putten (2007), who made recommendations for in-service teachers conducting their own research and teacher educators. Ethical considerations included ensuring that informed consent was obtained and that there was no coercion, but these standard features of ethical research were not witnessed in TPS and SRS. Not just ethical but more practical methodological decisions may also be aided by HE according to survey data. None of the 14 respondents who were facilitated in research by HE reported 'methodology' as a barrier to research; a close relationship between a school and a university may, therefore, be an enabler for teacher-research (Kushner et al., 2001).

Attention is now turned to the negative aspects of HE being part of teacher-research, as alluded to in the data. From the case studies, the definition of 'collaboration' may be synonymous with exploitation. Both SRS and PRS presented their involvement in national and international trials, respectively. Rather than fully engaging *in* research, it transpired that their role was peripheral in recruiting research participants and training them in a teaching strategy that they had devised. Academics then collected and analysed the data which, it might be argued, is a co-operative delegation of tasks that utilise the attributes of those involved. What is exploitative, however, is leading them to believe that this is an equal collaboration. If it were, as in McLaughlin (2010), researchers would assist teachers with data collection and interpretation strategies, be a critical friend and help teachers to write papers for professional associations, with the teachers being named as authors. This could be due to

the pressure for academics to publish in prestigious journals (Elliot and Sarland, 1995; Stenhouse, 1981).

Whilst the timeframe of this doctoral study does not enable this to be determined for PRS or SRS, the interview with Mr Head revealed that this was not the case for him. When he was describing the case study he said he was researching, he appeared to be a research participant rather than an investigator but what is significant is that he did not see a problem with being omitted as a named author in publications of the findings, which could indicate that this inequality is expected and accepted. As Hammersley-Fletcher et al. (2015) noted, classroom teachers do not often contribute to academic journals and the inequality identified in this study could be why. In their publications, Herrenkohl et al. (2010) included as authors the teachers who collaborated in the research project but they note that this is unusual and was only possible as they had crossed over into academia via doctoral research, further supporting the supposition that teachers researching are not held in equal status to academics.

Overall, networks of schools and collaboration with HEIs can be beneficial in the collegiality that they offer and that teachers find so valuable. However, more needs to be done to make this collaboration more inclusive. TSAs and the RSN need to be careful that the research engagement activities they promote considers teaching as a profession, with teachers having more say in how best to be research engaged. HEIs should be more aware of their position within the professional space of teaching and recognise the potential of collaborating equally with teachers rather than using the networking skills of teachers for their own advantage. There are, therefore, socio-cultural factors that need to be taken into account in HEIs, not just in schools, as both parties should be involved in enhancing the teaching profession. Just as in the final phase of this research, teachers should be seen as co-constructors of knowledge rather than merely participants in research.

5.2.3 Individual Teachers

A school's involvement in wider networks may be a result of the connections that individual teachers have with organisations such as HEIs, the Education Endowment Fund (EEF), the CCT and ResearchED. It is also teachers' personal interests and circumstances, however, that were found to make a difference in their research engagement.

Personal Interest

Research engagement requires leaders with a personal interest but also teachers who possess similar values. Brown et al. (2018, p.40) acknowledged that although there may be enablers on a macro level, i.e. R&D being an expectation of National Teaching Schools, there also needs to be a commitment within individual schools, which depends upon ‘social actors and influencers’ locally. Mr Independent and Ms Research, highlighted how their natural aptitude for research and their positions as a middle and senior leaders, respectively, enabled them to encourage their colleagues to participate in research-related activities. This is easier if colleagues are already interested in research, as Mr Head found out. He had networked with academics, from his Master’s degree and through his involvement with ITE, so was eager to embed a research culture when he was appointed head teacher of a primary school, which he said was not difficult as the school already had a research culture that that he could build upon. Whilst this is not representative of the teaching profession as a whole, the data collected from these individuals are useful in exemplifying how personal interest in research can influence research practices in a school.

The interest in, and experience of, research that a leader has can also be restricting for teacher-researchers as they may impose their own perceptions of research onto the research practices of teachers. Ms Research at PRS promoted evidence syntheses but encouraged the original papers to be critiqued, whereas this was not thought necessary by Mr Research at SRS. He had been involved with the EEF as part of the RISE Project, which evaluated the use of RLs and adopted not only the strategy being trialled but also their method of research via RCTs. Mr Koshi, however, wanted the teachers participating in LS at TPS to have more independence in the research they sourced so was promoting membership in the CCT. The DfE (March 2016) have said that poor communication of research is a barrier but it seems here that teachers can access and use a wide variety of evidence if there is the personal motivation from themselves and their leaders to encourage this, as also seen in Coldwell et al. (2017).

Personal Circumstances

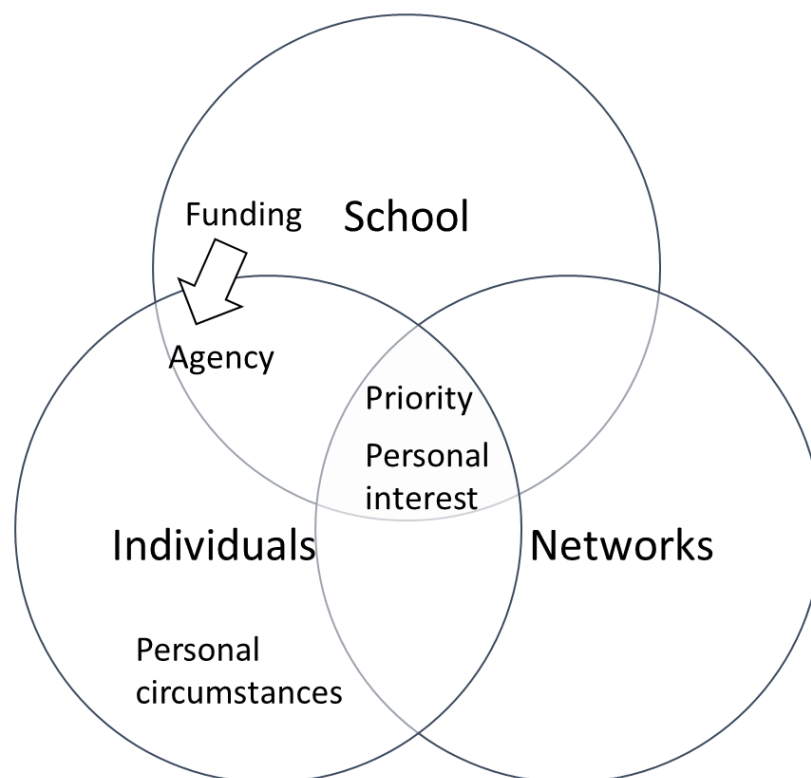
Even with an interest in research and a supportive school infrastructure connected to wider networks, there are personal circumstances that can act as both enablers and barriers to research practices. All interviewees from the survey spoke about needing expendable free

time to engage in Master’s research, apart from Ms Scitt, who already had two Master’s degrees so did not expand upon this topic. Ms Academy and Mr Independent also noted the expense of a Master’s degree, which they thought would be more feasible for older teachers to pay as they may have more disposable income. This calls into question the benefits of research engagement for these teachers if they are at the end of their teaching career. The potential of research engagement will, therefore, be explored after some concluding thoughts.

5.2.4 Concluding thoughts

To answer the second research question, for research practices to be enabled, there are clearly over-lapping socio-cultural factors pertaining to school infrastructure, the individual teachers that influence this and the wider networks of which the school and individuals are a part, as depicted in Fig. 21.

Figure 21: the over-lapping enablers and constraints of research engagement



First of all, schools must not feel under pressure in terms of exam results and Ofsted inspections and need staff stability and support to make research engagement viable. If these conditions are met, it is recommended that research engagement forms part of the CPD of teachers, though not being too prescriptive. This CPD should be carefully planned into the time allocated to CPD, fitting around certain points of the school year. Finances set aside for CPD could be used for either internal or external roles that are dedicated to supporting teacher-research. HEIs have a part to play here, either via Master's courses that provide research literacy or by collaborating with teachers equally as both parties have a lot to offer. Each recommendation here requires schools, teachers and wider networks to have a personal interest and make evidence-informed teaching a priority. To secure this buy-in from all stakeholders, the benefits of research engagement must be understood, as discussed next.

5.3 Potential

Finally, the research question 'What potential worth can research engagement have for teaching and learning?' must be discussed. The study revealed that teacher research broadly had potential for pedagogy and may also lead to a sense of professional agency in teachers being able to make pedagogical choices, as will be explored first. It is not only the outcomes of research engagement that can be beneficial, but also the very process itself that makes a difference, as explored next. There is another consequence of research engagement that does not necessarily result in positive outcomes for teaching and learning in the immediate sense as focus is shifted towards research at the expense of pedagogy. There are, however, tangential benefits even of this, that are important for stake-holders to know about as these are omitted from previous research in favour of more tangible outputs such as learner exam results. For example, there are the benefits to individuals, whether in their teaching career or wider in their personal lives, where this discussion culminates.

5.3.1 Teaching and Learning

The potential of research engagement was seen in this study as contextual rather than generalised, leading to direct outcomes for learners. In TPS, for example, lessons became more tailored to classes because through LS, teaching practitioners could see lessons from a child's perspective, which they thought made teaching more efficient and their pupils more confident in their learning. Mr Send noted how reflecting upon interactions with pupils, particularly those who have complex needs, informs teaching practice for individual pupils. In SRS, the acronym 'PICO' was adapted by teachers according to their own understandings of what research is. The 'P' of 'PICO' was generally referred to as a general pedagogic 'problem' to be investigated but Dr Science-Lead interpreted it as 'pupils' when she told teachers about the research process at an inter-school meeting. This may be because she wanted to target certain pupils rather than a wider problem in the education, thus emphasising the benefits of teacher-research to particular contexts.

The two student teachers interviewed said that they wanted their research to make a difference to the context in which they were teaching. Ms Diploma and Ms Scitt were interested in the socio-economic barriers to education that they hoped to alleviate through their research. This is an intended outcome of Cochran-Smith and Lytle's (2009, p.148) 'inquiry as stance' movement, resulting in teachers publishing their findings on the 'conditions that support and constrain students' learning opportunities as well as the ways these opportunities are shaped by the dynamic interplay of gender, race, class, identity, culture, language background, and immigrant status'. The only outputs from teacher-research disseminated beyond the immediate setting was at the conferences hosted by SRS, implying that although teacher-research was seen as useful for individual teachers and their students, findings could be useful more broadly, given the right platform to disseminate.

However, teacher-researchers in this study viewed dissemination of their findings as daunting; therefore, there is a barrier here to the potential that research engagement could have which more theoretical notions of research literacy (BERA-RSA, 2014) have overlooked. From this doctoral study, it appears that there could be a relatively simple corrective to this barrier, which is linked to a fear of being judged. Mr Send thought it was unfortunate that teachers are not always willing to share their findings and Ms Academy voiced her own anxiety of sharing the findings from her research with colleagues beyond her

subject area. Both teachers noted the potential of research engagement if this fear of being judged is replaced by an acceptance of critique. Kushner et al. (2001, p.31) found ‘the need for teachers to gain confidence in sharing and talking about their research’ and this could perhaps be facilitated by reassurance that there are imperfections in research and reiterating that critique of research is part of the process.

It seems all the more important that teacher-research is disseminated given that there was a sense from participants that this is more relevant to the classroom than published research. Mr Send thought that the *re*-search of his colleagues was more accessible than the medium of academic writing in which research is usually presented. This finding would seem to resonate with the research of Simons (2015, p.179), who established that ‘generalizations were seen to be dependable if trust existed between those who conducted the research (teachers in this example) and those thinking about using it (other teachers)’. For some, like Mr Research and Ms Diploma, pupil progress evidenced in quantitative data from test results were desired as research outcomes but others were satisfied with intangible perceptions of the impact of teacher-research on teaching and learning. Ms Send from TPS felt that her teaching had improved since participating in LS and this resulted in a positive effect upon the learning of her pupils, though this could not be quantified, nor was it a priority for the school to do so. Similarly, in Kushner et al.’s (2001, p.41) evaluation of the School Based Research Consortia Initiative ‘data was collected from a range of sources, including pupil performance data and teacher and heads’ perceptions’. Ms Academy also said that she could not quantify the impact of her research engagement upon her pupils but felt that it must have made a positive difference, just as Brown et al. (2018) speculated about the natural progression of improved student outcomes from teaching quality.

Research engagement may also have a negative impact upon teaching and learning, though this could not be substantiated in this study. Ms Deputy explained that RS status granted SRS £20,000 but they are hoping to be self-sustaining in their research endeavours by delivering CPD and speaking at conferences, thus potentially diverting teachers away from the classroom via the conference circuit. Similarly, Ms English-Lead expected that participating in a national trial would take her away from the classroom, training teachers around the country in her marking strategy that was being trialled by the EEF. Ms Research in PRS also said that she is working more for the RSN and EEF than for her own school now and whilst there was no indication that this would disadvantage the school, this may become an unintended outcome of research engagement. Kushner et al. (2001, p.59) linked the

development of research careers in schools with ‘the changing nature of teachers’ professional identities as a result of research engagement’. Whilst this may elevate teachers’ sense of professionalism (Clarke, 2018), this might not necessarily be beneficial to the teaching and learning in the school if attention is diverted, which the literature has not yet recognised.

Another outcome of research engagement that is not necessarily beneficial to learners but can be for teachers and the school is the use of research to justify decisions. Ms English said that the homework pieces produced by her students during the course of her research would also be useful for their revision and suggested that she might package them up and send them home in preparation for the GCSE examinations but Dr Science-Lead advised that they be kept as evidence for Ofsted. This is an example of the outcomes of research being used for the school rather than directly for the learners themselves. Another example of research engagement being used for justification rather than directly having an impact upon learners is that it could be used to justify the expenditure of PP funding, as Ms Diploma pointed out. The *re*-search of LS at TPS allowed teachers to justify why they had deviated from the prescriptive scheme of work bought in by the school and there were also school-wide changes to pedagogy that were justified by LS findings. Mr Independent felt that he could support his perspective on pedagogical matters through his research engagement.

Disseminating research findings wider than the school community was desired by Mr Head-Teacher but the findings of the lesson studies in TPS were not published and remained an aid for justifying changes made to pedagogy in the school. Whilst teachers using their research engagement to justify their own practice might have its uses, some survey respondents were sceptical of teacher-research being disseminated widely as it is too contextual. However, it is not only the research outputs from teacher-research that make research engagement worthwhile, but also the process, as discussed next.

5.3.2 Process rather than product

The data revealed that sometimes the outcomes of teacher-research were marginal in comparison to the benefits of the process itself. Coldwell et al.’s (2017) evaluation into evidence-informed teaching concluded that it is not necessarily research engagement itself that is beneficial but the following features inherent within these practices:

1. Clear priorities
2. Flexibility
3. Collaboration
4. Disciplined innovation

This study established that the process of engaging in research does bring such benefits. For example, both TPS and SRS focused their research engagement on priorities pertinent to their context, which required flexibility to disturb the status quo of usual practice. Lesson Study at TPS was collaborative and at Secondary Research School, although teachers were engaged in their own individual research projects, they collaborated in their Hubs and in the Journal Clubs. The innovations tried as part of LS in Teaching Primary School (TPS) were carefully considered, based upon the teachers' discussions of research; the trials conducted at SRS, however, were innovative but not as 'disciplined' in that they were not always evidence informed.

The process of *re*-searching one's own practice does not have to result in conclusive findings that can be disseminated wider but might just increase a teacher's understanding of the learning process, as Ms Send in TPS explained. This was also seen in SRS when Ms Maths-Lead reported that it was not just her intervention of changing the curriculum design that made a difference but the process of research itself, which required a re-structuring of her classes. Not only did LS encourage Ms Send at TPS to look again at her own class and her lessons, but it also provided valuable opportunities for her to observe others teach. Mr Junior from the same school also intimated that viewing his own lessons and those of others was a valuable form of CPD and observing others was a 'luxury' described by Ms Academy also. In Kushner et al.'s (2001) study of the School Based Research Consortia, the research methodology thought to be most impactful by teachers was peer observation; therefore it could be that use of research methodology that promotes collegiality makes the difference rather than the intervention itself.

This study, however, discovered that what makes research engagement different to just observing is the dialogue that it provokes. Sharing reflections with colleagues was regarded highly by Ms Academy and is also seen in the top-rated research activities of survey respondents. It is clear from Table 13 that after 'being critically reflective' (with a mean score of 3.51), 'sharing experiences' was a high priority for teachers (scoring 3.43) and the qualitative data from interviews illuminate this quantitative data further. The act of sharing was what Ms Academy also enjoyed about her Master's course. McLaughlin (2010, p.160)

identified that the networking aspects of their research engagement programme were valued more than the research itself as ‘collaboration is the antidote to teacher isolation’. The survey also yielded qualitative data on the sharing element of research engagement; for example, when asked for ‘anything else’ for Question 16 about the benefits of research engagement, one survey respondent specified ‘sharing practice with colleagues’. It is not only *re*-search that was seen as important to discuss but also findings *from* existing research or the research of teachers. The importance of dialogue was witnessed in all three case study schools, with PRS encouraging discussion of external research, TPS using LS to do the same, in addition to facilitating discussions of *re*-search, and SRS doing all three.

Ms Send at TPS and Mr Independent were positive about the process of research engagement, which they believed enhanced their practice as teachers. It was confidence and autonomy that Ms Send focused upon, whereas for Mr Independence, being research engaged had improved his analytical skills, which he thought beneficial in the teaching profession. In their report on five studies of teacher research being used for PD, Zeichner and Klehr (1999) conclude that although it is unclear whether this strategy improves pupil outcomes, it does increase teachers’ confidence and autonomy leading to more analytical and happier teachers. Mr Independent was the only teacher in the study who had engaged in doctoral research, which Taysum (2016) found was not only useful in the empirical research being conducted, being immediate and requiring reflexivity, but also the criticality of policy and practice that they believed went beyond in-service teacher education participants had previously experienced. Participating in these research-related activities does not have to result in tangible findings that can be implemented into practice but the process itself can be beneficial for education and, as will be explained next, individuals.

5.3.3 Outcomes for individuals

Findings show that participating in research can be beneficial for one’s teaching career but there are caveats to this outcome. Mr Independent speculated that a teacher at the beginning of their career might benefit from research in a professional sense, acknowledging that there may be barriers to this if they have a young family, which was also highlighted by Ms Academy and Ms Diploma. Furthermore, research engagement is only advantageous for career prospects if it is valued by the school in which one teaches. For example, Alliance High did not have a full complement of staff so research was not high on their agenda and

similarly, a survey respondent noted how curriculum knowledge was more of a priority than research engagement at their school, which was struggling to fill teaching positions.

The shortage of teachers in England could be ameliorated by the sense of professional decision-making that can be the result of generating one's own knowledge, thus aiding teacher retention (Ovenden-Hope et al., 2018) but data show that it is not as simple as this and can actually result in the contrary. Menter and Hulme (2010, p.118) postulated that there was 'potential for teacher research to enhance the standing of the profession' but this requires teachers to have the agency to adapt their practice according to their findings. There was not the capacity for this in SRS as Ms PhysEd was not able to change her classes based upon her research. Kushner et al. (2001, p.45) in their study of the School Based Research Consortia found that participation in the programme allowed them to reject the homogeneity and 're-engage their professional judgement'. At TPS, teachers tried new pedagogy via LS but there was the implication that successful strategies would be rolled out as a whole-school policy, thus returning to homogeneity rather than having the freedom of a professional. At RPS, evidence from research was used to inform innovations trialled by the school but it was implied by Ms Research that some teachers felt marginalised in the decisions that they would usually make based upon their own professional judgement. Research engagement can, therefore, create a sense of professionalism that helps to retain teachers but if evidence from research is relied upon at the expense of the *re*-search of teachers, this could have the opposite effect. Furthermore, the loss of teachers from the profession could be exacerbated by research engagement, which the literature has not considered. For example, Mr Independent told of how he is leaving teaching to establish his own consultancy firm using the findings from his doctoral research. This was not the original intention of his research engagement; rather, it was personal satisfaction, explored next.

The personal benefits of research engagement were also highlighted by Ms Academy and Ms Send. Whilst Ms Send gained a sense of achievement when engaging with research as part of LS, Mr Junior did not display the same enthusiasm, choosing instead to focus upon the practicalities of teaching. The positive experiences that some teachers have in their research engagement, however, can be influential in encouraging others to reap the personal rewards that they receive, as one survey respondent noted how there is a palpable positive atmosphere in the school when teachers research.

Data found that it is not only teachers who can personally benefit from the research engagement of their colleagues but also the learners in their care, not only by applying the outcomes of research engagement but via research engagement itself. Having an inquiry stance is democratising, both for teachers, who become empowered as professionals, and the young people in their care who benefit from decisions made by those who know them rather than distant researchers (Cochran-Smith and Lytle, 2009). Both Ms Academy and Mr Independent, however, spoke of how they had engaged in Master's research towards the end of their respective teaching careers so it could be deduced that they might not have much of an opportunity to utilise their findings. However, they both remarked that what was most beneficial to their students was their role-modelling of the learning process, surely the *raison d'être* of teachers.

5.3.4 Concluding thoughts

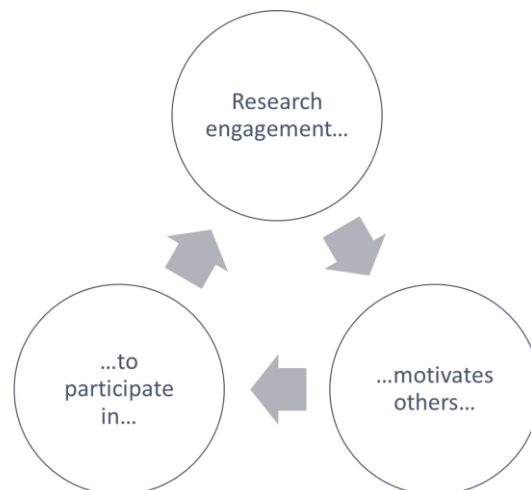
The third research question asked about the potential worth of research engagement for teaching and learning, the answer to which depends upon one's perceptions and practices but there are some general thoughts on this here that might help stake-holders understand the impact that research engagement can have. There was a sense that being a teacher-researcher improves pedagogy, which Menter and Hulme (2010, p.114) identified as 'doing the job better', rather than outcomes being academic awards or publications. Of course, teacher-research may result in these achievements but data show that for some, a major product of engaging in research is personal satisfaction. Dissemination was also an intended outcome for some, though more is needed for this to reach its full potential, such as academics helping teachers with publication and reassuring teachers that critique of research is part of the important peer-review process and is not a personal judgement. Academic input would also alleviate teacher absence from the classroom as collaborations would mean a sharing of the burden of dissemination i.e. at conference attendance during crucial times during a term.

Even if teacher-research does not result in outputs to be disseminated, the 'the act of researching itself' (Wall and Hall, 2017, p.47) was found to be beneficial, particularly in a 'collective enterprise' (Kushner et al., 2001, p.44), and this doctoral study illuminated some of these collegial research activities. One particular research engagement strategy with potential is LS as the process is similar to Ofsted's (2019) new inspection framework of 'deep dives' into curriculum intent, implementation and impact. For example, it requires

teachers to work as a group to plan a lesson, based upon findings from research, then teach a lesson, observed by colleagues, who then ask a focus-group of pupils about the impact of that lesson (Dudley, 2014). The focus-group is also the method of choice by Ofsted inspectors, so by participating in LS, both teachers and pupils are participating in a mini-inspection that is both formative for teaching and learning at the school and preparatory for external accountability.

More than this, research engagement was found to generate the inspiration for further learning. Completing a Master's degree in a group, for example, is motivating and can encourage others in their research endeavours. The practices and products of research engagement, therefore, seem connected in a perpetuating reciprocal cycle (Fig. 22).

Figure 22: a product of research engagement being research engagement



Wall and Hall (2017) have noted the impact of teacher research engagement on the wider environment but, interestingly, teacher-researchers being role-models for their learners has been over-looked in the literature.

Research engagement, however, should not be mandatory as this produces the opposite effect of taking autonomy away from teachers. Research engagement needs to be valued by senior leaders because even with personal motivation and inspiration from colleagues, there are practical barriers that can only be removed at a managerial level. Unless research is a valued aspect of the teaching profession, there is a danger that teacher-researchers may leave the profession so policy-makers need to make its worth more explicit in documentation. Senior leaders may then make research a priority in their school, not just

for justification of pedagogy but to boost the morale of their teachers as part of a profession where they enjoy autonomy in their choices.

Chapter 6: Conclusion

The aim of this study was to gain an understanding of the role that research engagement can have in teaching, specifically as a profession, as reflected in the policy documentation of England's Department for Education. Using a mixed methodology, a breadth of understanding from a variety of teaching practitioners was gained and supplemented by in-depth views of what research engagement may look like in different settings. By also evaluating the potential that these modes of research might have, a three-dimensional view was able to be presented to add to the breadth and depth of this study. The evaluative arm of the study went further than these two-dimensions in illuminating the 'reach' that research engagement can have in the teaching profession. Each approach (survey, interview, case study, evaluation) was able to address the research questions regarding to perceptions, practices and potential of research engagement but each data collecting tool provided its own lens to illuminate certain aspects of the phenomenon. The conclusions presented here articulate the original contribution to knowledge pertaining to how different forms of research engagement can fulfil the DfE's aim for an evidence-informed teaching profession. There are, therefore, recommendations made for teachers, academics and policy-makers. The chapter ends with a reflexive discussion of the limitations of these findings and future developments.

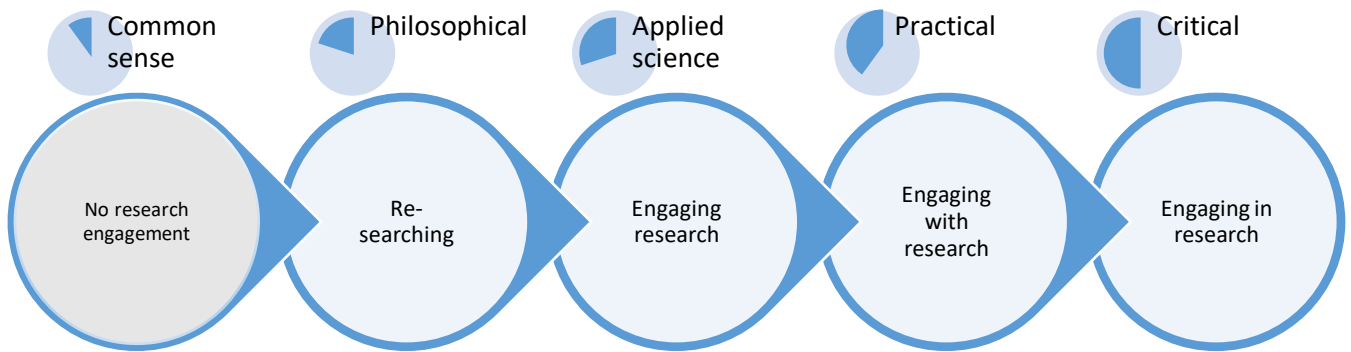
6.1 Original Contribution to Knowledge

This study found that members of the teaching profession saw research engagement as a spectrum of activities, depending upon their own educational background, the infrastructure of their place of work and personal circumstances. Their practices have here been articulated as: *re-searching*, engaging evidence *from* research, engaging *with* research and engaging *in* research. Whilst categorising research practices like this is not new, they have previously been presented as a continuum (Carr and Kemmis, 1986) rather than a spectrum with overlapping and inter-connected components. The ideal teaching profession was thought to be a critical one where dialogue with research is enabled through engagement in research (ibid.). What has come to light during this doctoral study is that teachers value the various research-engagement activities, so the ideal PD should not be to covet any one practice but have a teaching profession that is informed by evidence in the ways that suit contextual factors.

Context was able to be investigated thoroughly in this doctoral research using a novel three-dimensional research design model whereby the breadth, depth and reach of research engagement was able to be illuminated, which no other study has achieved. This has already been disseminated at BERA 2017, where I convened a symposium with academics from two other universities with an interest in research engagement. There is clearly an appetite for this topic beyond academia too as a thought piece derived from my review of literature (Jackson, 2018) has also been published in the Chartered College of Teaching's peer reviewed journal *Impact*, aimed at teachers who are members of the organisation. From these doctoral findings and the review of how the literature from the Stenhouse school of thought has evolved over time, a process of PD is proposed (Fig. 24) that enables teachers to move through the stages of research engagement, stopping when the aims of the project have come to fruition. This is yet to be disseminated but the intention is that it will be published in an open-access academic journal. Furthermore, I have been commissioned to contribute to a chapter on research literacy in a forthcoming book aimed at ECTs and their mentors, which will include vignettes and illustrative models of the kind of research engagement encountered in this doctoral study.

The theoretical framework of Carr and Kemmis' (1986) understanding of professionalism was used to map the research engagement encountered in this study because relevant policy documentation from the DfE in England refers to teachers being 'evidence-informed', specifically calling teaching a 'profession'. Using Carr and Kemmis as an analytical framework, therefore, merged research engagement with professionalism in teaching (Fig. 23).

Figure 23: Carr and Kemmis (1986) re-conceptualised

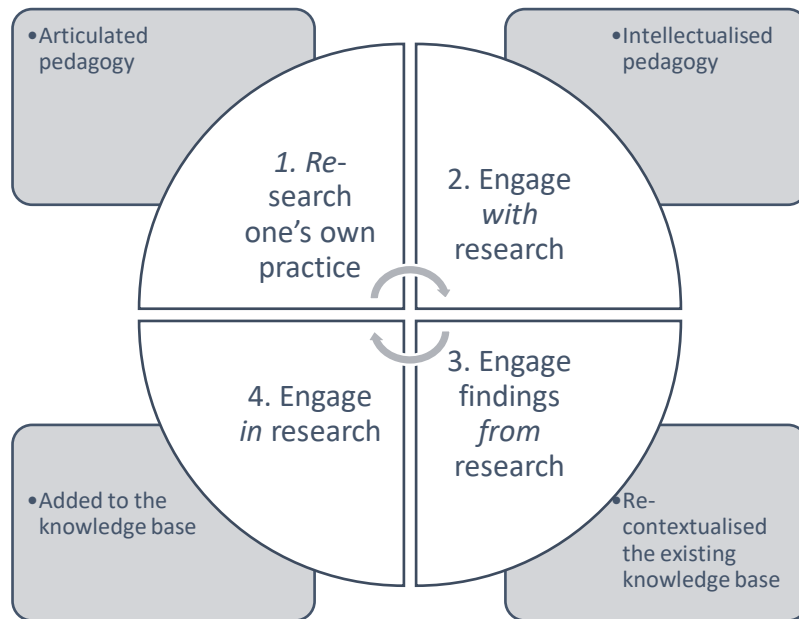


Teachers in this doctoral study, however, were keen on research practices in the middle of this scale so it can be concluded that the aim for a critical teaching profession, where engaging in research supersedes the other modes of research, is unfounded.

For example, using evidence syntheses such as that produced by the EEF was favoured as this precluded the need to engage with original research outputs, which can be time consuming and difficult to comprehend. As Simons (2003) has pointed out, these quantitative data have their uses as a knowledge base for teachers to use, if available, but not at the expense of qualitative data from narratives, case studies, interviews or observations. In particular, Kushner et al. (2001, p.31) have noted that in education, ‘case study data more closely resembles the way teachers think and talk – it is frequently couched in the vernacular, jargon-free language allowing for easy acquisition’ to rival the numerical data that are often presented as conclusive and without nuance. Data and the literature also suggest that *re*-search is an integral part of the teaching profession, so the aim should not be to neglect this end of the continuum but have it as a starting point for teachers’ evidence-informed practice.

A suggested cycle is depicted in Figure 24, which may also be used as a novel tool for conceptualising teacher research. Each circle segment represents the possible research-related practices that teachers could try and attached to each segment is a rounded box illustrating the potential outcome of each research activity so teachers can stop at any point in the cycle when their objective, relating to their context and circumstances, has been achieved.

Figure 24: Practices and Potentials of Research Engagement Marsden, 2020



This model has Stenhouseian foundations in that reflection is important, accessing research is highlighted, putting theories from research into practice is encouraged and engaging systematically in research is also a possibility. In each part of Figure. 24, there is the potential for teacher-researcher collaborations, another Stenhouseian thought that is neglected by Carr and Kemmis (1986). Including any or all of these elements within teacher PD is possible in the policy context of England, particularly in relation to Teacher and Research Schools and the Early Career Framework, but requires some changes in schools, universities and government, as suggested next.

6.2 Recommendations

It is not only teachers who may benefit from the recommendations offered from this doctoral work but faculties of education and the DfE as well. According to Simons (2004), stakeholders may learn a lot from qualitative methods such as interview and observation, written up narratively in case studies. This was the intention in this doctoral study, with the

addition of quantitative data which, as has already been explained, has its uses and is valued within the teaching community, who were the main focus of this project.

6.2.1 Teachers

The recommendations for teachers pertain to adaptations in school infrastructures that may aid research engagement, as well as the networks they could utilise to develop enablers.

My findings show that schools need to have inspirational leaders interested in research engagement who are cognisant of the personal and professional barriers, being flexible and giving teachers the agency to research when most appropriate. It may be best to introduce a programme in the summer of the school year to start in the October once teachers have settled into the new academic year and have familiarised themselves with their new classes. There may need to be a hiatus during that summer term due to exam pressures, then resuming once exam season is over. These do, of course need to be tailored to the school, for example primary, secondary and tertiary contexts will have differing schedules.

Research expertise and support should be sought from beyond the school or college to provide a different perspective and avoid ‘navel-gazing’. A study by the Royal Society and British Academy (2018) has pointed to the potential for the RSN to enable every school and college to have a connection with a research hub led by experts. This doctoral study, however, casts doubt on how expert RSs are in terms of research engagement as the senior leaders of Secondary Research School (SRS) and Primary Research School (PRS) had narrow perceptions of what research engagement can entail. This is where HE may be able to help, as explained next.

6.2.2 Academics

Academics could help teachers to engage *with* and *in* research, which would be mutually beneficial. With regards to the former, teachers are clearly interested in engaging with the research of academics as Ms Research at PRS hosted research seminars and Ms Deputy at SRS was also keen to offer something similar. To have a different academic present their research every month from October to the summer term clearly needs schools to work

together to host such events and academics to liaise with schools to disseminate their research.

This networking involves reciprocity and the benefits that researchers can gain from teachers could be in the communication of research findings if academics and teachers engage in research together. The Royal Society and British Academy (2018) recommended in their report on harnessing educational research that there should be better links between research students and the teaching community and that researchers should be better trained in how to make their findings more accessible. These two recommendations could go hand-in-hand if the links made between teachers and researchers included collaborations in dissemination to other teachers. This idea stemmed from a comment left by a participant at a seminar hosted by PRS, which suggested ‘handouts would be very useful as it’s a lot to take in in a short amount of time’. Being a teacher, this respondent was aware of how to make complex information more accessible, a skill that could be harnessed by researchers working collaboratively with teachers.

A further recommendation emerging from this study echoes that of Musset (2010) who highlighted the need for initial and continuing teacher education to be interlinked, which would be one way for HEIs to maintain relations with schools. If ITE and CPD in a school were provided by the same institution, there could be co-operation between the new and in-service teachers in sharing theory and practice respectively (*ibid.*). This model was likened to the Professional Development Schools (PDSs) of the United States (US) in the 1990s (see also Godfrey, 2016), emulating the medical model of a university hospital in the UK, therefore akin to a TS in England. PDSs were designed to facilitate the learning of novice teachers and had strong links with continuing training providers for in-service teachers, who also benefit from up-to-date research. With TSs taking more of a lead in ITE, the role of HEIs may need to be adapted to focus more upon offering their research expertise. They could also do more to promote the benefits of progressing from in-house teacher enquiries to Master’s research (Gu et al., 2015), which would be mutually beneficial to schools and the uptake of courses at universities.

Of course, there needs to be an incentive for schools to buy into this partnership, which would expend a lot of their finances allocated for CPD, or R&D if extra funding is available from TS or RS status. This doctoral study has found that even in schools with this extra revenue, HE is not invested in, leading to dubious research practices. If the teaching

profession is to be informed by high-quality evidence, HE is surely conspicuous by its absence, which clearer policies on the role of HE in ITE and CPD could rectify.

6.2.3 Policy-makers

There is a disparity in the research engagement of the various ITE routes in England, which could affect how future generations of teachers see research fitting into their careers (Beauchamp et al., 2013). This doctoral study has shown that the research interest of individual teachers is a factor in teaching being an evidence-informed profession so policy could be clearer in instilling the importance of a variety of research practices from an early stage in a teacher's career. The infrastructure for research engagement already exists, particularly in the form of the Early Career Framework (DfE, 2019) and the Chartered College of Teaching, but there is not yet clarity on how teachers maintain their professional status, in relation to research engagement, once they have qualified via the various routes into teaching.

PD needs to be embedded in a more pluralistic framework than being just one 'standard' in the singular (DfE, June 2016), including the importance of engaging with research, as recommended by the Royal Society and British Academy (2018). It is welcomed that the Early Career Framework (ECF) includes engagement with research (DfE, 2019) but this should not be the end of research engagement. For new teachers working through the ECF, this could be a starting point to be built upon later on in one's career, perhaps via Master's research. This gradual introduction of Master's level research when teachers are more settled in their career and personal life is preferable, according to this study, to engaging in research at an early stage, as was the case with the MTL. Policy could be clearer in presenting research engagement as a career-long endeavour, promoting practices that are suitable for the teacher, their students and their school's resources.

For teachers who have not been research-active since their ITE, the CCT's Chartered Teacher scheme has potential and should be promoted more in policy to reflect this. Members of the CCT may be nominated to become a Fellow after 10 years of teaching and for some it will be at this juncture that they might feel ready in their personal lives to participate in research for 'Chartered' status. Whilst no particular research engagement should be made compulsory in policy, more could be done to encourage teachers to maintain their

professional status by raising the profile of research in the CPD of teachers. Schools may, therefore, be encouraged to use CPD funding to enable teachers to research, either through HE or the CCT, which may help with retention.

The RiS programme, an ITE route for those with doctorates, is another government-funded scheme that has potential but policy-makers should be aware that teachers with doctorates may take career opportunities beyond teaching if research is not given due attention. One problem is that without affiliation with an HEI, teacher-researchers are limited in where they can publish their research so there should be government incentives for HEIs to support teacher-researchers, from this RiS scheme and beyond. If teachers with doctorates can be incentivised to remain in the teaching profession, they may not only inspire young people to aspire to research-intensive universities (RiS, 2014) but also their colleagues in their own research career, perhaps involving doctoral study as I have.

6.3 Reflexive Account of Limitations

Now that conclusions have been drawn, there will be a reflexive account of how my experiences may have informed how these have been made, thus possibly limiting the credulity of this study. Being a qualified teacher (currently practising, though not at the time of the empirical work), I do not claim objectivity and, instead, acknowledge that my position will have affected interpretations of the data gathered (Norris, 1997).

My background as a teacher-researcher has no doubt determined what has been focused upon when analysing the survey responses and even in the construction of the survey in the first place. The questions for the survey were selected based on my own experiences and reading of literature thought to be relevant. However, as the aim of the doctoral project is to understand better the concept of 'teacher research engagement' from the teacher's perspective, using my pre-conceived notions (as a teacher) in the enquiry process comes closer to achieving this aim than a more distant researcher claiming 'objectivity'. Therefore, the questions chosen to be asked in the survey are already from a teacher's perspective, thus having 'plausibility and relevance' (Hammersley, 1992).

When conducting interviews, Burton, Brundrett and Jones (2014) advised that there should be a preamble about the nature of the research but it was felt that too much information about the researcher's background as a teacher-researcher may influence the

responses of the interviewees. Despite this, my past experiences no doubt influenced the conduct and interpretation of the interviews. What my questions allowed to be revealed by the interviewees, therefore, has been pre-determined by the inevitable ‘conceptual baggage’ (Robson, 2002, p.493) that all researchers have, especially one so close to the research focus in this case.

The case study I conducted using ethnographic methods was in a school with a very similar profile to that of my former place of employment. Both were mid-sized secondary schools that had been rated ‘outstanding’ by Ofsted and had been awarded TS status. Therefore, I had ‘an understanding of the specialist concepts used’ (Robson, 2002, p.187) but as an ethnographer I was also required to ‘expose presuppositions about what is being witnessed’ (ibid., p.188). Robson (2002) also advised that an ethnographer should become an accepted member of the group by participating in their practices, which I thought would be easy given my background in a similar school but I did detect a sense of apprehension from some teachers.

The evaluative phase of the research was eventually completed in a school where LS was being used as a research engagement activity, which was particularly interesting as I had recent experience of this being used in the university at which I was studying. The version of LS being used at Teaching Primary School, however, did not go as far as I had seen LS go in terms of teachers engaging *in* research. In a way, though, by teachers participating in this doctoral research, qualitative data from their *re*-search were gathered, which would not have been the case ordinarily. Wall and Hall (2017, p.41) felt that although they were transferring their ‘values from the academic community on the teacher-researchers, [they] were simultaneously sharing the language and culture of research’, so this is not necessarily a negative influence of the researcher.

Gregory (2000) problematised participation in evaluation, noting how external researchers facilitating the evaluation inevitably have an elevated status above the participants, which could lead to their exploitation. Conversely, research completely led by the participants has been critiqued by, for example, Angrosino (2012, p.167) who said that ‘limiting research to insiders seems to be a very serious violation of the value of comparativeness that has historically been so important in social research’. In participatory research methodology it is important to consider the issue of whose voice counts, even though this issue was not encountered in this evaluation.

As I was cautious of any apparent causal link between the PD of teachers and the achievement of pupils (Campbell et al. 2004), it was fortunate that the participants did not focus upon, for example, pupil test results as an indicator of success. Although the ontological views of the researcher were, in fact, shared by the stakeholders, if this had not been the case, I would have had to respect this (as Burford et al., 2013 advise) and negotiate appropriate research methods, providing, of course, that they were ethical.

In addition to acknowledging my orientations as a researcher that may have affected both the research process and my research findings, it is also useful to reflect upon how I may have influenced the environment I studied (Hammersely and Atkinson, 2003). Being a participant observer is contentious, as Burton, Brundrett and Jones (2014, p.127) warned, ‘the researcher will inevitably cease to function as a researcher since they will themselves become part of the activity under scrutiny’. Perryman (2011) helped the participants in what she was researching and I did the same when asked for advice by Ms Deputy and Mr Research. Whilst Ms Deputy did include more references to engaging *with* research in her advice to teachers, Mr Research did not obviously take my ideas on board, possibly because he did not believe that I was a credible source of knowledge on research as I did not conform to his idea of what research ought to be i.e. RCTs. Brown and Zhang (2016) comment on how an individual seemed to wield power over which research ‘counted’ and this appeared to be the case at SRS as other teachers did not consider my study (using participant observation, interviews and document analysis) as research. I was asked by one participant at the Research Lead Training from another school whether I had a control group in my research and on another occasion I was asked what was my research question was and the teacher was surprised that I did not have just one question, in the PICO formula, to answer. This led to me questioning my own epistemology, which is what Kushner et al. (2001) found with some teachers who did not count their own qualitative studies as research.

Similarly, in the mixed-methods case study, there was an expectation from Ms Research that my study of their school would lead to tangible results as that was the main perception of the purpose of research in PRS. This led to the research tool of a questionnaire being used as this would yield the kind of quantitative data that the gatekeeper wanted to make the school’s participation in the research worthwhile. It was also hoped that the questionnaire could be used as a recruitment tool for what I really wanted to do, which was a user-focused evaluation based upon the values of the teachers involved in this research engagement activity. Although this did not come to fruition, the questionnaire gave an

interesting insight into the perceptions of the attendees of the research seminar series, which were also useful to Ms Research, who then allowed me to interview her. These quantitative and qualitative data, together with analysis of school documentation in the public domain, turned a potentially failed evaluation into a valuable case study of a primary school with the same status as SRS.

By revealing my subjectivities, I believe that the logic behind my interpretations is now more transparent and my findings, therefore, more valuable. It is important to note, however, that my conclusions do not have any privileged authority over other interpretations (Creswell, 2012) and should only be seen as the starting point of an ongoing dialogue rather than any definitive answer (Shacklock and Smyth, 1998) to how research engagement may be enacted.

6.4 Future developments

This doctoral research is not yet educative as teachers have not interpreted how important this is for their practice. *Ipsa facto*, the next steps would be for teachers to engage with my research findings, implement anything that they find pertinent and move the knowledge base along even further by evaluating how effective research engagement is for the goal of an ‘evidence-informed teaching profession’ (DfE, March 2016, p.37).

As a practising teacher, I am in a position to continue my research engagement by disseminating my findings to colleagues at the college in which I teach, its wider consortium and via media found to be most used by teachers; as a researcher, I have made contacts with academics who may be able to help, not only with the research engagement activities but also in evaluating the impact of these practices and disseminating the results wider, to academics and policy-makers.

References

- Abma, T. A. (2005) Responsive evaluation in health promotion: Its value for ambiguous contexts. *Health Promotion International*, 20 (4), pp.391-397. doi:10.1093/heapro/dai013.
- Angrosino, M. (2012) Observation-based research. In: Arthur, J., Waring, M., Coe, R. and Hedges, L. (eds.) *Research methods and methodologies in education*. London: Sage pp.165-169.
- Aspfors, J. and Eklund, G. (2017) Explicit and implicit perspectives on research-based teacher education: Newly qualified teachers' experiences in Finland. *Journal of Education for Teaching*, pp.1-14. doi:10.1080/02607476.2017.1297042.
- Badiou, A. (2014) *Infinite Thought: Truth and the return of philosophy*. London: Bloomsbury.
- Ball, S. J., Maguire, M. and Braun, A. (2012) *How Schools Do Policy: Policy Enactments in Secondary Schools*. London: Routledge.
- Bamberger, M. (2012) Introduction to mixed methods in impact evaluation. *Impact Evaluation Notes*, No. 3.
- Barrera-Pedemonte, F. (2016) High-quality teacher professional development and classroom teaching practices: Evidence from Talis 2013. *OECD Education Working Papers*. Paris, Organisation for Economic Co-operation and Development.
- Beauchamp, G., Clarke, L., Hulme, M. and Murray, J. (2013). Policy and Practice within the United Kingdom. *Research and Teacher Education: the BERA-RSA Inquiry*.
- Becker, H. (1967) Whose side are we on? *Social Problems*, 14(3), pp.239-247. doi:10.2307/799147.
- Benn, M. (2018) *Life Lessons: The case for a National Education Service*. London: Verso.
- Biesta, G. (2007a) Why "what works" won't work: Evidence-based practice and the democratic deficit in educational research. *Educational Theory* 57(1), pp.1-22.

Biesta, G. (2007b) Bridging the gap between educational research and educational practice: the need for critical distance. *Educational Research and Evaluation* 13(3), pp.295-301. doi:10.1080/13803610701640227.

Biesta, G. J. J. (2010) Why 'what works' still won't work: from evidence-based education to value-based education. *Studies in Philosophy & Education* 29(5), pp.491-503.

Biesta, G. (2012) Mixed methods. In: Arthur, J., Waring, M., Coe, R. and Hedges, L. (eds.) *Research methods and methodologies in education*. London: Sage pp.147-152.

Biesta, G. (2013). Responsive or responsible? Education for the global networked society. *Policy Futures in Education* 11(6), pp.734-745. doi: 10.2304/pfie.2013.11.6.734

Biesta, G., Filippakou, O., Wainwright, E. and Aldridge, D. (2019) Why educational research should not solve problems, but should cause them as well. *British Educational Research Journal* 45(1), pp.1-4. doi:10.1002/berj.3509.

Brannen J. and Moss, G. (2012) Critical issues in designing mixed methods policy research. *American Behavioral Scientist* [online] pp.1-13. Available at: <http://abs.sagepub.com/content/56/6/789.full.pdf+html> [Accessed: 17th November 2016]

British Educational Research Association (2011) *Ethical guidelines for educational research*. [online] Available at: <https://www.bera.ac.uk/wp-content/uploads/2014/02/BERA-Ethical-Guidelines-2011.pdf> [Accessed: 4th November 2016].

British Educational Research Association and the Royal Society for the Arts (2014) *Research and the teaching profession. Building the capacity for a self-improving education system. Final report of the BERA-RSA inquiry into the role of research in teacher education*. [online] Available at: <https://www.bera.ac.uk/wp-content/uploads/2013/12/BERA-RSA-Research-Teaching-Profession-FULL-REPORT-for-web.pdf> [Accessed: 4th November 2016]

Broadhead, P. (2010) 'Insiders' and 'outsiders' research together to create new understandings and to share policy and practice: Is it all possible? In: Campbell, A. and Groundwater-Smith, S. (eds.) *Connecting inquiry and professional learning in education: international perspectives and practical solutions*. Oxon: Routledge pp.40-52

Brown, C. and Zhang, D. (2016) Is engaging in evidence-informed practice in education rational? What accounts for discrepancies in teachers' attitudes towards evidence

use and actual instances of evidence use in schools? *British Educational Research Journal* 42, pp.780-801. doi:10.1002/berj.3239

Brown, C., Zhang, D., Xu, N., Corbett, S. (2018) Exploring the impact of social relationships on teachers' use of research: A regression analysis of 389 teachers in England. *International Journal of Educational Research* 89, pp.36-46. doi: 10.1016/j.ijer.2018.04.003

Bryman, A. (2012) *Social Research Methods*. 4th ed. Oxford: Oxford University Press

Bulterman-Bos, J. (2017) How can a clinical research approach contribute to knowledge-building for the teaching profession? *Educational Action Research*, 25(1), pp.119-127. doi: 10.1080/09650792.2016.1154884

Burford, G., et al. (2013) Field trials of a novel toolkit for evaluating 'intangible' values-related dimensions of projects. *Evaluation and Program Planning* 36(1), pp.1-14.

Burn, (1997) Learning to Teach. In McIntyre, D. (ed.) *Teacher Education Research in a New Context: the Oxford Internship Scheme*. London: Paul Chapman Publishing pp.145-161

Burn, K. and T. Mutton (2013) Review of 'Research-informed Clinical Practice' in Initial Teacher Education. *Research and Teacher Education: the BERA-RSA Inquiry*.

Cain, T. (2015) Teachers' engagement with research texts: Beyond instrumental, conceptual or strategic use. *Journal of Education for Teaching* 41 (5), pp.478–492. doi:10.1080/02607476.2015.1105536.

Cain, T., Brindley, S., Brown, C., Jones, G. and Riga, F. (2019) Bounded decision-making, teachers' reflection and organisational learning: How research can inform teachers and teaching. *British Educational Research Journal* 45(5), pp.1072-1087. doi:10.1002/berj.3551

Calderhead, J. and Gates, P. (1993) *Conceptualising Reflection in Teacher Development*. London: Falmer Press

Campbell, A. and Groundwater-Smith, S. (2010) *Connecting Inquiry and Professional Learning in Education international perspectives and practical solutions*. Oxon: Routledge

Campbell, A. and McNamara, O. (2010) Mapping the field of practitioner research, inquiry and professional learning in educational contexts. In: Campbell, A. and Groundwater-Smith, S. (eds.) *Connecting Inquiry and Professional Learning in Education*. Oxon: Routledge pp.10-25

Carr, W. and Kemmis, S. 2002 (1986) *Becoming critical: education, knowledge and action research*. King's Lynn: RoutledgeFalmer

Carter, A. (2015) Carter review of initial teacher training. [online] Available at: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/399957/Carter_Review.pdf [Accessed 10th November 2016]

Castle, K., et al. (2013) Teacher development through the Masters in Teaching and Learning: a lost opportunity. *Journal of Education for Teaching: International research and pedagogy*, 39(1), pp.30-38. doi:10.1080/02607476.2012.733189

Chartered College of Teaching (2015) Claim your college. The profession's new College of Teaching: a proposal for start-up support. [online] Available at: <http://www.claimyourcollege.org/wp-content/uploads/2015/02/College-of-teaching-expression-of-interest.pdf> [Accessed 25th May 2020]

Churches, R. and Dommett, E. (2016) *Teacher-led research: Designing and implementing randomised controlled trials and other forms of experimental research*. Carmarthen: Crown House

Clarke, L. (2018) Mapping teacher status and career-long professional learning: the place model. *Discourse: Studies in the cultural politics of education*, 39(1), pp.69-83. doi:10.1080/01596306.2016.1230540

Clarke, M., et al. (2012) Evaluating initial teacher education programmes: Perspectives from the Republic of Ireland. *Teaching and Teacher Education*, 28(2), pp.141-153.

Cochrane-Smith, M. (2016) Foreword. In The Teacher Education Group *Teacher Education in Times of Change*. Bristol: Policy Press

Cochran-Smith, M. and Lytle, S. (1990) Research on teaching and teacher research: the issues that divide. *Educational Researcher* [online], 19(2) pp.2-11. Available at: <http://www.jstor.org/stable/pdf/1176596.pdf> [Accessed: 17th November 2016]

Cochran-Smith, M. and Lytle, S. (2009) *Inquiry as stance*. New York: Teachers College Press

Cochran-Smith, M., and Lytle, S. (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*. New York: Teachers College Press pp.45-58

Coe, R. (2013) *Improving Education: a triumph of hope over experience*. Durham, Centre for Evaluation and Monitoring [online]. Available at: <http://www.cem.org/attachments/publications/ImprovingEducation2013.pdf> [Accessed 25th May 2020]

Cohen, L, Manion, L. and Morrison, K. (2011) *Research Methods in Education*. 7th edition. London: Routledge

Coldwell, M., Greany, T., Higgins, S., Brown, C., Maxwell, B., Stiell, B., Stoll, L., Willis, B. and Burns, H. (2017) Evidence-informed teaching: an evaluation of progress in England [online]. Available at: [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/625007/Evidence-informed teaching - an evaluation of progress in England.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/625007/Evidence-informed_teaching_-_an_evaluation_of_progress_in_England.pdf) [Accessed 25th May 2020]

Cooper, P. and McIntyre, D. (1996) *Effective Teaching and Learning: teachers' and students' perspectives* (2001). Buckingham: Open University Press

Cordingley, P. (2013) The contribution of educational research to teachers' professional learning and development [online]. Available at: <https://www.bera.ac.uk/wp-content/uploads/2013/12/BERA-Paper-5-Continuing-professional-development-and-learning.pdf?noredirect=1> [Accessed 23rd August 2017]

Cordingley, P., Bell, M. and Thomason, S. (2004) Continuing Professional Development (CPD) Review Group. The impact of collaborative CPD on classroom teaching and learning [online]. Available at: http://eppi.ioe.ac.uk/EPPIWebContent/reel/review_groups/CPD/cpd_protocol2.pdf [Accessed 25th May 2020]

Counsell, C., Evans, M., McIntyre, D., Raffan, J. (2000) The Usefulness of Educational Research for Trainee Teachers' Learning. *Oxford Review of Education* 26(3/4), pp.467-482. doi:10.1080/3054980020001954

Creswell, J. (2012) *Educational research: planning, conducting, and evaluating quantitative and qualitative research*. 4th international ed. Boston: Pearson

Creswell, J. and Plano-Clark, V. L. (2011) *Designing and conducting mixed methods research* 2nd ed. Sage: California

Day, C., Sammons, P. and Gu, Q. (2008) Combining qualitative and quantitative methodologies in research on teachers' lives, work, and effectiveness: from integration to synergy, *Educational Researcher* 37(6), pp.330-342 [online]. Available at: <http://edr.sagepub.com/content/37/6/330.full.pdf+html> [Accessed 17th November 2016]

Department for Education (2010) *The importance of education* [online]. Available at: <https://www.gov.uk/government/publications/the-importance-of-teaching-the-schools-white-paper-2010> [Accessed 20th May 2020]

Department for Education (2011) *Teachers' standards* [online]. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/665520/Teachers_Standards.pdf [Accessed 20th May 2020]

Department for Education (2013) *Building evidence into education* [online]. Available at: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/193913/Building_evidence_into_education.pdf [Accessed 10th November]

Department for Education (2014) *Academies: research priorities* [online]. Available at: <https://www.gov.uk/government/collections/research-priorities-for-education-and-childrens-services> [Accessed 17th November 2016]

Department for Education (March 2016) *Educational excellence everywhere* [online]. Available at: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/508447/Educational_Excellence_Everywhere.pdf [Accessed 4th November 2016]

Department for Education (July 2016) *Standard for teachers' professional development* [online]. Available at:

[https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/537030/160712 - PD_standard.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/537030/160712_-_PD_standard.pdf) [Accessed 10th November 2016]

Department for Education (2019) *Early Career Framework* [online]. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/773705/Early-Career_Framework.pdf [Accessed 20th May 2020]

Department of Education and Skills (2012) Report of the International Review Panel on the Structure of Initial Teacher Education in Ireland

Design-Based Research Collective (2003) Design-based research: an emerging paradigm for educational inquiry. *Educational Researcher* 32(1), pp.5-8

Dinham, S. (2013) Connecting clinical teaching practice with instructional leadership. *Australian Journal of Education* (ACER Press) 57(3), pp.225–236.
doi:10.1177/0004944113495503

Drakenberg, M. (2001) ‘=The Professional Development of Teachers in Sweden. *European Journal of Teacher Education* [online], 24(2), pp.195-204. Available at: <http://dx.doi.org/10.1080/02619760120095589> [Accessed 24th August 2017]

Dudley, P. (2011) Lesson Study development in England: from school networks to national policy. *International Journal for Lesson and Learning Studies* 1(1), pp.85-100. doi: 10.1108/20468251211179722

Dudley, P. (2014) Lesson Study: a handbook [online]. Available at: <http://disde.minedu.gob.pe/bitstream/handle/123456789/5017/Lesson%20Study%20a%20Handbook.pdf?sequence=1&isAllowed=y> [Accessed 20th May 2020]

Duncalf, D. Lloyd, D., Pratt, A. and Horsfall, P. (2017) Teacher perspectives of cultivating learning through practitioner enquiry to transform practice. *Teacher Education Advancement Network Journal* 9(1), pp.113-123

Eberhardt, A. and Heinz, M. (2017) Walk Little, Look Lots: tuning into teachers’ action research rhythm. *Studying Teacher Education* 13(1), pp.36-51.
doi:10.1080/17425964.2017.1286578

Edwards, A. and Brunton, D. (1993) Supporting Reflection in Teachers’ Learning. In: Calderhead, J. and Gates, P. *Conceptualising Reflection in Teacher Development*. London: Falmer Press

Elliott, J. and Sarland, C. (1995) A study of 'Teachers as Researchers' in the context of award-bearing courses and research degrees. *British Educational Research Journal* 21(3), pp.371-387

Elliott, J. (2001) Making evidence-based practice educational. *British Educational Research Journal* 27(5), pp.523-671. doi:10.1080/01411920120095735

Elliott, J. (2009). In: Gewirtz, P. M. S., Hextall, I. and Cribb, A. (eds.) *Changing Teacher Professionalism: international trends, challenges and ways forward*. Oxon, Routledge.

Evetts, J. (2013) Professionalism: value and ideology. *Current Sociology Review* 61 (5-6), pp.778-796. doi:10.1177/0011392113479316

Evetts, J. (2002) New directions in state and international professional occupations. *Work, employment and society* 16 (2), pp.341-353

Fielding, N. (2012) Triangulation and mixed methods designs: Data integration with new research technologies. *Journal of Mixed Methods Research* [online]. Available at: <http://mmr.sagepub.com/content/early/2012/03/28/1558689812437101> [Accessed 23rd August 2017]

Flores, M. A. (2018) Linking teaching and research in initial teacher education: knowledge mobilisation and research-informed practice. *Journal of Education for Teaching* 44(5), pp.621-636. doi: 10.1080/02607476.2018.1516351

Fordham, M. (2016) Realising and extending Stenhouse's vision of teacher research: the case of English history teachers. *British Educational Research Journal* 42(1), pp.135-150. doi: 10.1002/berj.3192

Foreman-Peck, L. and Heilbronn, R. (2018) Does Action Research Have a Future? A Reply to Higgins. *Journal of Philosophy of Education* 52, pp.126-143. doi:10.1111/1467-9752.12272

Frankham, J. and Hiatt, S. (2011) The Master's in Teaching and Learning: expanding utilitarianism in the continuing professional development of teachers in England. *Journal of Education Policy* 26(6), pp.803-818. doi:10.1080/02680939.2011.554997

Frankham, J., Stronach, I., Bibi-Nawaz, S., Cahill, G., Cui, V., Dymoke, K., Dung, M., Lungka, P., Mat-Som, H. and Knir, M. (2013) De-skilling data analysis: The virtues of

dancing in the dark. *International Journal of Research and Method in Education* 37.
doi:10.1080/1743727X.2013.795531

Fulford, K. W. M. (2008). Values-Based Practice: From the Real to the Really Practical. *Philosophy, Psychiatry and Psychology* 15(2), pp.183-185. doi:10.1353/ppp.0.0180

Gage, N. L. (1978) *The Scientific Basis of the Art of Teaching*. New York: Teachers College Press

Geertz, C. (1973) *The Interpretation of Cultures*. New York: Basic Books

Gibb, N. (2015) Researchers in Schools programme [online speech]. Available at: <https://www.gov.uk/government/speeches/researchers-in-schools-programme> [Accessed 20th May 2020]

Godfrey, D. (2016) Leadership of schools as research-led organisations in the English educational environment: Cultivating a research engaged school culture. *Educational Management Administration and Leadership* 44(2), pp.301-321

Godfrey, D. and Brown, C. (2018) How effective is the research and development ecosystem for England's schools? *London Review of Education* 16(1), pp.136-151

Goodson, I. (1994) Studying the Teacher's Life and Work. *Teaching and Teacher Education* [online] 10(1), pp.29-37. Available at: <http://eds.b.ebscohost.com/eds/detail/detail?vid=0&sid=e26ca46a-b4b6-4640-b17f-b91560652e3d%40sessionmgr101&bdata=JnNpdGU9ZWRzLWxpdmU%3d#AN=EJ484279&db=eric> [Accessed 20th May 2020]

Goswami, D. and Stillman, P. (1987) *Reclaiming the Classroom: teacher research as an agency for change*. Portsmouth: Heinemann

Gough, D. (2004) Systematic research synthesis. In: Thomas, G. and Pring, R. (eds.) *Evidence-based practice in education*. Maidenhead: Open University Press pp.44-64

Gove, M. (2013) Michael Gove speaks about the importance of teaching [online speech]. Available at: <https://www.gov.uk/government/speeches/michael-gove-speaks-about-the-importance-of-teaching> [Accessed 25th May 2020]

Greene, J. C. (2007) *Mixed Methods in Social Inquiry* San Francisco: Jossey-Bass

Greene, J. C. (2013) Logic and evaluation theory. *Evaluation and Program Planning* 38, pp.71-73

Greene, J. C., Benjamin, L. and Goodyear, L. (2001) The merits of mixing methods in evaluation. *Evaluation* 7(1), pp.25-44

Greening (2017) Teacher development key to school improvement [online speech]. Available at: <https://www.gov.uk/government/speeches/justine-greening-teacher-development-key-to-school-improvement> [Accessed 25th May 2020]

Gregory, A. (2000) Problematizing participation: a critical review of approaches to participation in evaluation theory. *Evaluation* [online] 6(2), pp.179-199. Available at: <http://evi.sagepub.com/content/6/2/179.full.pdf+html> [Accessed 18th November 2016]

Griggs, J., Speight, S. and Cartagena Farias, J. (2016) Ashford Teaching School Alliance Research Champion: Evaluation and executive summary [online]. Available at: <https://education.gov.scot/improvement/Documents/sac47-eef-ashford-research.pdf> [Accessed 23rd August 2017]

Groundwater-Smith, S. and Campbell, A. (2010) Joining the dots – connecting inquiry and professional learning. In: Campbell, A. and Groundwater-Smith, S. (eds.) *Connecting Inquiry and Professional Learning in Education*. Oxon: Routledge pp.200-206

Groundwater-Smith, S., Mitchell, J. and Mockler, N. (2016) Praxis and the language of improvement: inquiry-based approaches to authentic improvement in Australasian schools. *School Effectiveness and School Improvement* [online] 27(1), pp.80-90. Available at: <http://www.tandfonline.com/doi/pdf/10.1080/09243453.2014.975137?needAccess=true> [Accessed 17th November 2016]

Groundwater-Smith, S. and Mockler, N. (2010) From lesson study to learning study: side-by-side professional learning in the classroom. In Campbell, A. and Groundwater-Smith, S. (eds.) *Connecting Inquiry and Professional Learning in Education*. Oxon: Routledge pp.166-178

Gu, Q., Rea, S., Hill, R., Smethem, L. and Dunford, J. (2014) Teaching Schools Evaluation: Emerging issues from the early development of case study Teaching School Alliances [online]. Available at:

[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/505517/RR332 - Teaching schools Evaluation.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/505517/RR332_-_Teaching_schools_Evaluation.pdf) [Accessed 25th May 2020]

Gu, Q., Rea, S., Hill, R., Smethem, L. and Dunford, J. (2015) Teaching Schools Evaluation Final Report [online]. Available at:

[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/503333/Evaluation of Teaching schools FINAL FOR PUB 25 feb final .pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/503333/Evaluation_of_Teaching_schools_FINAL_FOR_PUB_25_feb_final_.pdf)

[Accessed 25th May 2020]

Guba (2007) Foreword in Stringer, E. T. *Action Research: A Handbook for Practitioners*. London: Sage

Guba, E. and Lincoln, Y. (1989) *Fourth generation evaluation*. California: Sage

Gunter, H.M. and McGinity, R. (2014) The Politics of the Academies Programme: natality and plurality in education policymaking *Research Papers in Education* 29 (3) [online], pp.300-314. Available at:

<https://www.tandfonline.com/doi/pdf/10.1080/02671522.2014.885730?needAccess=true>

[Accessed 25th May 2020]

Guskey, T. (2000) *Evaluating Professional Development* California: Corwin Press

Guskey, T. and Sparks, D. (1991) What to consider when evaluating staff development. *Educational Leadership*

Hall, D. (2014) Using lesson study as an approach to developing teachers as researchers. *International Journal for Lesson and Learning Studies* 3(1), pp.11-23 [online].

Available at: <https://doi.org/10.1108/IJLLS-01-2013-0002> [Accessed 26th May 2020]

Hammersley, M. (1993) On the teacher as researcher. *Educational Action Research*, 1(3) [online], pp.425-445. Available at:

<http://www.tandfonline.com/doi/pdf/10.1080/0965079930010308> [Accessed: 17th November 2016]

Hammersley, M. (1997) Educational research and teaching: a response to David Hargreaves' TTA lecture. *British Educational Research Journal* 23(2) [online], pp.141-161.

Available at: <https://www.jstor.org/stable/pdf/1501807.pdf> [Accessed: 17th November 2016]

Hammersely, M. and Atkinson, A. (2007) *Ethnography: principles in practice*. 3rd ed. Oxon: Routledge

Hammersley-Fletcher, L., Lewin, C., Davies, C., Duggan, J., Rowley, H. and Spink E. (2015). Evidence-based teaching: advancing capability and capacity for enquiry in schools [online]. Available at: https://dera.ioe.ac.uk/24429/1/EBT_Interim_report_FINAL.pdf [Accessed 25th May 2020]

Hardy, I., Rönnerman, K., Moksnes Furu, E., Salo, P. and Forsman, L. (2010) Professional development policy and politics across international contexts: from mutuality to measurability? *Pedagogy, Culture & Society* 18(1) [online], pp.81-92. Available online: <http://www.tandfonline.com/doi/pdf/10.1080/14681360903556871?needAccess=true> [Accessed 23rd August 2017]

Hardy, I. (2016) Legitimizing and contesting the commodification of schooling: the case of teachers' learning in Queensland. *British Educational Research Journal* 42(3), pp.524-542. doi:10.1002/berj.3208

Hargreaves, D. (1996) Teaching as a Research-based Profession: possibilities and prospects [online] Teacher Training Agency. Available at: <https://eppi.ioe.ac.uk/cms/Portals/0/PDF%20reviews%20and%20summaries/TTA%20Hargreaves%20lecture.pdf> [Accessed 10th November 2016]

Hargreaves, D. (1997) In defence of research for evidence-based teaching: a rejoinder to Martyn Hammersley. *British Educational Research Journal* [online], 23(4) pp.405-419. Available at: <http://onlinelibrary.wiley.com/doi/10.1080/0141192970230402/epdf> [Accessed: 17th November 2016]

Hargreaves, D. (2011) Leading a self-improving school system [online]. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/325890/leading-a-self-improving-school-system.pdf [Accessed 25th May 2020]

Hargreaves, D. (2012) 'A self-improving school system: towards maturity' [online]. Available at: <http://dera.ioe.ac.uk/15804/1/a-self-improving-school-system-towards-maturity.pdf> [accessed 23rd August 2017]

Harrison, N. and McCaig, C. (2017) Examining the epistemology of impact and success of educational interventions using a reflective case study of university bursaries. *British Educational Research Journal*, 43(2) pp.290-309. doi:10.1002/berj.3263

Haynes, L., Service, O., Goldacre, B. and Torgerson, D. (2012) *Test, Learn, Adapt: Developing Public Policy with Randomised Controlled Trials*. Cabinet Office. Technical Report. Cabinet Office Behavioural Insights Team, UK [online]. Available at: <https://researchonline.lshtm.ac.uk/id/eprint/201256> [accessed 26th May 2020]

Herrenkohl, L. P., Kawasaki, K. and Salvatore Dewater, L. (2010) Inside and outside: Teacher-researcher collaboration. *The New Educator*, 6(1), pp.74-92.
doi:10.1080/1547668X.2010.10399589

Higgins, C. (2016) The promise, pitfalls, and persistent challenge of action research. *Ethics and Education* 11(2), pp.230-239. doi:10.1080/17449642.2016.1185831

Hinds, D. (2019) Teacher Recruitment and Retention Strategy [online]. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/786856/DFE_Teacher_Retention_Strategy_Report.pdf [accessed 25th May 2020]

Hordern, J. (2010) Policy –Driven Professionalism in the Education Workforce: England 2004–2010. *The New Educational Review*

Hordern, J. (2014) The Logic and Implications of School-based Teacher Formation. *The British Journal of Educational Studies*

Hordern, J. (2015) Teaching, Teacher Formation, and Specialised Professional Practice. *European Journal of Teacher Education*

Hordern, J. (2016a) Regions and their relations: sustaining authoritative professional knowledge. *Journal of Education and Work* 29(4), pp.427-449.
doi:10.1080/13639080.2014.958653

Hordern (2016b) Differentiating knowledge, differentiating (occupational) practice. *Journal of Vocational Education and Training* 68(4), pp.453-469.
doi:10.1080/13636820.2016.1234506

Husebo, D. (2012) Bridging theory and practice in Norwegian teacher education through action research. *Educational Action Research* 20(3), pp.455-471

Jackson, R. (2018) It's not rocket science – it's more complex than that! *Impact* Issue 2. Available online: <https://impact.chartered.college/article/jackson-rocket-science-more-complicated/> [accessed 17th July 2020]

Jakku-Sihvonen, R., et al. (2012) Teacher Education Curricula after the Bologna Process – a Comparative Analysis of Written Curricula in Finland and Estonia. *Scandinavian Journal of Educational Research* 56(3), pp.261-275

Johnson, R., Onwuegbuzie, A. and Turner, L. (2007) Toward a definition of mixed methods research. *Journal of Mixed Methods Research* [online], 1(2) pp.112-133. Available at: <http://mmr.sagepub.com/content/1/2/112.full.pdf+html> [Accessed 17th November 2016]

Jyrhämä, R., et al. (2008) The appreciation and realisation of research-based teacher education: Finnish students' experiences of teacher education. *European Journal of Teacher Education* 31(1), pp.1-16

Kemmis (2012) Researching educational praxis: Spectator and participant perspectives. *British Educational Research Journal* 38(6), pp.885-905.
doi:10.1080/01411926.2011.588316

Kennedy, A. (2005) Models of Continuing Professional Development: a framework for analysis. *Journal of In-service Education*, 31(2), pp.235-250 [online]. Available at: <http://www.tandfonline.com/doi/pdf/10.1080/13674580500200277> [accessed 24th August 2017]

Kincheloe, J. L. (1991) *Teachers as Researchers: qualitative inquiry as a path to empowerment* London: The Falmer Press

Koutsouris, G. and Norwich, B. (2018) What exactly do RCT findings tell us in education research? *British Educational Research Journal* 44(6), pp.939-959.
doi:10.1002/berj.3464

Kushner, S., Simons, H., James, D., Jones, K. and Yee, W. C. (2001) TTA School Based Research Consortia Initiative: the evaluation (final report) [online]. Available at: https://eprints.soton.ac.uk/41341/1/Kushner_etc_school_based_research_consortium_evaluation_2001.pdf [Accessed 24th August 2017]

Labaree, D. F. (2003) The Peculiar Problems of Preparing Educational Researchers. *Educational Researcher*, 32(4), pp.13–22 [online]. Available at: <https://doi.org/10.3102/0013189X032004013> [Accessed 26th May 2020]

Lampert, M. (1990) Knowing Teaching: the intersection of research on teaching and qualitative research. In: Cochran-Smith et al (eds.) *Handbook of Research on Teacher Education: enduring questions in changing contexts* (2008) New York: Routledge, pp.1164-1174

Lampert, M. and Hollinshead, A. (eds.) (2004) *Raising achievement through teacher research*. Walsall: University of Wolverhampton

La Velle, L. and Flores, M. A. (2018) Perspectives on evidence-based knowledge for teachers: acquisition, mobilisation and utilisation. *Journal of Education for Teaching* 44(5), pp.524-538 [online]. Available at: <https://www.tandfonline.com/doi/pdf/10.1080/02607476.2018.1516345?needAccess=true&> [Accessed 25th May 2020]

Lincoln, Y. S., and Guba, E. G. (1980) The distinction between merit and worth in evaluation. *Educational Evaluation and Policy Analysis*, 2(4), pp.61–71 [online]. Available at: <https://doi.org/10.3102/01623737002004061> [Accessed 26th May 2020]

Lincoln, Y. S. and Guba, E. G. (1990) Judging the quality of case study reports, *International Journal of Qualitative Studies in Education*. 3(1), pp.53-59. doi:10.1080/0951839900030105

Lingard, B. and Renshaw, P. (2010) Teaching as a research-informed and research-informing profession. In: Campbell, A. and Groundwater-Smith, S. (eds.) *Connecting Inquiry and Professional Learning in Education*. Oxon: Routledge pp.26-39

Livingston, K. and Shiach, L. (2010) Co-constructing a new model of teacher education. In: Campbell, A. and Groundwater-Smith, S. (eds.) *Connecting Inquiry and Professional Learning in Education*. Oxon: Routledge pp.83-95

Luttenberg, J., Meijer, P. and Oolbekkink-Marchand, H. (2017) Understanding the complexity of teacher reflection in action research. *Educational Action Research* 25(1), pp.88-102. doi:10.1080/09650792.2015.1136230

Maaranen, K. (2009) Practitioner research as part of professional development in initial teacher education. *Teacher Development* 13(3), pp.219-237

Maxwell, B., Greany, T., Aspinwall, K., Handscomb, G., Seleznyov, S. and Simkins, T. (2015) *Approaches to Research & Development for 'great pedagogy' and 'great CPD' in teaching school alliances*, Nottingham, NCTL

McIntyre, D. (1993). In: Calderhead, J. and Gates, P. *Conceptualising Reflection in Teacher Development*. London: Falmer Press

McIntyre, D. (ed.) (1997) *Teacher Education Research in a New Context: the Oxford Internship Scheme*. London: Paul Chapman Publishing

McKenney, S. and Schunn, C.D. (2018) How can educational research support practice at scale? Attending to educational designer needs. *British Educational Research Journal*, 44(6), pp.1084-1100. doi:10.1002/berj.3480

McLaughlin, C., Black-Hawkins, K., McIntyre, D. and Townsend, A. (2008) *Networking Practitioner Research*. London, Routledge.

McLaughlin, C. (2010). Networks of researching schools: Lessons and questions from one study. In: Campbell, A. and Groundwater-Smith, S. (eds.) *Connecting Inquiry and Professional Learning in Education*. Oxon: Routledge pp.152-165

McNamara, O., Murray, J., Phillips, R. (2017) *Policy and Research Evidence in the 'Reform' of Primary Initial Teacher Education in England* [online]. York: Cambridge Primary Review Trust. Available at: <https://cprtrust.org.uk/wp-content/uploads/2017/01/McNamara-report-170127.pdf> [Accessed 26th May 2020]

McPhail, G. (2016) The fault lines of recontextualisation: the limits of constructivism in education. *British Educational Research Journal*, 42(2), pp.294-313. doi:10.1002/berj.3199

Menter, I. and Hulme, M. (2010) Teacher researchers in the UK: What are their needs? Some lessons from Scotland. In: Campbell, A. and Groundwater-Smith, S. (eds.) *Connecting Inquiry and Professional Learning in Education*. Oxon: Routledge pp. 109-121

Menter, I. (2016) UK and Irish teacher education in a time of change. In: The Teacher Education Group *Teacher Education in Times of Change: responding to challenges across the UK and Ireland* Bristol: Policy Press, pp.19-36

Mincu, M. (2013) *Teacher quality and school improvement: what is the role of research?* Research and Teacher Education: the BERA-RSA Inquiry.

Morgan, D. (2007) Paradigms lost and pragmatism regained: methodological implications of combining qualitative and quantitative methods. *Journal of Mixed Methods Research*, 1(1), pp.48-76 [online]. Available at:

<http://mmr.sagepub.com/content/1/1/48.full.pdf+html> [Accessed: November 2016]

Moss, G. (2016) Knowledge, education and research: Making common cause across communities of practice. *British Educational Research Journal* 42(6), pp.927-944. doi:10.1002/berj.3249

Murray Li, T. (2007) Governmentality. *Anthropologica*, 49(2), pp.275-281 [online]. Available at: www.jstor.org/stable/25605363 [Accessed 26th May 2020]

Murray, J. (2016) Teacher education and higher education. In: *The Teacher Education Group Teacher Education in Times of Change: responding to challenges across the UK and Ireland* Bristol: Policy Press, pp.179-200

Musset, P. (2010) Initial Teacher Education and Continuing Training Policies in a Comparative Perspective: Current Practices in OECD Countries and a Literature Review on Potential Effects, *OECD Education Working Papers* 48, OECD Publishing. <http://dx.doi.org/10.1787/5kmbp7s47h-en> [Accessed 24th August 2017]

Mutton, T. (2016) Partnership in teacher education. In: *The Teacher Education Group Teacher Education in Times of Change: responding to challenges across the UK and Ireland* Bristol: Policy Press, pp.201-216

National College for Teaching and Leadership (2014) Impact of Teaching Schools [online]. Available at: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/309938/teaching-schools-impact-report-2014.pdf [accessed 24th August 2017]

National College for Teaching and Leadership (2015) Newly qualified teachers: annual survey 2015 research report' [online]. Available at: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/477461/Newly_Qualified_Teachers_Annual_Survey_2015.pdf [Accessed 10th November 2016]

National College for Teaching and Leadership (2016) Newly qualified teachers: annual survey 2016 research report [online]. Available at:

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/570147/NQT2016_National_Survey_FINAL.pdf [Accessed 24th August 2017]

National College for Teaching and Leadership (2017) Newly qualified teachers: annual survey 2017 research report [online]. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/738037/NQT_2017_survey.pdf [Accessed 20th May 2020]

Nelson, J. and O'Beirne, C. (2014) *Using evidence in the classroom: what works and why?* Slough: NFER [online].Available: at <https://www.nfer.ac.uk/publications/IMPA01/IMPA01.pdf> [Accessed 10th November 2016]

Nolen, A. and Vander Putten, J. (2007) Action Research in Education: Addressing Gaps in Ethical Principles and Practices. *Educational Researcher* 36(7). doi:10.3102/0013189X07309629

Norris, P. (1997) Representation and the democratic deficit. *European Journal of Political Research*, 32(2), pp.273-282. doi:10.1111/1475-6765.00342

Office for Standards in Education, Children's Services and Skills (2019) The education inspection framework [online]. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/801429/Education_inspection_framework.pdf [Accessed 20th May 2020]

Orchard and Winch (2015) What training do teachers need? Why theory is necessary to good teaching? *Impact: Philosophical Perspectives on Education Policy* 22 [online]. Available at: <http://onlinelibrary.wiley.com/doi/10.1111/2048-416X.2015.12002.x/epdf> [accessed 24th August 2017]

Ovenden-Hope, T. and la Velle, L. (2015) Translational research in education for knowledge mobilisation: a study of use and teacher perception in primary schools in England, UK, *Journal of Education for Teaching*, 41(5), pp.574-585. doi:10.1080/02607476.2015.1105541

Passy, R., Georgeson, J. and Gompertz, B. (2018) Building learning partnerships between schools and universities: an example from south-west England. *Journal of Education for Teaching*, 44(5), pp.539-555. doi:10.1080/02607476.2018.1516346

Patton, M. Q. (1997) *Utilization-focused Evaluation* (3rd ed.). London: Sage

Peiser, G. (2016) The place of research in teacher education. In: The Teacher Education Group *Teacher Education in Times of Change: responding to challenges across the UK and Ireland* Bristol: Policy Press, pp.161-178

Perryman, J. (2011) The return of the native: the blurred boundaries of insider/outsider research in an English secondary school. *International Journal of Qualitative Studies in Education*, 24(7), pp.857-874. doi: 10.1080/09518398.2010.529842 Available online: <http://dx.doi.org/10.1080/09518398.2010.529842> [accessed 24th August 2017]

Petty, G. (2014). *Evidence-based Teaching: a practical approach* (2nd ed.). Oxford: Oxford University Press

Porter, S. and O'Halloran, P. (2012) The use and limitation of realistic evaluation as a tool for evidence-based practice: a critical realist perspective. *Nursing Inquiry*, 19(1), pp.18-28. doi:10.1111/j.1440-1800.2011.00551.x

Procter, R. (2015) Teachers and school research practices: the gaps between the values and practices of teachers. *Journal of Education for Teaching*, 41(5), pp.464-477. doi: 10.1080/02607476.2015.1105535

Punch, K. F. and Oancea, A. (2014) *Introduction to Research Methods in Education* (2nd ed.). London: Sage.

Rea, S., Sandals, L., Parish, N., Hill, R. and Gu, Q. (2015a). *Leadership of great pedagogy in teaching school alliances: Research case studies*. National College for Teaching and Leadership.

Rea, S., Sandals, L., Parish, N., Hill, R. and Gu, Q. (2015b). *Leadership of great pedagogy in teaching school alliances: Final report*. National College for Teaching and Leadership.

Researchers in Schools (2014) Researcher's Brochure [online]. Available at: <https://www2.le.ac.uk/departments/doctoralcollege/archive/archive/researchers-in-schools/brochure> [Accessed 20th May 2020]

Robson, C. (2002) *Real World Research: A Resource for Social Scientists and Practitioner-researchers* (2nd ed.). Oxford: Blackwell Publishers

Royal Society and British Academy (2018) Harnessing educational research [online]. Available at: <https://royalsociety.org/-/media/policy/projects/rs-ba-educational-research/educational-research-report.pdf> [accessed 26th May 2020]

Sachs, J. (1999) Using teacher research as a basis for professional renewal. *Journal of In-service Education*, 25(1), pp.39-53. doi: 10.1080/13674589900200072

Saeverot, H. and Kvam, V. (2019) An alternative model of researching educational practice: a pedagogic–stereoscopic point of view. *British Educational Research Journal* 45(1), pp.201-218. doi:10.1002/berj.3493

Sahlberg, P. (2019) The Structure of Teacher Education in Ireland: review of progress in implementing reform [online]. Available at: <https://hea.ie/assets/uploads/2019/05/HEA-Structure-of-Teacher-Education.pdf> [accessed 17th July 2020]

Shacklock, G. and Smyth, J. (1998). *Being Reflexive in Critical and Social Educational Research*. London: Routledge

Simons, H. (1996) The Paradox of Case Study. *Cambridge Journal of Education* 26(2), pp.225-240. doi:10.1080/0305764960260206

Simons, H. (2003) Evidence-based practice: panacea or over promise? *Research Papers in Education* 18(4), pp.303-311

Simons, H. (2004) Utilizing Evaluation Evidence to Enhance Professional Practice. *Evaluation* 10(4), pp.410-429. doi:10.1177/1356389004050284

Simons, H., Kushner, S., Jones, K. and James, D. (2003) From evidence-based practice to practice-based evidence: the idea of situated generalisation, *Research Papers in Education* 18(4), pp.347-364. doi:10.1080/0267152032000176855 Available online: <http://dx.doi.org/10.1080/0267152032000176855> [accessed 24th August 2017]

Simons, H. (2015) Interpret in context: Generalizing from the single case in evaluation. *Evaluation* 21(2). pp.173-188

Sims, S., Moss, G. and Marshall, E. (2017) Teacher journal clubs: how do they work and can they increase evidence-based practice? *Impact* [online]. Available at: <https://impact.chartered.college/article/sims-teacher-journal-clubs-evidence-based-practice/> [Accessed 26th May 2021]

Springett, J. Participatory approaches to evaluation in health promotion. In: Rootman, I., Goodstadt, M., Hyndman, B., McQueen, D. V., Potvin, L., Springett, J. and Zigliopp, E. *Evaluation in health promotion: Principles and perspectives*, pp.83-105

Stake, R. E. (1995) *The Art of Case Study Research*. London, Sage.

Stenhouse, L. (1975) *An introduction to curriculum research and development*. London: Heinemann

Stenhouse, L. (1981) What counts as research? *British Journal of Educational Studies* 29(2), pp.103-114 [online]. Available at: <http://www.jstor.org/stable/pdf/3120018.pdf> [accessed 17th November 2016]

Stenhouse, L. (1983) The relevance of practice to theory. *Theory into Practice* 22(3), pp.211-215 [online]. Available at: <http://eds.a.ebscohost.com/eds/pdfviewer/pdfviewer?vid=6&sid=cfce7be6-0a27-4744-b5f9-38e37f4fc6e9%40sessionmgr4008&hid=4103> [Accessed: 17th November 2016]

Stoll, L. (2015) Three greats for a self-improving school system – pedagogy, professional development and leadership, National College for Teaching and Leadership [online]. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/406279/Three_greats_for_a_self_improving_system_pedagogy_professional_development_and_leadership_executive_summary.pdf [Accessed 26th May 2020]

Tann, S. (1993) Eliciting student teachers' personal theories. In: Calderhead, J. and Gates, P. (1993) *Conceptualising Reflection in Teacher Development*. London: Falmer Press pp.53-69

Taylor, C., Spence-Thomas, K., Rea, S., Sandals, L, Hill, R. and Gu, Q. (2014) Research & Development National Themes Interim Report. Nottingham, NCSL

Taysum, A. (2016) Educational leaders' doctoral research that informed strategies to steer their organizations towards cultural alignment. *Educational Management Administration & Leadership*, 44(2), pp.281–300 [online]. Available at: <https://doi.org/10.1177/1741143213496660> [Accessed 26th May 2020]

TeachFirst (2017) Putting evidence to work: how can we help new teachers use research evidence to inform their teaching? [online]. Available at:

https://www.teachfirst.org.uk/sites/default/files/2017-10/Putting_Evidence_to_work_2017.pdf [Accessed 26th May 2020]

Teaching Schools Council (2016) National Standards for school-based initial teacher training (ITT) mentors [online]. Available at:

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/536891/Mentor_standards_report_Final.pdf [Accessed 20th May 2020]

Teaching Schools Council (2017) The role of research and development in teaching schools: response to the NFER report [online]. Available at:

<https://www.tscouncil.org.uk/insights-into-the-role-of-research-and-development-in-teaching-schools/> [Accessed 22nd August 2017]

The Cabinet Office (2013) What Works: evidence centres for social policy. London.

Thomas, G., and James, D. (2006) Reinventing Grounded Theory: Some Questions about Theory, Ground and Discovery. *British Educational Research Journal*, 32(6), pp.767-795 [online]. Available at: www.jstor.org/stable/30032707 [Accessed 26th May 2020]

Thomas, L. (2017) The Masters in Teaching and Learning: Lessons to be learnt and key stakeholder perceptions. *Teacher Education Advancement Network Journal* 9(1), pp.45-55.

Thomas, U., Tiplady, L. and Wall, K. (2014) Stories of practitioner enquiry: using narrative interviews to explore teachers' perspectives of learning to learn, *International Journal of Qualitative Studies in Education*, 27(3), pp.397-411. doi: 10.1080/09518398.2013.771224

Training and Development Agency (2007) Professional standards for teachers [online]. Available at: https://www.rgs.org/NR/rdonlyres/13C47A9B-633C-436F-8617-668966AEAEB7/0/CGT_Online_TDA_standards2007.pdf [Accessed: 10th November 2016]

Training and Development Agency (2009) The National Framework for Masters in Teaching and Learning [online]. Available at:

http://www.tda.gov.uk/upload/resources/pdf/m/mtl_national_framework [Accessed 17th November 2016]

Thorsten, A. (2017) Generating knowledge in a Learning Study – from the perspective of a teacher researcher. *Educational Action Research* 25(1), pp.88-102. doi:10.1080/09650792.2016.1141108

Tillema, H. H., Barak, L. O. and Marcos, J. J. M. (2008) Articulating Choice and Deliberation in Conducting Research--Researchers "Working in the Interpretive Zone". *Ethnography and Education* 3(1), pp.49-62

Torgerson, D. and Torgerson, C. (2013) *Randomised trials in education: An introductory handbook*. Education Endowment Fund.

Torney-Purta, J. (1985) Linking Faculties of Education with Classroom Teachers Through Collaborative Research. *The Journal of Educational Thought* 19(1), pp.71-77 [online]. Available at: www.jstor.org/stable/23769198 [Accessed 26th May 2020]

Wall, K. and Hall, E. (2017) The teacher in teacher-practitioner research: Three principles in inquiry [online]. In Boyd, P. and Splitz, A. (eds.) *Teachers and Teacher Educators Learning Through Inquiry: International Perspective*. Available at: https://www.academia.edu/33923746/Teachers_and_Teacher_Educators_Learning_Through_Inquiry_International_Perspectives [Accessed 20th May 2020] pp.35-62

Wenger-Trayner, E. and B. Wenger--Trayner (2015). Communities of practice a brief introduction [online]. Available at: <https://wenger-trayner.com/wp-content/uploads/2015/04/07-Brief-introduction-to-communities-of-practice.pdf> [Accessed 26th May 2020]

Whitty, G., Anders, J., Hayton, A., Tang, S., Wisby, E. (2016) *Research and Policy in Education: Evidence, Ideology and Impact*. Institute of Education Press (IOE Press).

Wieser, C. (2018) Evidence and its integration into teacher knowledge: foucaultian perspectives to link research knowledge and teaching. *Journal of Education for Teaching* 44(5), pp.637-659. doi:10.1080/02607476.2018.1516352

Williams, D. and Coles, L. (2007) Teachers' approaches to finding and using research evidence: an information literacy perspective. *Educational Research* 49(2), pp.185-206 [online]. Available at: <http://dx.doi.org/10.1080/00131880701369719> [Accessed 24/08/17]

Williamson McDiarmid, G. and Clevenger-Bright, M. (1990) Rethinking Teacher Capacity. In: Cochran-Smith et al (eds.) *Handbook of Research on Teacher Education: enduring questions in changing contexts* (2008) New York: Routledge, pp.134-156

Winch, C., Oancea, A. and Orchard, J. (2013) The contribution of educational research to teachers' professional learning – philosophical understandings [online]. Available at: <https://www.bera.ac.uk/wp-content/uploads/2014/02/BERA-Paper-3-Philosophical-reflections.pdf?noredirect=1> [Accessed 24th August 2017]

Wrigley, T. (2018) The power of 'evidence': Reliable science or a set of blunt tools? *British Educational Research Journal* 44(3), pp.359-376. doi:10.1002/berj.3338

Wyse, D. and Torgerson, C. (2017) Experimental trials and 'what works?' in education: The case of grammar for writing. *British Educational Research Journal* 43(6), pp.1019-1047. doi:[10.1002/berj.3315](https://doi.org/10.1002/berj.3315)

Wyse, D., Brown, C., Oliver, S. and Poblete, X. (2018) The BERA Close-to-Practice Research Project Research Report [online]. Available at: <https://www.bera.ac.uk/researchers-resources/publications/bera-statement-on-close-topractice-research> [Accessed 20th May 2020]

Younie, S., Audain, J., Eloff, I., Leask, M., Procter, R. and Shelton, C. (2018) Mobilising knowledge through global partnerships to support research-informed teaching: five models for translational research. *Journal of Education for Teaching* 44(5), pp.574-589. doi:[10.1080/02607476.2018.1516348](https://doi.org/10.1080/02607476.2018.1516348)

Zeichner, K. and Klehr, M. (1999) Teacher Research as Professional Development for P-12 Educators. Washington, National Partnership for Excellence and Accountability in Teaching.

Zeichner, K. and Hollar, J. (2016) Developing professional capital in teaching through initial teacher education: comparing strategies in Alberta Canada and the U.S. *Journal of Professional Capital and Community* 1(2).

Appendices

Appendix 1a: Email to gatekeepers

Dear Gatekeeper,

I am a PhD student at Liverpool John Moores University investigating the DfE's proposal for 'evidence-based practice' in education. I am writing to ask if you would like your school to be involved in my research. As a teacher who has engaged in Research and Development (R&D) alongside teaching, I know that more could be done to develop this strategy for the benefit of all involved. It is, therefore, my intention to give your staff the opportunity to 'voice' their opinions on the role of research in the teaching profession.

My research project consists of three phases but I am only asking for your help in the initial stage. Your participation in the first phase of my research will involve emailing your staff a link to an anonymous survey to be completed online. This will consist of mainly multiple-choice questions (see attached document). The survey should only take approximately ten minutes to complete.

There is no obligation to participate in the other elements of my research, or even to complete this initial phase as you will have the right to withdraw from the project at any time, although data already collected in the anonymous online surveys will be irretrievable.

If you would like your school to participate, all you have to do is forward this link to your staff: <https://ljmu.onlinesurveys.ac.uk/research-in-education>. Please do not hesitate to contact me should you require any further information.

Yours faithfully,

Contact details of supervisor:

Appendix 1b: Letter to gatekeepers

Dear Gatekeeper,

I am a PhD student at Liverpool John Moores University investigating the DfE's proposal for an 'evidence-informed teaching profession'. I am writing to ask if you would like your school to be involved in my research. As a teacher who has engaged in Research and Development (R&D) alongside teaching, I know that more could be done to develop this strategy for the benefit of all involved. It is, therefore, my intention to give your staff the opportunity to 'voice' their opinions on the role of research in the teaching profession.

My research project consists of three phases but I am only asking for your help in the initial stage. Your participation in the first phase of my research will involve placing paper surveys in a visible place (possibly the staff room) so your staff can complete the 10 minute survey (attached) if they wish. If you would like me to separate the anonymous data I receive from your school and send this to you in a report, please let me know and I will be happy to share this with you.

There is no obligation to participate in the other elements of my research, or even to complete this initial phase as you will have the right to withdraw from the project at any time, although data already collected in the anonymous online surveys will be irretrievable.

Please do not hesitate to contact me should you require any further information.

Yours faithfully,

Contact details of supervisor:

Appendix 2: Survey Pilot Outcomes

Participant	Comment	Outcome
A food technology teacher from West Yorkshire	Format of the online survey was distorted on her smart phone. Maybe the online platform, SurveyMonkey would be more user-friendly.	The non-commercial online survey tool was retained as it was assumed that whilst some may follow the link on a mobile device, most respondents would receive the link via a school email account that they would access on a desktop computer.
A primary teacher in the North West	It only took seven minutes as it was 'really user-friendly and easy to complete'.	The estimated completion time was reduced from 15 to 10 minutes.
An English teacher in South Yorkshire	Another barrier for Question 12 might be: 'the focus on exam preparation so no time to research to improve teaching'.	A further statement, 'research not being a focus/ school priority'. was added to the list.
Supply teacher from Wales	Question 16, which originally asked 'how beneficial do you see the following advantages of teachers engaging in their own research projects?' is leading. Suggestion: 'how beneficial do you consider the following to teachers engaging in their own research?'. As a supply teacher, defining her role is difficult. Suggestion: specify "please refer to your most recent placement/most frequent type of establishment" in the 'About your place of work' section.	This advice was taken on board along with the conditional phrase 'if at all' in parentheses. This was an important point to take on board as it also applied to student teachers who may have had placements in more than one establishment depending upon the stage of their course when completing the survey.

Appendix 3: Survey Questions

Developing the use of research by educational practitioners

The aim of this study is to understand how educational practitioners feel about the DfE's proposal for 'evidenced-based practice' in teaching. To thoroughly investigate the perspectives of those involved in teaching, I would first of all like to ask for your opinions about the government's expectations for teachers to engage with research.

In order to help with this research, it would be greatly appreciated if you could complete this online survey. It should take approximately 10 minutes.

The next stage of my investigation involves a face-to-face discussion of how practitioners see teacher research working (if at all) in practice. If you would like to take part in this part of my study as well, there will be the opportunity to express your interest at the end of the survey. You do not have to participate in both the online survey and the discussion.

Please only take part in this survey if you consider yourself to be one of the following:

- Student teacher
- Teacher (primary, secondary and tertiary)
- Senior manager in a school/college
- Teaching assistant in a school/college

You will not be able to take part in this study if you are not directly connected with education.

All data collected will be entirely anonymous. Data from your school as a whole may be shared with your senior management but there will be no identifiable information about you passed on i.e. answers to Questions 1-10 will be omitted.

This study has received ethical approval from LJMU's Research Ethics Committee: 16/EHC/003, approved 12/01/2016.

Please note that by completing and returning this questionnaire, you are consenting to be part of this research study and for your data to be used as described above. If you are still happy to participate in the survey, please check this box.

Many thanks.

About You

1. What is your gender? Please circle.
 - a. Male
 - b. Female
 - c. Other
 - d. Prefer not to say

2. Which best describes your role in education? Please circle.
 - a. PGDE student teacher
 - b. PGCE student teacher
 - c. Undergraduate student teacher
 - d. School Direct student teacher
 - e. School Centred Initial Teacher Training student
 - f. Class teacher
 - PTO for more options*
 - g. Supply teacher
 - h. Middle leader
 - i. Senior leader
 - j. Cover supervisor
 - k. Teaching assistant
 - l. Other (please specify)

3. How long have you been in your current role? Please circle.
 - a. I am a student teacher
 - b. This is my first year
 - c. 2-5 years
 - d. 6-9 years
 - e. 10-14 years
 - f. 15+ years

4. Would you describe your employment as:
 - a. Full time?
 - b. Part time?
 - c. Other

About Your Place of Work (or most recent placement if a student)

5. Which sector of education do you work in? Please circle.
 - a. Early Years
 - b. Primary
 - c. Secondary
 - d. Tertiary
 - e. Other (please specify)

6. Which best describes the establishment you work in? Please circle.

- a. Maintained/ Local Authority controlled
 - b. Academy
 - c. Free school
 - d. Independent
 - e. Grammar
 - f. Pupil Referral Unit
 - g. Conversion academy
 - h. Other (please specify)
7. Is your school a designated 'Teaching School' as defined by the DfE? Please circle.
- a. Yes
 - b. No
 - c. N/A
8. How would you describe the location of your school/college? Please circle.
- a. Urban
 - b. Suburban
 - c. Rural
 - d. Coastal
 - e. Island
 - f. None of the above (can you be more specific?)
9. Are you aware of any connections with universities that your school/ college has?
Please circle all that apply.
- a. Student teachers from at least one university
 - b. Outreach programmes
 - c. Continuing Professional Development
 - d. Research collaborations
 - e. Research facilitation
 - f. Other (please explain)
10. Would you describe your school/college as having:
- a. A high percentage of pupils entitled to Free School Meals (FSM) in relation to the national average?
 - b. A percentage of FSM pupils similar to that of the national average?
 - c. A low percentage of FSM in relation to the national average?
 - d. Don't know

Opinions of Research in the Teaching Profession

11. How do you rate the following items in terms of relevance and importance to your job?

	Not important	Quite important	Important	Very important
Sharing experiences with colleagues, maybe as part of a Joint Practice Development				
Working in a development group i.e. to address parts of the school development plan				
Using web-based materials to research issues related to education				
Being critically reflective				
Understanding why research is important				
Understanding what might be learnt from research				
Familiarity with the latest research findings				
Knowing the implications of research for your day-to-day practice				
Knowing the implications of research for education generally				
Using the results of evidence gathered from strategies trialled elsewhere				
Being able to critique or review research				

Combining information gained from your own practice with academic theories				
Being actively involved in the research process rather than being the subject of research				
Familiarity with a range of research methods				
Having the ability to analyse data gathered through research				

12. In your opinion, how problematic are the following potential barriers to research for teachers?

	Not a problem	Could be a problem	This is a definite barrier	N/A
Time				
Research not being a focus/ school priority				
Gaining permission from senior management				
Knowing how to conduct your own research				
Procedural 'hurdles' such as gaining ethical approval				

The expense of a Master's course				
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Anything else? Please specify.

13. How would you rate your training/ Continuing Professional Development (CPD) in preparing you to access educational research to support your teaching? Please tick.

Very good	Good	Satisfactory	Poor	N/A
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14. How would you rate your training/ CPD in preparing you to assess the robustness of educational research? Please tick.

Very good	Good	Satisfactory	Poor	N/A
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15. How would you rate your training/ CPD in preparing you to understand and apply the findings from educational research? Please tick.

Very good	Good	Satisfactory	Poor	N/A
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Benefits of Research

16. In your opinion, how beneficial is teacher research to the following?

	Highly beneficial	Beneficial	Quite beneficial	Not very beneficial	Not beneficial at all
Improving practice					

Outcomes for young people					
Links to performance management targets					
The possibility of promotion					
Increasing job opportunities beyond your current profession					

Anything else? Please specify

Would you like to make any further comments on issues related to this survey? Please detail below:

If you would like to take part in an individual or paired discussion (whichever is preferable) to discuss teacher research further, please provide your email address below:

Alternatively, you can email me separately: x.x.xxxxxxx@ljmu.ac.uk

Thank you for participating in this survey.

Appendix 4a: participant information sheet and consent form (semi-structured interview)



LIVERPOOL JOHN MOORES UNIVERSITY

PARTICIPANT INFORMATION SHEET

You have expressed an interest in taking part in a discussion about teacher research. Before you decide that you definitely want to go ahead with this, it is important that you understand why the research is being done and what it involves. Please take time to read the following information. Please ask me if there is anything that is not clear or if you would like more information. Take time to decide if you still want to take part or not.

1. What is the purpose of the study?

The purpose of this PhD study is to gather opinions about educational practitioners engaging with research. In this part of the study, I would like you to share your views of how you see teacher research working (if at all) in practice.

2. Do I have to take part?

No. It is up to you to decide whether or not to take part. If you are willing to take part in the discussion (in this case, a semi-structured interview) you will be asked to sign a consent form.

You are still free to withdraw from the interview at any time and without giving a reason. A decision to withdraw will not affect your rights. Any information that you have told me in the interview can be removed from my study; however, please note that the information given in the anonymous survey will be irretrievable so this will still be included.

3. What will happen to me if I take part?

If you would like to take part in the interview, we can arrange via email/ phone call a convenient time for me to visit your place of work so I can ask you questions about teacher research. This should take no longer than 20 minutes. You will have the opportunity to take part until 14/07/17.

4. Are there any risks / benefits involved?

There are no risks involved but there will be the inconvenience of taking about 20 minutes out of your busy working schedule. The main benefit of taking part in this study will be the opportunity to reflect upon your engagement with research.

5. Will my taking part in the study be kept confidential?

If you would like to be interviewed with a colleague, confidentiality will obviously depend upon those present. If you would prefer, the interview can be conducted one-to-one. I will record what is said so I can transcribe at a later date but I will keep everything confidential.

Data will be kept in a locked filing cabinet on LJMU premises and on a computer protected by a password.

This study has received ethical approval from LJMU's Research Ethics Committee (16/EHC/003, approved 12/01/2016)

Should you have any comments or questions regarding this research, you may contact:
Rachel Jackson (PhD student): x.x.xxxxxxx@ljmu.ac.uk, 0151 XXX XXXX

Alternatively, you may contact Dr Gillian Peiser (Director of Studies): x.xxxxxxx@ljmu.ac.uk, 0151 XXXX

If you any concerns regarding your involvement in this research, please discuss these with the researcher in the first instance. If you wish to make a complaint, please contact researchethics@ljmu.ac.uk and your communication will be re-directed to an independent person as appropriate.



**LIVERPOOL JOHN MOORES
UNIVERSITY
CONSENT FORM**

Please tick the boxes below to confirm your understanding of the study and that you are happy to take part in the semi-structured interview.

By signing this consent form, you are agreeing to the researcher asking you to answer approximately four questions about teacher research. The discussion (in this case, known as a 'semi-structured interview') will last about twenty minutes. Your opinions will be recorded and will be written up in reports and a PhD thesis. Your name will not be used.

1. I confirm that I have read and understand the information provided for the above study. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily.

2. I understand that participation in the research is voluntary and that I am free to withdraw at any time, without giving a reason and that this will not affect my legal rights.

3. I understand that any personal information collected during the study will be anonymised and remain confidential.

4. I agree to conform to the data protection act.

Name of Participant:

Date:

Signature:

Name of Researcher:

Date:

Signature:

Appendix 4b: interview schedule

Developing the use of research by educational practitioners

1. Ice-breaker - general information about their role in education
2. Perceptions of teacher research

Questions will be based upon what has been discovered from the survey results collected so far.

3. Experience of research

How often do you engage with the following types of research-related activities?
What do you think of their place in your profession?

Prompts –

- a) Reading text books
 - b) Accessing articles from peer-reviewed (scholarly) journals
 - c) Reading education related newspaper articles
 - d) Reading magazine articles (i.e. from a trade union)
 - e) Engaging in social media about education related issues (i.e. Twitter)
 - f) Participating in research networks (i.e. Expansive Education Network)
 - g) Watching ‘vlogs’ or ‘webinars’ (i.e. TeachMeet)
 - h) Staging your own action research project
 - i) Analysing data (of pupils or the school) to improve practice
 - j) Working in a development group i.e. to address parts of school development plan
 - k) Collaborating with academics on a research project
4. Development of teacher research

What do you think would encourage you to engage with research more?

Prompts -

- a) Cash incentive for practitioners to conduct their own research project
 - b) Financial help to fund a Master's course
 - c) Collaboration with professional researchers
 - d) Collaboration with other members of staff, for example, in a 'learning set'
 - e) Time set aside for discussion of research (e.g. in a 'journal club')
 - f) Continuing Professional Development focused upon teacher research
 - g) User-friendly evidence produced by researchers
 - h) Less contact time/ reduced timetable to make time for research
 - i) Sabbatical (e.g. temporarily leaving teaching to be able to research)
 - j) Secondment (e.g. spending a period of time at a university)
 - k) Being part of a supportive network of other teacher researchers and academics to help conduct your own research
 - l) Responsibility for research to be designated to a member of staff who would cascade information to all staff
 - m) A forum (online or physical) where evidence is shared between schools and universities
5. Any further comments on issues related to teacher research

Preliminary analysis of completed surveys might inform other questions or prompts.

Appendix 5a: gatekeeper information sheet and consent form (ethnography)



LIVERPOOL JOHN MOORES UNIVERSITY

GATEKEEPER INFORMATION SHEET

1. What is the reason for this information sheet?

This information sheet explains what will be involved if you agree to your organisation being involved in the ethnographic study of my PhD research.

2. What is the purpose of the study/rationale for the project?

The purpose of this study is to gain an insight into the research *practices* of a 'research-rich' primary and secondary school.

3. What will taking part involve?

Participation will involve me observing research practices in the school throughout the next school year and interviewing about four research-engaged teachers. I will interview these teachers for about 30 minutes in each term so I can learn more about the research practices they are engaged in. My other visits to the school will be organised to coincide with planned research events such as staff meetings or training but could also include more ad hoc research-related activities. I will only visit the school at pre-agreed times and will liaise with you so that your staff have one week's notice.

4. Why do I need access to staff meetings/ training events?

As an ethnographer, I hope to gain a deeper understanding of the research culture in your school. I intend to experience and document research practices over the next school year (2016-17). To do this, I plan to observe any research-related activities in staff meetings and training events such as INSET days and 'twilights'. I will make brief notes during these observations but will try not to distract anyone. I will ensure that everyone present is comfortable with my presence.

5. How will I use the information gathered in the study?

I will use the information to describe both the research practices in the school and the experiences of participating staff.

6. Will the name of the organisations taking part in the study be kept confidential?

No names will be used in my PhD thesis or any reports you request.

7. If you are willing to assist in the study, what happens next?

If you are interested in helping me with this part of my project, please could you sign the **Gatekeeper Consent Form** provided and return to me? You can do this electronically or send by post to:

I am also willing to visit your school/college to explain my research in further detail and collect the consent form.

Should you have any comments or questions regarding this research, you may contact:

Rachel Jackson (PhD student): x.x.xxxxxx@ljmu.ac.uk, 0151 XXX XXXX

You may also contact Dr Gillian Peiser (Director of Studies): x.xxxxxx@ljmu.ac.uk, 0151 XXX XXXX

**This study has received ethical approval from LJMU's Research Ethics Committee:
16/TPL/004**

If you have any concerns regarding your involvement in this research, please discuss these with the researcher in the first instance. If you wish to make a complaint, please contact researchethics@ljmu.ac.uk and your communication will be re-directed to an independent person as appropriate.



**LIVERPOOL JOHN MOORES
UNIVERSITY**

GATEKEEPER CONSENT FORM

Please tick to the boxes below to confirm your understanding of the study.

By signing this consent form, you are allowing me to recruit your staff to participate in my ethnographic study.

1. I confirm that I have read and understood the information provided for the above study. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily.
2. I will allow the researcher to observe pre-determined staff events such as meetings and training.
3. I understand that other members of staff (not participating in the study) may be present.
4. I agree to liaise with the researcher and inform all staff of the researcher's intended visits so non-participating staff have the opportunity to raise any concerns about the researcher's presence.
5. I will allow the researcher to interview research-engaged staff who volunteer to participate in this part of the study.
6. I understand that participation of our organisation and members in the research is voluntary and that they are free to withdraw at any time, without giving a reason and that this will not affect legal rights.
7. I understand that any personal information collected during the study will be anonymised and remain confidential.
8. I agree for the organisation and members to take part in the above study.

Name of Gatekeeper:

Date:

Signature:

Name of Researcher:

Date:

Signature:

Appendix 5b: participant information sheet (ethnographic case study)



LIVERPOOL JOHN MOORES UNIVERSITY

PARTICIPANT INFORMATION SHEET

(ethnography)

Your school has expressed an interest in taking part in an ethnographic study about teacher research. Before you decide whether or not you would like to take part, please take time to read the following information. Please ask me if there is anything that is not clear or if you would like more information.

1. What is the purpose of the study?

The purpose of this study is to gain an insight into the research practices of a 'research-engaged' primary and secondary school. To do this, I will be conducting an ethnographic study in your school, which will involve me being immersed in the research culture of the establishment and interviewing some participating practitioners about what I observe. This will allow me to describe the research practices of a teaching school when I write my PhD thesis.

2. What do I do if I do not wish to take part?

You do not have to take part and I will not attend the research-related activities that you are involved in if you do not want me to. If you do not mind my presence but do not want to be part of my study, I will exclude you from my observations. You are free to withdraw from the study at any time and without giving a reason. A decision to withdraw will not affect your rights. Any data that have been gathered about you and your professional practice can be removed from my study. Just let me know via email/ telephone/ a colleague or in person and it will not be a problem for me to readjust my study.

3. If I decide to take part, what happens next?

I will arrange to observe any research-related activities in staff meetings and training events such as INSET days and ‘twilights’. I will only be observing your professional practice at times that you are aware of and comfortable with. If desired, you may also express your views about research practices in a recorded discussion.

4. Are there any risks / benefits involved?

There are no risks involved and observations will not be judgemental or used against you in any way. I will ask you some questions about what I see but these will not be intrusive or interrupt your practice. The main benefit of taking part is that I can provide you with an individual report of your research practices, which you may find helpful.

5. Will my taking part in the study be kept confidential?

I will make notes with pseudonyms on a password-protected iPad. Data will be kept in a locked filing cabinet on LJMU premises and on a computer protected by a password. If a senior member of staff requests a report of my findings, this will describe the school’s practices and not that of individuals.

This study has received ethical approval from LJMU’s Research Ethics Committee: 16/TPL/004

Should you have any comments or questions regarding this research, you may contact:

Rachel Jackson (PhD student): x.x.xxxxxxx@ljmu.ac.uk, 0151 XXX XXXXX

You may also contact Dr Gillian Peiser (Director of Studies): x.xxxxxxx@ljmu.ac.uk, 0151 XXXX

If you any concerns regarding your involvement in this research, please discuss these with the researcher in the first instance. If you wish to make a complaint, please contact researchethics@ljmu.ac.uk and your communication will be re-directed to an independent person as appropriate.

Appendix 6a: gatekeeper information sheet and consent form (mixed-methods case study)

LIVERPOOL JOHN MOORES UNIVERSITY



GATEKEEPER INFORMATION SHEET (evaluation)

1. What is the reason for this information sheet?

This information sheet explains what will be involved if you agree to the research engagement programme offered by your school being evaluated for Phase Three of my PhD study.

2. What is the purpose of the study/rationale for the project?

The purpose of Phase Three is to evaluate the outcomes of teacher research using criteria pre-determined by educators engaged with research. *Perceptions* of teacher research were elicited from various practitioners in Phase One. Phase Two is running parallel to Phase Three and will involve observations of research *practices* in a teaching school. It is, however, only the third phase (evaluation of research *outcomes*) that you will be consenting to.

3. What will taking part involve?

If you agree to your teaching school's research engagement programme being evaluated, I will begin a two-part 'impact evaluation' using criteria set by: a) you as the 'service provider' and b) participating teachers as 'service users'. The 'process evaluation' questionnaire based on your success criteria (attached) will also be used to recruit volunteers for the next part of the impact evaluation. Consenting volunteers who provide their contact details on the questionnaire will be about aspirational outcomes by consequence of research engagement. These aspirational outcomes will then be independently evaluated when appropriate. Within six weeks of the impact evaluation being completed, the participants (including yourself) will have the opportunity to voice their opinions of their engagement with research in a semi-structured interview to supplement the evaluation data. I will only visit consenting practitioners at mutually convenient times and will seek the consent of gatekeepers of other schools if necessary.

4. How will outcomes be evaluated?

The methods of data collection will depend upon the success criteria expressed by participating practitioners. Depending upon the aspirational outcomes set by participants (e.g.

attainment results, pupil attitudes), I may need access to statistical data routinely maintained by the school (e.g. test results) and/or collect new data (e.g. with questionnaires). I will liaise with the participants and other appropriate gatekeepers to access this information by transparent means.

5. How will I use the information gathered in the study?

The evaluation of your school's engagement with research will supplement the other studies within my PhD project and can be shared with the school if requested.

6. Will the name of the organisations taking part in the study be kept confidential?

Neither the names of the organisation nor of individuals will be used in any research reports or in the final thesis.

7. If you are willing to assist in the study, what happens next?

If you are interested in helping me with this part of my project, please could you sign the **Gatekeeper Consent Form** provided and return to me? You can do this electronically or send by post to:

Should you have any comments or questions regarding this research, you may contact:

Rachel Jackson (PhD student): x.xxxxxxx@ljmu.ac.uk, 0151 XXX XXXX

You may also contact Dr Gillian Peiser (Director of Studies): x.xxxxxxx@ljmu.ac.uk, 0151 XXXXX

This study has received ethical approval from LJMU's Research Ethics Committee:
16/TPL/004

If you have any concerns regarding your involvement in this research, please discuss these with the researcher in the first instance. If you wish to make a complaint, please contact researchethics@ljmu.ac.uk and your communication will be re-directed to an independent person as appropriate.



Please tick to the boxes below to confirm your understanding of the study.

By signing this consent form, you are allowing me to evaluate the research engagement programme organised by your teaching school.

1. I confirm that I have read and understood the information provided for the above study. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily.

2. As the 'gatekeeper' for the teaching school, I will allow the researcher to recruit potential participants from the programme attendees as long as further gatekeeper consent is acquired if the potential participants are from other schools.

3. I will allow the researcher to use the school premises to interview research-engaged staff (from the said teaching school) who have volunteered to participate in the impact evaluation.

4. I will liaise with the researcher to conduct the appropriate means of evaluation as the 'service provider' (e.g. a 'process evaluation' of the programme).

5. I understand that participation of our organisation and members in the research is voluntary and that they are free to withdraw at any time, without giving a reason and that this will not affect legal rights.

6. I understand that any personal information collected during the study will be anonymised and remain confidential.

Name of Gatekeeper:

Date:

Signature:

Name of Researcher:

Date:

Signature:

Appendix 6b: evaluative survey for mixed-methods case study

Evaluation



I am a PhD student investigating teachers' engagement with/ in research. As part of this study, I will be evaluating the extent to which the Research Seminars are helping teachers to engage with/ in research.

In order to help with my study, it would be greatly appreciated if you could complete this double-sided survey. It should only take 5 minutes and if you would like to discuss teacher engagement with research even further, please do not hesitate to contact me (details overleaf).

My findings will be used in my PhD thesis and academic papers. Additionally, I will be sharing my findings with the [PRS] Teaching Alliance but all data collected will be entirely anonymous. If you provide your email address, this will not be used as an identification indicator.

This study has received ethical approval from LJMU's Research Ethics Committee: 16/TPL/004, approved 20/06/2016.

Please note that by completing and returning this questionnaire, you are consenting to be part of this research study and for your data to be used as described above. There will also be an opportunity to participate in a follow-up study focusing upon the impact of the seminars but this is voluntary.

Many thanks.

1. How did you find out about the seminar? Please tick all that apply.

Flyer	
Word of mouth	
[PRS] Teaching Alliance website	
It was recommended by my line manager	
Other (please specify below)	

.....

.....

.....

2. What were your reasons for attending this research seminar? **Please number each reason you select, starting with 1 for your top reason.** If any reasons do not apply, please leave them blank. You may number as many or as few as you feel appropriate. If you have a reason that is not on the list, please add your own and number accordingly.

Reason	Rank
I am interested in this particular topic	
I am interested in research in general	
I think social engagement with research is important	
I am familiar with the work of the researcher and wanted to find out more	
I enjoyed the seminars that I attended last year	
It was recommended as part of my CPD	
Attendance is part of my performance management/ appraisal	

3. To what extent do you agree with the following statements?

	Disagree	Agree to some extent	Neither agree, nor disagree	Agree	Strongly agree
The content was interesting					
The content was accessible					
The seminar was clearly presented					
I can see how it could be applied to my classroom					
I gained new ideas to try out					

Anything else? Please explain:

.....
.....
.....

4. How much impact do you think the seminar has had on your **subject knowledge**?

Please circle one:

Not sure No impact Some impact A great deal of impact

5. How much impact do think the seminar is likely to have on **teaching and learning** in your classroom? Please circle one:

Not sure No impact Some impact A great deal of impact

6. Would you like to make any further comments on this evening's seminar?

.....
.....
.....

7. Are there any improvements that you could recommend for future seminars?

.....
.....
.....

8. For my PhD research, I am keen to evaluate research engagement using success criteria set by teachers themselves. **Would you be interested in participating in a follow-up study (at your convenience) about the impact of the seminars?** If so, please provide your email address or phone number:

.....
.....

Alternatively, you can email me directly: x.x.xxxxxx@ljmu.ac.uk

Thank you for participating in this survey.

Appendix 7a: participant information sheet and consent form (evaluative case study)



LIVERPOOL JOHN MOORES UNIVERSITY

PARTICIPANT INFORMATION SHEET

Your head teacher has expressed an interest in the school's Lesson Study being evaluated. I am looking for research-engaged teachers/TAs from your school to allow me to evaluate their research project(s) using success criteria determined by you, the practitioners. Before you decide whether or not you would like to take part, please take time to read the following information.

1. What is the purpose of the study?

I am investigating 'teacher research' over three phases. In the first phase, I gathered the perceptions of teacher-led research from a range of practitioners. Phase Two consisted of observing research-related activities in a primary and secondary school to supplement the more general information. I am only asking you to participate in Phase Three, which is an evaluation of the Lesson Study you have already engaged in. The purpose of this study is to evaluate the outcomes of school-based research. The findings will be used for my PhD thesis and may also be shared with the school.

2. Do I have to take part?

You do not have to take part and you are free to withdraw from the study at any time and without giving a reason. A decision to withdraw will not affect your rights. Any data that have been gathered about you and your research project(s) can be removed from my study.

3. If I decide to take part, what happens next?

I will liaise with participants to arrange a focus group or semi-structured interviews to set the success criteria for the research engagement. I will then evaluate the outcomes whenever it is decided that this is appropriate. Participating practitioners will also have the opportunity to express their own views of the research process within six weeks of the evaluation. If you would like to take part, please sign the consent form provided.

4. Are there any risks / benefits involved?

There are no risks involved and the evaluation will not be judgemental or used against you in any way. You may experience some inconvenience as I may ask you for your help in the logistics of evaluating your research such as negotiating access to data. The main benefit of taking part in this study is that your research engagement will be independently evaluated and I can provide you with a report of my findings.

5. Will my taking part in the study be kept confidential?

I will keep records on a password-protected iPad. Data will be kept in a locked filing cabinet on LJMU premises and on a computer protected by a password. Pseudonyms will be used in my thesis.

**This study has received ethical approval from LJMU's Research Ethics Committee:
16/TPL/004**

Should you have any comments or questions regarding this research, you may contact:

Rachel Jackson (PhD student): x.x.xxxxxxx@ljmu.ac.uk, 0151 XXX XXXX

Alternatively, you may contact Dr Gillian Peiser (Director of Studies):
x.xxxxxxx@ljmu.ac.uk, 0151 XXX XXXX

If you any concerns regarding your involvement in this research, please discuss these with the researcher in the first instance. If you wish to make a complaint, please contact researchethics@ljmu.ac.uk and your communication will be re-directed to an independent person as appropriate.



LIVERPOOL JOHN MOORES UNIVERSITY

CONSENT FORM

Please tick the boxes below to confirm your understanding of the study and that you are happy to take part in the semi-structured interview.

By signing this consent form, you are agreeing to the researcher asking you to answer approximately four questions about your Lesson Study (see attached). The discussion (in this case, known as a 'semi-structured interview') will last about twenty minutes. Your opinions will be recorded and will be written up in reports and a PhD thesis. Your name will not be used.

1. I confirm that I have read and understand the information provided for the above study. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily.

2. I understand that participation in the research is voluntary and that I am free to withdraw at any time, without giving a reason and that this will not affect my legal rights.

3. I understand that any personal information collected during the study will be anonymised and remain confidential.

Name of Participant:

Date:

Signature:

Name of Researcher:

Date:

Signature:

Appendix 7b: parental consent/ assent forms (evaluative case study)



LIVERPOOL JOHN MOORES UNIVERSITY

PARTICIPANT INFORMATION

- What is this study about?

You might know that teachers in your school have been taking part in a project called Lesson Study in order to improve your learning. I am a researcher from a university and would like to know how learning in the school has improved (if at all) since teachers started this project last year. You have been asked if you want to take part in my study because your teacher thinks you will be good at explaining your learning to me.

- What will happen if I take part?

If you agree to take part in my study, you will be part of a focus group. A focus group is like a group discussion so you will be with about 4 of your classmates. I will ask you questions about your learning and record what you say. It will only be your voices that I record and only I will listen back to this so I can write everything down later on. The discussion will last between 15 and 20 minutes.

- What will be good about taking part and what might not be so good?

The good thing about taking part will be that you will get to talk about your learning to me and help your school understand what is working for you and maybe what could be better for you.

What might not be so good is that you will have to give up some of your time. I will try to make this as comfortable as possible, though, so there will be snacks and drinks available for you!

- Will anyone know what I say?

You do not need to worry about me telling other teachers about what you have said. When I report back to the school, I will just tell them general things that were discussed and not 'this person said that and that person said this'. This will be the same when I publish my study for other people to read. I will never use your real name and you can even make up a name for yourself if you want!

- Do I have to take part?

You do not have to take part and if you do not want to; neither myself nor your teacher will be offended!

This study has received ethical approval from LJMU's Research Ethics Committee: 16/TPL/004

If you have any comments or questions about this research, you may contact:
Rachel Jackson (PhD student): x.x.xxxxxxx@ljmu.ac.uk, 0151 XXX XXXX

You may also contact Dr Gillian Peiser (Director of Studies): x.xxxxxx@ljmu.ac.uk, 0151 XXX XXXX

If you any concerns about your involvement in this research, please discuss these with the researcher in the first instance. If you wish to make a complaint, please contact researchethics@ljmu.ac.uk and your communication will be re-directed to an independent person as appropriate.



LIVERPOOL JOHN MOORES UNIVERSITY

ASSENT FORM FOR CHILDREN / OTHER DEPENDENTS

Child (or if unable, parent/guardian on their behalf) / young person to circle all they agree with

- | | |
|--|--------|
| Have you read (or had read to you) information about this project? | Yes/No |
| Has somebody else explained this project to you? | Yes/No |
| Do you understand what this project is about? | Yes/No |
| Have you asked all the questions you want? | Yes/No |
| Have you had your questions answered in a way you understand? | Yes/No |
| Do you understand it's OK to stop taking part at any time? | Yes/No |
| Are you happy to take part? | Yes/No |

If any answers are 'no' or you **don't** want to take part, don't sign your name!

If you **do** want to take part, you can write your name below

Your name _____

Date _____

Your parent or guardian must write their name here if they are happy for you to do the project.

Print Name _____

Sign _____

Date _____

The researcher who explained this project to you needs to sign too.

Print Name _____

