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Pedagogies of Engagement:

Teachers' engagement practices in English and Mathematics at Key Stage Two of the primary school

by

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July 2020

Thesis Submitted for the Degree of Doctor of Philosophy

School of Education

Durham University

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List of Abbreviations

CPD	Continuing Professional Development
DfE	Department for Education
HA	Higher Ability
ICT	Information Computer Technology
LA	Lower Ability
MA	Middle Ability
Ofsted	Office for Standards in Education
PISA	Program for International Students Assessment
SATS	Student Assessment Test
TT	Teacher Type

Introduction

Student engagement is a priority in the current education system. Schools, colleges and universities use their websites and prospectuses to demonstrate how their curriculum and approaches are engaging. Companies that supply teaching materials for educators also use engagement as a selling point. When teachers are observed by peers, head teachers or Ofsted, one of their main priorities is to show they have delivered a lesson which has engaged the learners. Engagement appears to be the 'mechanism' that mediates the relationship between classroom instruction and student outcomes (Gettinger & Walter, 2012). Its counterpart, disengagement, not only fails to produce such changes, but can lead to undesirable behaviours. Accordingly, engagement in the classroom is seen as something to be assisted.

My personal interest in engagement originates from my own initial teacher training experience (ITE) when I trained as a primary school teacher. The term, 'engagement' was used frequently without ever being defined. The importance of engagement was made clear, but, it seemed to mean different things to various teaching professionals. As a newcomer to the profession, I adopted a style of pedagogy which I felt would engage the pupils in my class. When I was observed at regular intervals, as is required during ITE courses and subsequently during my year as a Newly Qualified Teacher (NQT), some observers found my pedagogical style very effective in engaging children, while others found it less so. While all teachers experience various levels of success from lesson to lesson, it seemed to me that the disparity in judgements was mainly due to the observers' notion of engagement and subsequently what engagement looked like in the classroom. I found it puzzling that a concept at the forefront of

the current education process lacked clarity for practitioners from novice to senior level, particularly as it is not a new concept. In researching this thesis I came across the early twentieth century short story, *The Scharz-Metterklume Method* by Hector Hugo Munro (often known as Saki) which describes the central character, a governess, wanting to 'engage' the children in her care. Academic interest in engagement, meanwhile, can be traced to John Dewey's seminal work, *Democracy and Education: An introduction to the Philosophy of Education* (Dewey, 1916), published five years after Saki's fictional work.

Research interest in student engagement has continued to grow, particularly in the last decade. Irrespective of the specificity of its definition, this research has generally associated engagement positively with desired academic, social, and emotional learning outcomes (Klem & Connell, 2004; Reschley & Christenson 2012) and a desirable trait in students (Fletcher, 2001). However, most interest has been directed at older learners, from secondary school pupils to University students. Although some aspects of this research will be relevant to primary school, specific research conducted in primary schools in needed to fully understand engagement in this phase of education. In addition, teachers' notions and self-professed strategies of engagement have been widely ignored in the engagement literature. Although the term, 'pedagogies of engagement' appeared in the 1987 publication, *The Seven Principles for Good Practice in Undergraduate Education* it has not been subsequently explored.

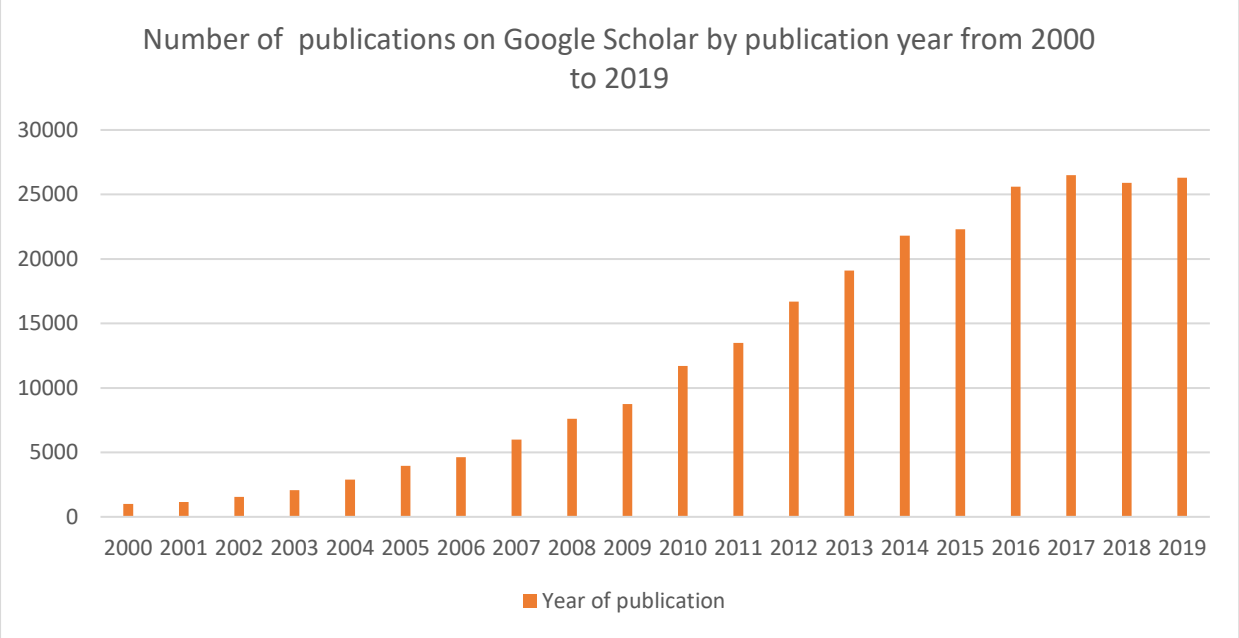
The purpose of this study is to explore primary school teachers' engagement practices, specifically those teaching children in Key Stage Two. The thesis begins with a review of the literature on engagement in an attempt to discover existing definitions and notions of engagement (Chapters One and Two). A two-stage empirical study, followed by a further exploratory study, are then described (Chapters Three to Five). Finally, there is an overall Discussion of findings (Chapter Six) before Conclusions and Recommendations are stated (Chapter Seven).

Chapter One:
Engagement and what it means across phases of education.

1.1 Introduction

Engagement in learning has attracted a lot of attention, particularly in recent times. Figure 1.1 shows how this has burgeoned in recent years. Using the academic search engine Google Scholar it was found that publications including the phrase 'student engagement' has risen from 998 in 2000 to 26,300 in 2019.

Figure 1.1 Number of publications on Google Scholar by publication year from 2000 to 2019



While research has proliferated, some areas of interest have attracted particular attention. In this chapter, I will describe some of the main themes which are evident in the literature.

1.2 Aspects of Engagement

1.2.1 Time on Task (TOT)

The beginning of the literature on student engagement dates back to Dewey's 1916 publication. However, it was Carroll's 1963 book, "*A Model of School Learning*", which gave rise to the first 'Model' to be used in the field of engagement. Carroll's Model sparked the notion that time on task (TOT) was of paramount importance in measuring student engagement, with the relatively simple equation: Degree of Learning = *f* (time spent/time needed). In practice, however, this overlooks the quality and nature of learning that proves more complex to measure.

An advantage of viewing engagement predominantly as the amount of time spent on a task is that TOT is easy to measure. Across the literature there is a 'fairly consistent pattern' (Gettinger & Walker, 2012 p. 66) showing that increased time spent on studies improves a student's academic achievement. However, there has been some debate about how Carroll's Model should be interpreted (Anderson, 1984; Karweit, 1983; Strother, 1984) and specifically on how time indices which have been used inconsistently by different researchers (Gettinger & Walker, 2012). Indeed, Carroll himself recognised this problem in a retrospect written twenty-five after his seminal work stating, 'We need better measures of time-on-task' (Carroll, 1988, p.28). Regardless of Carroll's own awareness of the limitations of measuring engagement as time-on-task, it remains influential in student engagement literature as well as educational legislature as it measurable.

However, research has shown that, 'During sustained periods of a taxing cognitive workload, humans typically display time-on-task (TOT) effects, in which performance becomes steadily worse over the period of task engagement (Lim, Wu, Wang, Detre, Dingers & Rao, 2010). Such findings result in obvious problems when measuring engagement for positive academic outcomes through time-on-task, as well as what is meant by performance and quality. Meanwhile, research within education literature has found that increasing time on

task is an inefficient way to increase engagement and that teachers should use other pedagogical approaches to maximise students' academic success (Karweit & Slovin, 1981). More recently, papers with titles such, *Beyond Doing Time: investigating the concept of student engagement with feedback* (Price, Handley, Millar 2011) and *(Re)conceptualising student engagement: Doing education not doing time* (Zyngier 2008) reflect not only the notion time in classrooms should not be seen like a prison sentence but also that maximising student engagement is more complex than simply 'time on task' and needs to define what constitutes efficient, effective ToT. After all, some studies suggest that students are engaged in learning for less than 50% of lesson time (Black, 2002), so it is not surprising that other trends have emerged.

1.2.2 Student Voice & Involvement

The impact of giving learners a 'Student Voice' on their level of engagement has been a much-researched topic for several decades. In 1991 Kozel claimed, "We have not been listening much to the children in these recent years…The voices of children, frankly, have been missing from the whole discussion" (Kozel, 1991 in Sound Out, 2015). One can understand Kozel's viewpoint: at the time, when previous research had very much focused on extending the period of time students interacted with their studies, measured by 'time on task', one can see why a more progressive outlook began to be sought as the 21st century approached. As is often the case with student engagement, the growth of increasing 'student voice' as a pointer to engaging students was a reactive step, aimed at addressing an educational problem area; student retention. The term often used in the literature is 'drop-out', a colloquially used phrase, particularly in the USA, to describe students withdrawing from their course before completing their studies and is associated with failure, both on the part of the individual and the institution. Such is the stigma surrounding 'dropping-out,' that it is unsurprising that the need to combat the retention issue initiated such studies, and the continuing problem of retention rates means researchers are seeking to engage students at risk (Wang, Willet & Eccles, 2011; Reschley & Christenson, 2012).

The protest movements of the 1960s, in the USA and Europe, showed students' appetite for their opinions to be heard. Channeling this energy for the benefit of institutions' retention figures and students' own academic success was what 'student voice' initially attempted to

achieve for the benefit of both parties. Yet, student voice has become more than simply a way to prevent students from dropping out. It is also a means of encouraging students to shape how their institutions are run in a range of areas, including academic and social domains by encouraging them to take ownership of the learning process. Such is the development of the student voice that Fielding refers to it as 'new wave student voice' (Fielding, 2004). One successful example of how this 'developed' definition of student voice can lead to engagement was Jean Rudduck's Economic and Social Research Council's *'Teaching and Learning Research Programme*' (TLRP) Phase 1 Network Project '*Consulting pupils about teaching and learning'*. As the title suggests, the emphasis was on understanding how consulting young people in a range of ways, often though not solely within the routines of ordinary curriculum engagement, can help students, teachers and schools become more vibrantly engaged with a richer understanding and practice of teaching and learning (Fielding 2004). The development in the definition of the concept perhaps explains how the trend has continued to be examined. Throughout the 2000s and into this decade, research is still being conducted on student voice and engagement and is not limited to US research (Fletcher, 2001; Tinto, 2004; Zyngier, 2008; Handley, Price &Millar, 2011, Archambault, Pagani, Fitzpatrick, 2013; King & Gaerlan, 2014).

Unlike some trends in engagement, research into the link between student voice and engagement has tended to be focused on university settings. This is partly because a university has a greater number of learners than, for instance, a primary school, and also because measuring can be done through low-cost and easily administered surveys. However, it is not without its problems, as a recent UK study of higher education institutes found;

> *"The perceptions of institutions and students' unions of the effectiveness of student engagement within institutions differed. Institutions perceived feedback questionnaires and other committee membership (excluding SSLCs) as highly effective forms of student engagement in bringing about change at any level in their institutions, followed by other committee membership and SSLCs. Whilst students' unions perceived other committee membership (excluding SSLCs) and SSLCs as highly effective forms of student engagement in bringing about change at any level in their institutions, followed by feedback questionnaires. The difference between the perceptions of institutions and students' unions may be directly related to the question of whose interests were being served by these three forms of student feedback and engagement in institutions in the UK."*
>
> (van der Velden, Naidoo, Lowe, Pimentel Bótas, Pool, 2013, p. 6-7)

As this study indicates, institutions and students differ in their perceptions of how best student voice is delivered.

Closely linked to student voice is the idea of engaging students through greater involvement. If student voice enables participation through opinions and feedback, then involvement provides more physical participation. In the 1980's Astin advocated that student involvement should be encouraged to promote engagement (Astin, 1985). Furthering this idea, Finn proposed an engagement model based on participation-identification (Finn, 1989) and be understood as a student's involvement in their education. Some researchers, predominantly in the USA, have examined participation-identification by using samples of student athletes. Studies have sought to examine whether students who participate in sports perform better academically, with the assumption that engagement in one area of education, even non-academic pursuits, can increase academic performance (Gayles & Hu, 2009). However, results have been mixed and the relationship between athletics and academic achievement is generally non-significant compared to involvement in academic extracurricular activities that have proved to be more beneficial to academic success (Finn & Zimmer, 2012.p.108). Involvement can also be viewed as students' sense of being invested in their own learning and school community, which does not limit participants by their participation or non-participation in certain activities. Voelkl refers to this type of involvement as 'identification' and claims it has two dimensions; identification and belongingness (Voelkl, 2012).

The impact of research findings into student voice and student involvement can be seen presently not simply in further and higher education institutes with initiatives such as the NSS, but in English primary schools, which increasingly have 'school councils' made up of class representatives. The widespread application of student voice can best be explained by the fact that it is relatively easy and cheap to implement, costing establishments very little money.

Furthermore, Australian academic, John Smyth, has argued that involvement can also be an anecdote for the 'hardening of educational policy regimes that have made schools less hospitable places for students and teachers' (Smyth, 2006, p.285). His view of the educational landscape is one that has been echoed more recently in the UK, particularly with the

introduction of the new National Curriculum in 2015 and, perhaps, explains the growth of 'student voice' programs very early in children's education.

1.2.3 Environment & Teaching Approaches

The early 1990s saw a considerable amount of literature examining the impact of environment on student learning and engagement at undergraduate level (Pascarella & Terenzini, 1991). This interest continued into the early 2000s (Astin, 2001; Kuh, Kinzie, Schuh, Whitt, 2005) to such an extent that it is legitimate to denote *environment* as a trend in the area of student engagement. As discussed previously, institutes that promote student voice and involvement are attempting to create a school environment that is conducive to engagement. However, environment encompasses aspects of institutions broader than these two factors and if engagement with learning arises from the reciprocal interaction between learners and a learning environment as suggested by contemporary educational psychology, then teachers' potency to engage students may lie in their ability to create, shape, and influence the whole learning environment (Shernoff, Tonks & Anderson, 2014). On perhaps the most literal level, environment can be seen as the simple bricks and mortar of an educational building. Initially one might question the extent to which this can influence a student's engagement level. However, one also assumes that learning in engagement promoting surroundings would produce beneficial effects on students' wellbeing that are conducive to engagement. One area of school environment which has been examined has been class size, with the assumption that off –task behaviour would result more in large classes, particularly in primary schools (Blatchford, Bassett, Brown, 2011, p.717). In the USA, the effects of class size on learning have been studied for around a century- before engagement was being discussed (Finn, Pannozzo & Achilles, 2003), yet results have varied (Akerheilm, 1995). In a reanalysis of the Student-Teacher Achievement Ratio (STAR) data, Konstantopoulos (2008) found that smaller classes did not reduce the attainment gap, largely because it was the higher ability children who benefited the most. However, a study in the UK found that children in large primary classes were more likely to engage in passive behaviour, listening to the teacher, while in smaller classes pupils were more likely to interact in an active, sustained way with teachers (Blatchford *et al*. 2005). In fact, what Blatchford's studies indicate (Blatchford, 2003;

Blatchford *et. al* 2005; Blatchford, Bassett, Brown, 2011) is that classroom environment, in this case class size, is influential in teaching approaches due to the finding that, 'pupils in small classes were more likely to experience one-to-one teaching and were more often the focus of a teacher's attention' (Blatchford *et al.*, 2011, p. 718). This reiterates Anderson's findings that small classes encourage a more personalised curriculum (Anderson, 2000) - again, environment and teaching approaches are intertwined. Beyond class size, studies have also examined factors as classroom layout and seating plans (Rosenfeld, Lambert & Black 1985; Burgess & Kaya, 2007).

In a more abstract sense, school environment moves beyond the physical confines of the building, such as in-class seating plans, and can be interpreted as a 'learning community'. Indeed, this is the term used in Zhao & Kuh's *Adding Value: Learning Communities and Student Engagement* (Zhao & Kuh, 2004) and in many other studies. 'Learning Community' has broader connotations than 'Learning Environment', hinting at the building, participants, goals and collective school ethos, reflecting the growing understanding that a more holistic approach is needed when examining engagement (Kahu, 2013). Although the potential benefits of learning communities were advocated a century ago by Alexander Meiklejohn, their effectiveness in acting as a 'precursor to high levels of student learning and personal development as well as an indicator of educational effectiveness has developed in since the 1990s (American College Personnel Association [ACPA], 1994; Kuh, 1996, 2003; MacGregor, 1991; Study Group on the Conditions of Excellence in American Higher Education [Study Group], 1984)'(Zhao & Kun, 2004, p.115).

With school environment influenced considerably by approaches to teaching and learning and vice versa, it is logical to consider them as two dimensions of the same trend, 'learning environment'. This is particularly the case if interpreting environment as a 'learning community' where teacher and pupils are seen as belonging to a collective. A considerable amount of the literature on teaching approaches focuses on teacher/student relations, and again we see how different trends are interwoven; the link between student voice and belonging is heavily related to how well students and faculty interact. Relations between pupils and teachers certainly seem influential in student engagement and have been discussed at length since the publication of Oakeshott's 1971 work, *Education: The engagement and its frustration*. A great deal of research has examined the relationship between individual teachers and their particular

class (Fredricks, 2004; Klem & Connell, 2004; Roorda, Kooman & Split, 2011; Venturini & Amande-Escott, 2013) with positive relations almost universally improving student engagement (Trawler, 2010) characterised by emotional accessibility and involvement fulfill a basic psychological need and promote self-determination (Murray & Murray, 2004, p.751). In a more abstract sense, the relationship students have with school must also be examined. The feeling that, 'school is for me' has been deemed vital in securing students' engagement (Haesler, 2006) (discussed under *Disaffection & Alienation*). Another approach has been to consider whether some approaches to teaching and learning have an impact on student engagement by measuring the effect of particular interventions (Ota & DuPaul, 2002, O'Brien, Beach, Scharber, 2007). These interventions are often delivered with the hope of increasing engagement in an area of the curriculum where particular students are underachieving, something to be discussed further in Chapter Three. Of course, key to many of the studies on relations has been the measure of responses of both student and teacher, which can be somewhat subjective as they often use self-report measures. It is often the case that collecting data in this way also excludes very young students because they are unable to appropriately answer self-report questionnaires. A way to combat this has been to use researcher observations, but this has meant studies which attempt to triangulate results have been very small-scale as such methods are more time-consuming and often more expensive than, for instance, simply administering large-scale questionnaires.

1.2.4 Difference

A trend that has emerged relatively recently is that of researching student engagement based on difference. Research has tended to focus on ways to promote engagement among historically underrepresented groups (Kuh, 2001; Harper, 2009). One of the most prolific researchers on student engagement, Kuh, goes so far as to claim that, 'finding ways to engage students from historically underrepresented groups must be one of the…highest priorities going forward (Kuh in Quaye & Harper, ed., 2015 p.xii). A recent, large-scale survey carried out in the UK; *The UK Engagement Survey* described 'The key demographic differences' as being, 'by domicile, mode of learning, and ethnicity' (Neves, 2016). Not only are certain learners underrepresented in learning institutions they can also be more at risk of failing at school (Finn & Rock, 1997). Some studies have chosen to examine a specific group's

engagement, for instance, looking at race/ethnicity, or at gender, or sexuality or students with a particular disability (Kirkpatrick Johnson, Crosnoe & Elder, Jr., 2001; Chase, Catalano, Nicolazzo & Jourian, 2019), whereas other studies have examined several groups (Davidson, 1996; Verkuytan & Thijs, 2002; Nagda, Gurin, Sorensen, 2009; Wang, Willett, Eccles, 2011) in an attempt to' Test the Linkages' (Carini, Kuh, Klein, 2006). Analysing why particular groups are disengaged has exposed differences between these groups. Ogbu and Fordham argued that in the USA certain minority groups who became part of the country through conquest or slavery made the conscious decision not to fully engage at school, due to it being associated with mainstream culture (Fordham & Ogbu, 1986 in Bingham & Okagaki, 2012). Whereas other research has found that hostile school environments, rather than wilful choice, leads those underrepresented to disengage (Ripski & Gregory, 2009; Kosciw, Greytak & Diaz, 2009, Lynch, Lerner Leventhal, 2013).

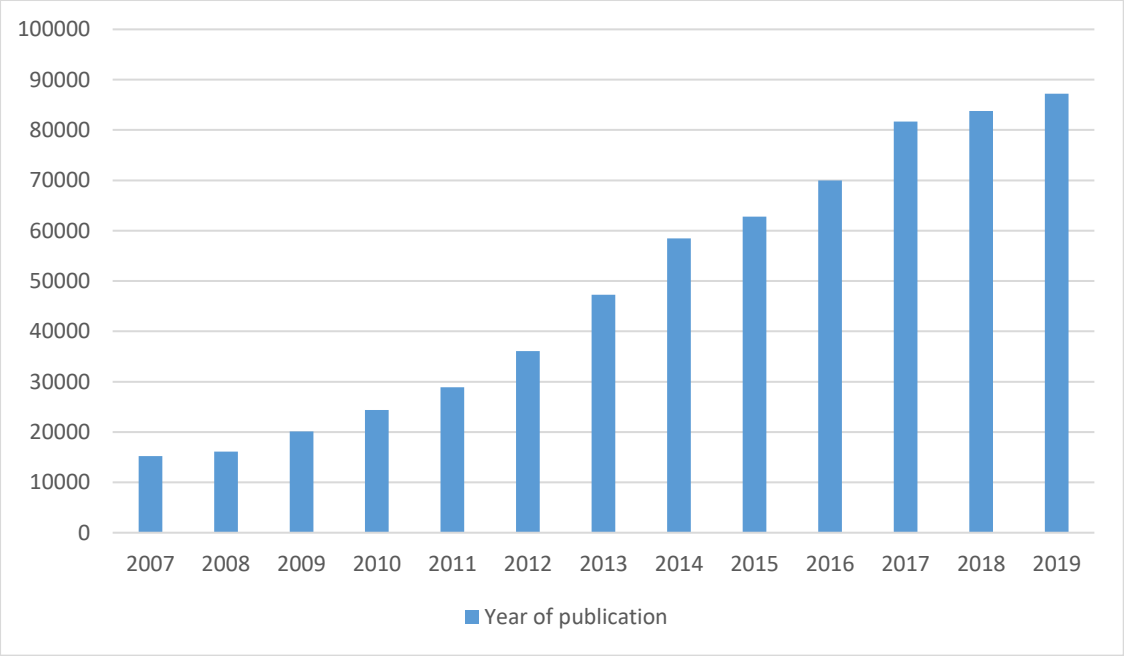
Once again, the study of 'difference' in learning engagement is a trend that has echoes of previously discussed trends: 'student voice' and 'student involvement'. Like other trends, it also is not without its problems. For whilst there is little doubt that engaging historically disengaged groups is vital, both ethically and practically, with a view to enhancing the future workforce, the drawback to such an approach is that it limits solutions to particular groups of students. The current drive towards differentiation of teaching approaches in the UK, to meet the needs of all students, means improving engagement for learners has to be achieved in a way that cannot be done by only treating certain groups. No student regardless of gender, ethnicity, socio-economic background and so on is immune from becoming disengaged.

1.2.5 Information Computer Technology (ICT)

An emerging trend over the past decade has been the relationship between ICT and engagement. The graph below (see *Figure 1.2: Papers on Google Scholar focusing on student engagement in relation to approaches using ICT*) illustrates the rapid growth in recent research in this area, by documenting the number of research papers with the phrase 'ICT student engagement' from the year 2007 and then each year until 2019 (as 2020 has not yet concluded). Only 15,400 articles or books were available on Google Scholar published between 1950 and 2007, but, of course, early papers may not have been listed. However, by 2019 this number

had increased to 87,200, meaning approximately 71,800 articles have been published in the last twelve years, as the graph shows in *Figure 1.2*. The rise in research in this area coincides with the availability and use of ICT resources, in particular online resources, in education, and more broadly in Western society. The graph also shows that research in the area appears to have plateaued, which again, coincides with figures documenting ICT use in general.

Figure 1.2: Papers on Google Scholar focusing on student engagement in relation to approaches using ICT



Some studies have focused quite simply on engagement in ICT lessons, but as technology and internet use has become more integrated with our daily lives research has moved beyond this. The majority of studies has been on how the use of ICT can enhance student engagement, and can be divided into two categories; students' engagement through their own use of ICT in learning and teachers' use of ICT when delivering lessons.

Many of these studies have been relatively small scale and focused on one particular app or computer programme, such as an iTextbook (Blake 2016), game or e-learning course (Rodgers, 2008, Muntean, 2011). Other studies have examined how teachers can use ICT to make particular subjects more engaging, such as ICT and Primary Science (Fuller & Marc,

2009). A smaller number of studies has looked at the effectiveness of game immersion and computerised behaviour strategies (Brown & Cairns, 2004). With the growth in the use of classroom management apps in educational settings, in particular Class Dojo, which claims to be used in 90% of K8 classrooms in the USA (www.classdojo.com), we might expect further research on their usefulness in engaging students in the coming decade.

The worldwide growth in online tutorials and blogs has opened a new area of research within the ICT and student engagement area. The global nature of this development is reflected in the geographical breadth of research; from Cakir's investigation of how student teachers' blogs can improve student engagement in Turkey (Cakir, 2013) to children's engagement with educational iPad apps in Spain (Kurcikova, Messer, Sheehy & Panadero, 2014), to measuring how engaged Chinese students are when learning English through an app (Liu &Hi, 2015). A smaller number of papers have focused on how students' use of ICT outside the classroom environment can affect their engagement whilst in the classroom, such as social media use (Junco, 2012). The relevance of research in this area is obvious; e-learning has the potential to vastly improve the availability of education and ICT has become embedded in contemporary life.

Surprisingly there is very little existing literature on how ICT can be used to measure engagement. Indeed it is probably that ICT resources are available that could be used for this means, but their use in this way has not been recognised (this will be discussed further in Chapter Nine: Stage Three Lesson Observations).

1.2.6 Disengagement

Adding to the complexity of the literature on student engagement is the debate surrounding what constitutes 'not being engaged' furthered still by defining and measuring engagement by looking for its absence as 'not being engaged'. Such is the extent of the discourse on a lack of engagement as a means of deepening our understanding of engagement that some papers have even combined the two in their title, such as *Being (dis) engaged in educationally purposeful activities: The influences of student and institutional characteristics* (Hu & Kuh, 2002).

Of course, when engagement was simply measured by 'time on task' a lack of engagement could be measured by limited 'time on task' but now that a more complex view of student engagement has emerged so has its opposite. Initially, 'school engagement is seen as an antidote to signs of student alienation' (Fredricks, Blumenfeld, & Paris, 2004). However the term, 'alienation' has connotations of feeling excluded from the school community, which is not necessarily the case for all pupils who are not engaged. Case attempted to develop a new theoretical framework for student learning by examining engagement and alienation together (Case, 2008), stating that alienation can occur from:

> *"1. entering the higher education community*
> *2. fitting into the higher education community, and*
> *3. staying in the higher education community."*
>
> (Case, 2008, p. 2)

He concluded that the opposite of engagement is disaffection (Case 2008) as opposed to 'alienation'. Trawler (2010) discusses two differing examples of a lack of engagement; those by Mann (2001) and Krause (2005). Mann describes 'alienation' as being the antithesis to engagement. Alternatively, Krause describes a lack of engagement as, 'inertia, apathy, disillusionment or engagement in other pursuits' (Krause, 2001 in Trawler, 2010 p.4).

Trawler has synthesised these two views in order to create what she calls 'negative' and 'positive' poles of engagement by dividing engagement in to what she terms 'dimensions', behavioural, emotional and cognitive. Such an approach provides a useful measure which acknowledges the multi-faceted nature of engagement (discussed in Chapter Two). Implicit in her synthesis is also the acknowledgement that, just because a student is not disaffected, or alienated, does not mean they are necessarily engaged as much as they could be.

Regardless of the terminology, lack of engagement has often been linked to social and cultural engagement, particularly in US research with samples of high school and university students. Papers searching for an antidote to the problem often focus on Student Voice (Fletcher 2003; Zyngier 2008). However, more pertinent to this study is that alienation can also come from assessment (Case, 2008). The National Curriculum, which determines the programme of study for state maintained schools in England, has been critcisied for encouraging an

atmosphere of performativity (Jeffrey *et al*., 2008). Yet, despite children being formally assessed in Year 2 and Year 6, much of the literature on the effect of assessment on engagement is based on samples taken from higher education settings with children.

What *is* clear that a lack of student engagement can result in poor attendance, academic underachievement and non-attendance (Appleton *et al*. 2006), and this has driven much research to look for solutions.

1.3 A tangled web

Overall, trends in student engagement research have focused on providing insight into, and sometimes answers to, some of education's biggest problems; attendance rates, academic underachievement and student disillusionment. Solutions fall into two main groups: improving engagement levels inside the classroom and ameliorating problems outside the classroom to limit their impact on classroom performance. Ironically, whilst the literature on student engagement attempts to tackle one of the largest hurdles in education, lack of student engagement, it is beset with problems of its own. The research does not fall into distinct trends that follow a largely linear and separate path. Certainly there is a certain sense of chronology, for instance literature concerning 'time on task' began before the linkage of ICT and engagement. We see a research landscape with interwoven strands, such as, student voice and alienation, alienation and difference, difference and school environment. There have been differences in defining particular issues, such as how to define lack of engagement, but there has not been a debate between conflicting 'schools of thought' as is often the case in education research. Nor has there been a widespread acknowledgement that a particular trend is now defunct, like there has been in the case of learning styles for instance. Time on task, has been proven to have its limitations, but it is still used by practitioners to try to judge their students' engagements, as well as by researchers to measure engagement. In many ways, this is understandable for the amount of time a student spends on a task is objective and quantifiable, whereas other trends have been far less so. Student Voice for instance, although widely acknowledged as beneficial as different institutions interpret promoting engagement differently. So, whilst at Coventry University, students administer and interpret student

feedback questionnaires themselves, at the University of Winchester, one student per degree programme per year is given a bursary to undertake an educational evaluation that feeds in to the annual course review (*The Times*, 14.3.14). Comparing how the two universities collect responses shows their differing interpretations of student voice. Given that Student Voice is increasingly becoming viewed as essential in Higher Education for maximising student engagement, to the extent it has been deemed a 'marketing tool' (Trawler, 2010), the inconsistency in universities' interpretation is a concern. For, if student engagement becomes only a buzzword, it undermines its importance.

Meanwhile, this chapter reveals the further complication that although there are certain trends or themes, the overall picture of student engagement is rather imbalanced, with large-scale, often empirically based student surveys in the USA and Australia, and small-scale, case studies or action research projects in the UK and Europe. Further complexity is added by the fact that trends are not linear, with educators returning to previously visited territory. A trends analysis provides an overview of where much of the existing literature is focused, but it does not adequately address the problems about how we define student engagement and therefore how it can be measured. If there is a consensus, it is that engagement is increasingly viewed as multidimensional (Reshley & Christenson, 2012) and for that reason, the different dimensions should be examined in order to understand the type of engagement this study seeks to promote.

Chapter Two: Literature Review

In this Chapter, I provide an overview of the literature on engagement. The literature search generated some 800 papers from the last 25 years relating to engagement in education which were collected from Google Scholar. The term 'engagement' is, of course, used more widely than in the context of education, so the search used as key words: Engagement AND Education OR School OR Student OR Pupil OR Teach. All abstracts were read to ensure that the reference to engagement related in some way to education, and the articles were sorted into groups to enable a structured synthesis of content informing a convergent presentation of the relevant literature. As will be seen, this presentation begins with the diverse nature of engagement in education, and moves progressively to its specific role in the primary/elementary school, and in the core learning areas of mathematics and English. Some articles appear in more than one group. Pertinent issues which bear upon the nature and design of this study are then drawn out, and those papers with a particular relevance are listed for quick reference in Appendix Two, and also, of course, appear in the reference list.

I begin by exploring the broad range of literature that shows engagement to be a multidimensional construct, teasing out the different components. I then home in on intellectual engagement in education contexts. Finally, I look at the literature relevant to engagement in primary school mathematics and English, the focus of my study, linking this to my research aims.

The structure of the chapter comprises:

- 2.1. Engagement as a multidimensional construct
- 2.2 Intellectual (or cognitive) engagement
- 2.3 Engagement and motivation
- 2.4 Engagement in school curriculum disciplines
- 2.5 Engagement and attainment

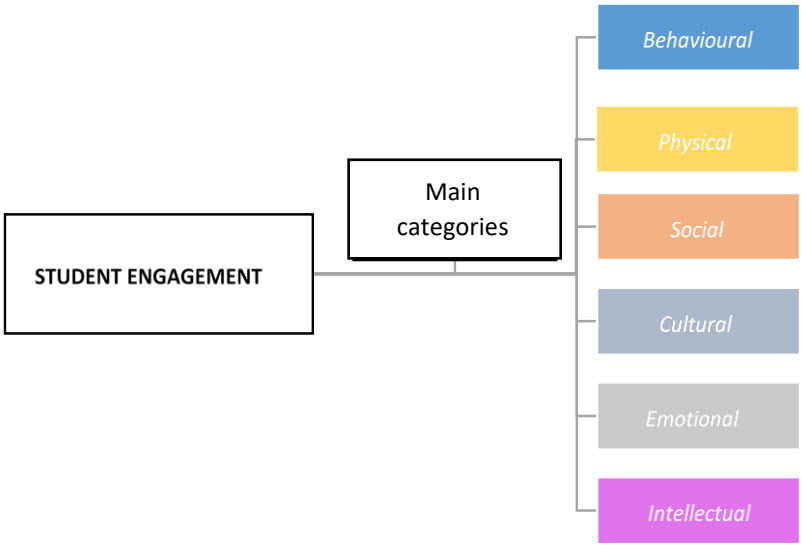
I conclude this chapter by summarising the key messages from the literature and how they relate to my three research objectives for this study.

2.1 Engagement as a multidimensional construct

As the literature on engagement has grown, so has its descriptions. There is a consensus that engagement must now be viewed as 'a multi-dimensional construct' (Cirica & Jovanovich, 2016). In this way, viewing engagement in different categories/components can give us a deeper and clearer understanding of student engagement as a whole. As discussed in Chapter One, engagement is problematic for several reasons, a major problem being that academics disagree on how many categories there are, and even what some categories should be called. Appleton *et al.*, (2006) attempted to devise a student engagement measurement tool focusing on two forms of engagement: affective and cognitive. Fredricks, Blumenfeld and Paris (2004) attempted to measure three types of engagement in their study: behavioural engagement, emotional engagement and cognitive engagement. However, Maguire *et al.* (2017) state that researchers have found 'four distinct, yet interrelated, aspects: academic, behavioural, cognitive and affective. Meanwhile Reeve and Tseng (2011), coined the term, 'agentic engagement', which they claim emphasises the role of the learner in contributing to classroom instruction by offering an input, making a suggestion or expressing a preference (Reeve, 2012). However, descriptions of an agentically engaged learner heavily overlap with indicators of a cognitively engaged learner and presently have failed to make an impact on the engagement literature. Categories of engagement do extend beyond Fredricks, Blumenfeld and Paris's three category model, with six types of engagement consistently appearing in the

literature: behavioural, physical, social, cultural, emotional and intellectual as represented in Figure 2.1.

Figure 2.1: Main categories of engagement to be explored in this chapter



It is recognised that recent research on engagement has expanded beyond examining the effort that students deploy in their learning activities, to how the institution adapts its resources and teaching strategies to encourage participation. The effort of the student is important, but, so is the institution's approach and therefore both dimensions, student and institution, are taken into account where appropriate.

By examining each of the categories in Figure 2.1 we can clarify the type of engagement we seek to measure and promote. The first five will be discussed briefly but the sixth, which is directly relevant for this thesis, will be discussed in more detail.

2.1.1 Behavioural Engagement

Behavioural engagement can be seen as a student's willingness to participate in school; both in academic and non-academic activities. Much of the older literature on student

engagement can know be seen as exploring this kind of behavioural engagement (Trowler, 2010). In some ways, the outward indicators of behavioural engagement make it relatively easy to define although its exact definition has varied. Some of the ways it has been defined include:

(a) participation in school-based extracurricular activities (Fullarton, 2002)
(b) attendance at or absenteeism from school (Willms, 2003)
(c) involvement in learning and academic tasks (Fredricks *et al.,* 2004)

Definitions (a) and (c) share similar features, defining behavioural engagement as an act requiring 'involvement'. Fullarton's view includes both academic and extra-curricular activities whereas Fredricks *et al.* see this involvement as being in 'learning and academic tasks' implying that behavioural engagement should be defined less through non-academic extracurricular activities. Willms' view is perhaps the starkest definition and reminds us that student engagement is often discussed in tandem with its antithesis, disengagement (see Chapter One). Of course, as many researchers and educational practitioners recognise, simply attending school does not equate to being 'behaviourally engaged'. In the UK the term, 'behaviour' is often used as a euphemism for 'bad behaviour', or, at least, non-compliant behaviour, so inevitably when discussing behavioural engagement, we tend to think of whether or not a child is misbehaving. When a student attends class but is not complying with classroom routines and an expected standard of behaviour, it is arguable that they are not behaviourally engaged. It must be recognised that teachers' opinions of what equates to complying to classroom routines differs, particularly between countries. So whereas a British teacher might define conforming to classroom norms as including 'banter' with the children, or between the children, a Russian teacher would not (Elliot *et al.*, 2005). Similarly, teachers within the same school may define complying to classroom routines differently, therefore their definition of behavioural engagement may differ. However, children can be behaving in the compliant sense but a closer observation of their behaviour may indicate they are not engaged in a meaningful way. A recent study by Fredricks *et al.* (2019) concludes that some children are behaviourally engaged, but not emotionally and/or cognitively engaged. Their findings demonstrate the limitations of focusing on behavioural engagement as an indicator for engagement that leads to positive learners outcomes, both academically and holistically.

Skinner and Kinderman (2009) found that he traditionally favoured 'Time on task' approach to measuring student engagement was, in reality, mainly measuring behavioural engagement and is still widely used. However, other measures now also being used. Indeed, behavioural indicators may be readily measured by teacher/researcher observation and to some degree by self-report (at least with older learners), yet it should be remembered that such measurements may be subject to cultural bias (Goldspink 2008, Elliot *et al*., 2005). Peer play, which has been described as providing a context for children to learn academic skills from their more advanced play mates (Wentzel, 2009), is often used as a measure to predict future school success (Coolahan *et al.*, 2000; Fantuzzo & McWayne, 2002) and self-regulation (Bierman *et al.*, 2008). In all phases of education, classroom behaviour has been linked to peer influences with some studies measuring whether or not factors such as class groupings (Sage & Kindermann, 1999), peer pressure culture in the USA (Bishop, 1989) and cultural inclination of teachers to allow social relationships in the classroom (OECD, 2002). However, studying peer influence is methodologically complex and its effect on behavioural engagement is hard to measure without taking into account numerous other influential factors (Ryan, 2000).

Research on behavioural engagement spans all phases of education, unlike some types of engagement including primary-school aged children are underrepresented. Many studies have placed an emphasis on the early years of education (pre-school), perhaps because identifying behavioural problems at a very young age can indicate a lack of school readiness and predict longer term academic performance (Collahan *et al*., 2000; Fantuzzo & McWayne, 2002; Kuperschmidt, Bryant &Willoughby, 2000; Raver, 2003; Duncan, Dowsett & Claessens, 2007). Other studies have taken samples from younger teenagers, when peer pressure and puberty can create barriers to behavioural engagement (Elliot et al. 2005).

It is apparent behavioural engagement does not necessarily indicate engagement in other ways, such as intellectual engagement. Numerous studies have taken samples of university students (e.g. Lane & Harris, 2015) which in some ways is surprising, as most Higher Education students chose the subject they wish to study, so one would assume they are likely to be behaviourally engaged. However, in these studies we see that motivation does not necessarily translate to engagement.

In Chapter One, we saw how certain trends focused on or promoted certain 'types' of engagement. One such trend, particularly aimed at promoting behavioural engagement, is the development of teacher-student relations (Furrer & Skinner, 2003; Hallinan, 2005; Wentzel, 1997, 2009). Further to encouraging positive student-teacher relations, promoting positive peer relationships has also been seen as having positive behavioural and academic outcomes (Birch & Ladd, 1997). Evident in thousands of schools are 'reward systems' to encourage behavioural engagement and influence classroom environments. These systems can address the various definitions of behavioural engagement; rewarding good attendance with incentives, such as, certificates in primary schools to school trips at secondary schools to 'star charts' or reward trips for conforming to classroom routines. A recent study designed 'The Behavioural Engagement Related to Instruction (BERI) protocol' (Lane & Harris, 2015). This paper claims it can be used to provide timely feedback to instructors as to how they can improve student engagement in their classrooms. Although the sample was university students, the study found that the more interactive and less passive students were the more behaviourally engaged they were, echoing findings from previous studies with younger students. Indeed a wealth of evidence suggests that a move away from passive learning encourages self-regulation and motivation, which results in more positive behaviour but also academic success.

2.1.2. Physical Engagement

Physical engagement is a category of engagement not often included when trying to discuss components of student engagement (Appleton *et al.*, 2006). However, there is growing body of research in this area. One of the problems with defining physical engagement is the ease in which it can be confused with behavioural engagement, and possibly explains why it is not seen as an engagement category in its own right. However, a student may be behaviourally engaged but unwilling or unable to participate physically in a task, conversely, a child may be participating in a task and not fully behaviourally engaged, for instance colouring in a picture but talking loudly and disrupting other pupils. Physical engagement is also now being explored in the context of a student's physical well-being, with practitioners being more aware of factors outside the classroom that can inhibit learning, such as a child not having had breakfast, a student's lack of sleep or living in damp conditions. In the UK, this awareness has been accelerated by high-profile cases of child neglect, resulting in the Every Child Matters initiative and subsequent in-school initiatives such as breakfast clubs and after-

school activities. Physical engagement can therefore be defined as participation in active tasks during academic lessons and extra-curricular pursuits, yet is also becoming to be viewed as learners having a high enough level of physical well-being (e.g. nourishment, hygiene and rest) to engage more generally in education.

Physical engagement as defined by a student's active participation is relatively easy to measure. Researchers have used observation techniques to measure participation in 'hands on' tasks within the classroom. As with behavioural engagement, 'time on task' has also been used to measure physical engagement (Reschley, 2012). Quantitative data, such as the number of students enrolled on a 'physical' course/ after-school/ extracurricular course have also been gathered, particularly in studies examining engagement levels in student athletes (Gayles & Hu, 2009; Comeaux et al, 2011). As older students, those at high-school and university, tend to be the sample groups in such studies, self-report questionnaires have also been used extensively (Umbach, Plamer & Kuh, 2006). With many studies comparing the academic success of student athletes with non-athletes, measurements of physical engagement have then been analysed alongside academic outcomes, such as exam results and end of year grades (Miller & Kerr, 2002; Gaston-Gayles, 2004; Horton, 2009).

Practitioners have attempted to include more 'hands-on activities' during lessons in order to promote physical engagement in more academic lessons. In the 1990s there was a rise in studies exploring and promoting kinesthetic learning (Kirshener, 2017). Although the notion that students have a natural learning style has been widely abandoned by academics, the idea that lessons should be catered to meet various learning styles, including kinesthetic learning is still popular in UK schools, with schemes such as Kung-Fu Punctuation being popular in many primary schools. Studies measuring the effectiveness of interactive lectures have sought to promote greater knowledge retention and therefore academic success through physical engagement. In all phases of education, collaborative learning has also sought to promote physical engagement; in the most basic sense just the act of having to collaborate with peers involves physical engagement. Problem solving in particular is seen as providing opportunities to be physically engaged (Marigliano & Russo, 2011).

The intertwining of both physical and behavioral engagement can be seen in initiatives which include periods of 'being active' during lessons to stop fidgety, distracted behaviors. Before school starts, some UK primary schools have introduced movement to music activities, influenced in part by the Japanese workforce who often exercise collectively before starting work. Of course, these initiatives promote not only physically engagement with the hope of it leading to greater intellectual engagement, but also address the well-being issues previously discussed. Breakfast and tea-time clubs provide educators with the opportunity to meet the nutritional needs of students they suspect may be malnourished. Free healthy snacks given to children aged four to six in the UK, under the School Fruit and Vegetable Scheme, may also serve to improve physical engagement in this way**.**

2.1.3 Social Engagement

Social engagement has several different components and is succinctly summarised as:

> *"The extent to which a student follows written and unwritten rules of behaviour, for example, coming to class on time, interacting appropriately with teachers and peers, and not exhibiting anti-social behaviours, such as withdrawing from participation in learning activities or disrupting the work of other students."*
>
> (Finn & Zimmer, 2012, p.98).

Their definition strongly links social engagement to behavioural and physical participation. Yet, social engagement can also be seen as encompassing aspects of cultural and emotional engagement through students' willingness to be part of a learning community (Avison, McLeod & Pescosolido, 2007). This more nuanced definition recognises the growing interest in engaging students on civic and social issues and has been reflected in the National Curriculum for England and Wales with the introduction of British Values in the primary schools (DfE, 2015). The increased interest in promoting this form of social engagement stems largely from widespread political apathy in OECD countries (Campbell, 2003), but has its roots in the 1960s when Converse (1963) linked political engagement with educational attainment. As well as an end in itself, some studies have claimed that those learners that are more socially and civically engaged did better academically by improving their value system and worldview (Mezirow & Taylor, 2009).

Social engagement has been measured in a variety of ways depending on how it has been defined. In the first instance a student must attend their educational institution to even begin to socially engage, therefore some studies link social engagement with the attendance and 'drop-out' rates. A number of studies have used attendance data to measure social engagement (Steward, Steward, Bliar, Hanik & Hil, 2008; Gottfried, 2009). Both studies then used exam result data to determine whether or not academic outcomes were affected by absenteeism and found that to be the case. Other studies have taken the approach that simply attending school or college does not necessarily mean a student is socially engaged. Some such studies have used data including how many students are enrolling on extracurricular courses (Campbell, 2003). Similarly, other studies have observed teachers and students during lessons to see the amount of social interaction between peers and students and their teacher (Kuh, 2009), using observations of interactions to gauge social engagement and combining them with academic performance to measure the effectiveness of this type of social engagement. In terms of measuring the social engagement of the educational institution, researchers have attempted to measure how interactive that institution is through various means which fall into two main categories. The first is how much interaction there is between the institution and its learners, and the second category attempts to measure their interaction with their local or global communities. Measuring social engagement within the classroom has been attempted through observation of subtle behaviours such as facial expression, posture and voice tone. The detail of such studies may provide useful insights, but replication on a large scale would be problematic (Porges, 2003).

Studies exploring social engagement have taken from all phases of phases of education, with Higher Education institutes being particularly well-represented in the literature. Universities often offer a plethora of clubs and societies, meaning researchers have a large pool from which samples can be taken (prospects.ac.uk). Most studies involving Higher Education students explore whether students who participate in extra-curricular activities feel more socially engaged (Greenfield, 2017) or fair better academically (NCES, 1992). Higher Education institutions themselves can also be the sample, providing researchers with the opportunity to measure how socially engaging that University is, often in comparison with others. Studies that look at the civic-engagement dimension of social engagement tend to choose samples from Higher Education institutions (Jacoby, 2009). Universities themselves also seem to promote civic engagement on a wider scale. Many universities in the USA having

programs specifically aimed at increasing this aspect of social engagement, such as the University of Chicago and Chapman University. Engaging students in a way which aims to make them well-rounded and well-informed citizens is becoming increasingly popular and valued. However, there are studies investigating civic engagement that have used younger students. Of particular note, is the large scale IEA Civic Education Study in which 90,000 14 year-olds in 28 countries were tested on knowledge of civic content and skills and were surveyed about concepts of citizenship, attitudes toward governmental and civic institutions, and political actions (Torney-Purta, 2010).

As awareness of Autistic Spectrum Disorders (ASD) has increased, social engagement has also been measured using samples of students with conditions that can increase barriers to social engagement (Rogers, 2000; Dellano & Snell, 2006; Bellini, Aullian & Hopf, 2007). Many samples have come from younger students due to research indicating that early intervention for young children with ASD has demonstrated substantial gains in social, communication, and behavioral functioning (National Research Council, 2001). Interestingly, research aiming to benefit students with ASD adds great value to literature on social engagement as a whole because it provides an insight into the challenges even academically gifted students face when they are not socially engaged.

In terms of widening students' opportunities to participate socially, whilst benefiting academically, many institutions provide learning experiences outside class, such as debate teams and robotics clubs. In the USA, academic competitions, like 'spelling bees' and Science Fairs have been widely used for decades and are increasingly common in the UK. Within the classroom, pedagogical styles, which support strong student-teacher relations, appear to promote social engagement as well as academic outcomes (Ryan & Patrick, 2001). Peer-peer interactions can also influence social engagement and is discussed further below. In terms of promoting social engagement that incorporates civic and political awareness, many UK primary schools have attempted to involve the local community as a first step, supported by the new British Values syllabus. Civic participation, sometimes called service-learning, characterized by activities like volunteering or being a member of a cadet force, has been widely used with older students and even graduate students, particularly in the USA (Boyte,1991; Bringle & Hatcher, 2004).

2.1.4 Cultural Engagement

Cultural engagement is often defined as students of all cultures feeling accepted and welcomed in the learning institute. It can also include the institutions' engagement with different cultures both within the staff-student body and in the local or global community. Hess, Lanig and Vaughan (2007) state that cultural engagement occurs when there are reciprocal relationships between faculty members, community partners, and higher education students. Outside education, cultural engagement has often been linked to one's enjoyment or participation in the Arts. This concept is beginning to be viewed as a component of cultural engagement *within* schools against a backdrop of funding cuts to arts subjects and more widely a lack of public funding for the Arts (Blakey, 2016).

As with other categories of engagement, measurement of cultural engagement is dependent on the definition being used in each study. For instance, an institution's commitment may be measured through their participation in community events, their links with minority groups or local community. The feeling of belonging (or alienation) amongst different ethnic groups with in an institution may be measured through self-report. With younger pupils, self-report methods may be less reliable, so observations can be undertaken to attempt to measure cultural belonging. Some studies have focused on whether students of different cultures within the same learning institution have different levels of.

Many studies of cultural engagement have taken samples from Higher Education and Further Education institutions. The majority of the literature originates in the USA, which historically was more culturally diverse. Increasingly, UK studies have explored this category of engagement (Hollingworth & Archer, 2009). Australian and New Zealand researchers have also explored cultural engagement, particularly in relation to how engaging students from underrepresented cultural backgrounds, mainly Aboriginal students, can improve academic success (Aikenhead & Huntley; 1999; Matthews, Howard, Perry, 2003). However, cultural engagement does not necessary have to involve measuring how engaged different multicultural learning communities' best engage all its students. Several UK studies have touched on cultural engagement between different social classes, a phenomenon traditionally seen as being unique to the British Isles (Ball, 2003; Archer & Francis, 2007; Dorling, Rigby,

Wheeler *et al.*, 2007). However, cultural engagement is not the focus of such studies, and there this area remains rather under-researched.

Active steps may be taken to engage students from diverse cultural backgrounds, particularly recently arrived immigrant or refugee students and their families. These include translation services, and multi-lingual signage (including sign language, Makaton or symbols to help students with autism). In the USA and Australia, the body of literature on cultural engagement is larger than that of the UK's, with a good deal of research focusing on African-American and Hispanic students (USA) and Mauri students (Australia). Regardless of where the research has been based, or which specific group has been studied, research indicates institutions can take steps to promote cultural engagement, including interacting with a variety of religious and ethnic groups in the community, although the effectiveness of actions is not clear. Institutions can also promote understanding and knowledge of their historic and local. The UK History National Curriculum in primary schools promotes cultural engagement in this way by introducing a 'local study' component (DfE, 2015). Meanwhile the Higher Education group REACT (Realising Engagement Through Active Culture Transformation, 2017) is attempting to promote cultural engagement in older students. In an increasingly multi-cultural society, it is likely interest in cultural engagement will continue to increase.

2.1.5 Emotional Engagement

Emotional engagement is a more recent area of research and a growing one. Research indicates that positive emotions at school improve student engagement and vice-versa (Appelton *et al.*, 2008). However, while many studies have identified how aspects of the environment influence engagement, fewer have specifically focused on emotional engagement (Maguire *et al.*, 2017). One of the reasons for this may be that much of the literature points to emotional engagement as being indirectly linked to academic success, but, instead, influence other forms of engagement which *can* directly influence academic achievement (Osterman, 2000 in Finn & Zimmer, 2012). Yet, for over twenty years, emotional engagement has been recognised as playing a vital part in school engagement (Skinner & Belmont, 1993). Some studies have called emotional engagement affective engagement, because 'affect' is the psychological term for emotion. Finn and Zimmer (2012), for instance refer to affective

engagement, defining it as ‘a level of emotional response characterized by feelings of involvement in school as a place and a set of activities worth pursuing’ (p. 103). A variety of components within the classroom, including ‘interest, boredom, happiness, sadness, and anxiety’ have a part to play in these affective reactions (Mahatmya *et al.*, 2012 p.47). Many studies have been influenced by Frederickson’s work which postulates that the experience of frequent positive emotions serves to broaden humans' thoughts and behaviors, resulting in an accrual of resources, including coping resources, which catalyze upward spirals toward future well-being (Frederickson, 2001).

Emotional engagement is perhaps the most complex area of engagement to measure, and which is often measured using indirect measures because of the difficulty of assessing internal states (Appleton *et al.* 2006). Yet, attempting to measure emotional engagement is seen as a challenge worth pursuing due to the overwhelming indication that positive emotions can promote academic success and general well-being. Some studies have attempted to measure students’ reactions to a range of factors in the classroom: teachers, classmates and tasks. These observations can be carried out by researchers or teachers and have been used extensively (Brackett *et al.*, 2011). Self-report questionnaires have also been used extensively (Fredricks & Blumefeld, 2006), although younger students’ responses may not be particularly reliable, although triangulation methods have attempted to overcome this potential weakness (Booker, 2004). A large scale project run by the Institute of Educational Sciences concluded that twenty-one descriptors could be used to help measure emotional engagement in upper elementary through high school (Fredricks, 2011) using results from teacher report, self-report and observations. As it stands, measuring emotional engagement using such an approach may provide the most accurate results. With technology constantly evolving, there may be more reliable ways of measuring emotional engagement. Biometrics are already being used in other fields, such as advertising, to provide an insight into consumers’ emotional responses and it is likely similar approaches will soon be more widely used in educational research into emotional engagement.

Studies examining school readiness and the effect of summer birthdays on emotional engagement have tended to take samples from younger children. In recent years, there has been an explosion of interest in fostering the resilience and competence of children (Anderson *et al*.,

2004). The need for such initiatives to start as early as possible has seen a growth in samples being collected from younger students and current Resilience Projects are taking part across English primary schools. In the USA, samples have also been taken from younger children including work carried out by the IES (Fredricks *et al.*, 2011). Many studies take samples from younger teenagers: students in their early teens have comprised the sample groups in various US studies (McNeely *et al.*, 2002; Loukas, Roalson & Herrera, 2010).

Strongly associated with promoting emotional engagement is ensuring students feel a sense of belonging to their learning environment. While educators cannot influence some of the external factors which can cause negative and imbalanced emotions, steps can be taken to positively influence emotions. These include fostering strong student - teacher relations and peer relations in order to give learners a sense of community (Booker, 2004; Ramey, 2004). The 'learning environment' trend discussed in Chapter One is strongly linked to emotional engagement: students with a strong sense of belonging and identification with their learning environment are more likely to avoid harmful and negative behaviour (Voekl & Frone, 2004, Maddox & Prinz, 2003). In relation to school readiness, educators can promote emotional engagement by initially focusing on the socio-emotional aspects of school and encouraging parents, who tend to focus on the academic aspect of schooling, to do the same (UNISEF, 2012). A little researched area is how access to health care, particularly mental health care, could positively affect emotional engagement. However in the UK, a growing awareness of mental health issues in young people has initiated campaigns which seek to promote emotional well-being, such as YoungMinds, which offers resources and training to teachers (youngminds.org.uk). Such schemes may see greater research on whether certain interventions can promote emotional engagement, with existing research suggesting the feeling of 'being of value' promotes positive affective reactions.

2.2 Intellectual (or Cognitive) Engagement

Motivation and self-regulation are vital to understanding the final dimension, intellectual engagement, key to being academically successful in school. It can also give students a sense of well-being and confidence that encourage other forms of engagement. Equally, the emotional, social, cultural and behavioural engagement can help achieve

intellectual engagement as wellbeing indicators of intellectual engagement. Therefore, engagement is not a simple or unitary concept. While intellectual engagement looms large in our minds in education, we must not forget that is not independent or isolated from other kinds of engagement - together they make a whole. For example, we think through our emotions, and we engage with the world through our emotions. Although our attention may (and will) be focused on intellectual outcomes, to optimize these outcomes, other forms of engagement may have to be supported.

2.2.1 Introduction to intellectual engagement

Thus far, an analysis of trends in the student engagement literature has revealed that academics have responded to various problems in education by attempting to engage students in areas where they lack motivation. At the most basic level this lack of engagement is indicated by simple non-attendance at school or college and is often discussed along with the terms 'disengagement' or 'disaffection' (Skinner, Kindermann & Furrer, 2009). Attempts to explore, and solve, this problem have spawned many studies looking at 'drop-out' rates and poor attendance (Reschley & Christenson, 2012) many 'drop-out' studies have taken place in the USA, but an OECD (2012) report charted the number of UK pupils leaving school before entering upper-secondary education beyond the age of 16, as being 18%, showing this problem is not confined to the USA. Much younger students can also play truant, or parents opt for home schooling after observing their children become disengaged in mainstream schools. Yazzie-Minz (2010) found one of the main reasons students provide for dropping out of high school is a lack of positive and meaningful relationships with adults in school. An additional reason given was a desire to be more intellectually challenged at school. Avoiding this extreme reaction to disengagement is an aim of researchers, educators and politicians. Yazzie-Minz's findings suggest that building positive teacher-student relationships and providing leaners with sufficiently challenging work may be help avoid truancy.

Other trends have focused on problems that arise when the student is in school but they are disruptive in a way that affects their own learning and possibly those around them (Sun & Shek, 2012). This paper is based on classrooms in Hong Kong, where students traditionally display less disruptive behaviour than Western students, yet poor behaviour was prevalent enough to attract research. Both Eastern and Western studies have found that whilst some

students may appear to be following classroom routines, close analysis of their behaviour exposes a lack of full attention, such as tidying their desks towards the end of their lesson before being asked to (Trowler, 2010).

Meanwhile there are students who show outward signs of engagement, such as following classroom routines, but may feel mentally isolated, perhaps because they belong to underrepresented social or ethnic group or because of poor relationships with their peers. This lack of engagement is illustrated well by Lamborn, Newmann and Wehlage:

> *"Relations with other individuals, with objects, with the physical environment, with social institutions, with one's own labor, and even with the supernatural or divine can be construed on a scale or continuum. At one extreme, relations can be characterized by detachment, isolation, fragmentation, disconnectedness, estrangement, or powerlessness. These bespeak alienation."*
>
> (Lamborn *et al.*, 1992, p.16)

Similarly, there are passive learners who appear outwardly, behaviourally engaged but only participate when essential, as in written work, but not in answering or asking questions. Some studies have concluded such students are behaviourally engaged but not physically engaged. However, others would argue that engaged learners cannot be simply passive acquirers of knowledge, but are 'doers and decision-makers who develop skills in learning, participation and communication that will serve them throughout adulthood' (Murray, et al, 2004, p.8).

These trends, of course, often relate to particular categories of engagement. Non-attendance, for instance, can result from a lack of behavioural engagement, possibly stemming from a lack of emotional, cultural or physical engagement. Without physically attending lessons, the student cannot intellectually engage with the lesson content. Disruptive behaviour follows a similar pattern, although some lesson content may be retained, students with persistent behavioural problems achieve less well in formal examinations (Frick, 1991; Hinshaw, 1992). Students who are outwardly engaged, but have internalised emotional engagement issues surrounding isolation, identification or lack of resilience, may be processing lesson content but not as thoroughly as if they felt truly part of their learning community or emotionally happy or satisfied (Qualter, *et al*., 2012).

By breaking down these various trends and engagement categories, the vast majority of studies on student engagement is actually concerned with improving intellectual engagement and consequently academic performance. Hence, many studies measure engagement by using academic results, sometimes alongside self-report and observational methods (Kuh, 2001; Trowler, 2010).

Therefore, with intellectual engagement either explicitly or implicitly characterising much of the engagement literature, a closer analysis of intellectual engagement is needed.

2.2.2 Towards a definition of intellectual engagement

As we have seen, engagement is a commonly used term, but is often hard to define with variations in how it has been conceptualised (Appleton, Christenson & Furlong, 2008; Fredricks *et al*., 2004; Jimerson, Campos & Grief, 2003). Recently, it has become used so frequently by educators that some academics have warned it risks being a meaningless 'buzzword', or, 'fuzzword' (Vuori, 2014).

Before closely examining intellectual engagement it is important, therefore, to address the different terminology that has been used in this area. Intellectual engagement has been defined as 'a personal psychological and cognitive investment in learning (Willms, Frieson & Milton, 2009). As a term, 'intellectual engagement' has been used in many much-cited papers (Goff & Ackerman, 1992; Pasque & Murphy, 2005; Willms, Friesen & Milton, 2009). Other academics have defined these indicators as 'cognitive engagement' (Fredricks *et al.*, 2004). There are authors who have used the terms interchangeably, which begs the question; is there a difference between intellectual and cognitive engagement? There is no literature discussing the difference, if any, between the terms. However, we can explore the definitions of the terms 'intellect' and 'cognition'. The American Psychological Association's (APA) definition of the two words suggests there is very little, if any, difference, with intellect being defined as:

> *"**1.** the intellectual functions of the mind considered collectively.*
> ***2.** an individual's capacity for abstract, objective reasoning, especially as contrasted with his or her capacity for feeling, imagining, or acting. —**intellectual** adj."*

and cognition being defined as:

> ***1.*** *all forms of knowing and awareness, such as perceiving, conceiving, remembering, reasoning, judging, imagining, and problem solving. Along with affect and conation, it is one of the three traditionally identified components of mind.*
> ***2.*** *an individual percept, idea, memory, or the like.* ***—cognitional*** *adj.* ***—cognitive*** *adj.*
>
> (American Psychology Association Dictionary of Psychology online, n.d.)

The literature relating to student engagement however does not appear to consciously decide against using one term in favour of another, and, as previously stated, many use the terms interchangeably. For the purposes of this study, the term 'intellectual engagement' will be used, in the sense indicated by Willms, Frieson and Milton (2009), which similar to Coleman's (2005) definition: 'intellect' includes, 'openness to experiences' (Coleman, 2005, pp.371) and assumes engagement can be enhanced by external factors such as teachers' pedagogies.

2.3 Engagement and Motivation

As Reschley & Christenson point out, research on student engagement has its roots in the literature around motivation (Skinner, *et al*., 2008; Skinner, Kinderman & Furrrer, 2009 in Reschsley & Christenson, 2012). This is not surprising, as motivation has established links to goal achievement and need satisfaction. However, motivation in general may not necessarily translate to intellectual engagement, as Hidi and Harackiewicz explain:

> *"All children have interests, motivation to explore, to engage, but not all children have academic interests and motivation to learn to the best of their abilities."*
>
> (Hidi & Harackiewicz, 2000, p.168).

Meanwhile, as Russel *et al* (2005) state, that the two constructs are different:

> *"Motivation is about energy and direction, the reasons for behaviour, why we do what we do. Engagement describes energy in action, the connection between person and activity."*
>
> (Russell, Ainley & Frydenberg, 2005, p.1)

Of course, a difference between motivation and engagement can be seen in daily life, in people of all ages and it is not merely confined to students in learning environments. We may listen to an inspiring piece of music and be motivated to learn an instrument, but unless we engage in the steps of learning that instrument, the motivation will not be productive. Rather, motivation is an enabler of, or prompt to, intellectual engagement (Linnenbrink, 2002) and there is recognition that students need both the cognitive skill and the motivational will to do well in school (Pintrich & Schunk, 2002). Motivation itself, therefore is a means to an end, not an end in itself.

The aim of much research in the area of engagement and motivation has been to further academic interests and motivations for children to fulfil their intellectual potential (Linnenbrink, 2007). Researchers into motivation are psychologists, educational psychologists, and developmental psychologists (Reschley & Christenson, 2012, b.). In this study, we need to concentrate more on the work of educational psychologists but be aware that alternative bodies of work exist. We must also consider the attitudinal changes surrounding motivation in the literature, particularly since the 1990s, with more recent studies exploring motivation in conjunction with other factors of the classroom environment (Boekarts, de Konig & Vedder, 2006; Turner, 2012).

Prior to this period, motivation was thought of as being a character trait; determining an individual's readiness and willingness to learn, along with enabling learning behaviours (Vauras, *et al*., 2001). However, there is now an established school of thought in which depends on several factors, including learning environment (McCaslin & Hickey, 2001). Since the 1990s academics have reported that learning environments and traditional teaching can either have a positive or negative effect on the learner, with some students being motivated by conventional pedagogy, and others experiencing a regression in motivation (Covington, 1998; Lehitinen *et al*. 1995). For both researchers and practitioners, this is significant, for it suggests that steps can be taken by educational institutions to create environments that enhance and promote motivation and subsequently intellectual engagement (Blumenfeld, Kemplar & Krajcik, 2006). This view has given rise to various classroom strategies, including, providing learners with constructive feedback and encouragement, and, choosing to teacher topics based on the students' interests. The notion of 'cognitive apprenticeship' has also been incorporated into the practice of many teachers' daily lessons (Collins, Brown & Newman, 1989). Cognitive

apprenticeship models see classroom tasks, topics or units having real world relevance. Such 'relevant learning' or 'authentic learning' experiences are based on the fact that, until the industrial era, the vast majority of Western children did not learn in formal classroom settings but through 'apprenticeships'.

The idea that interest can be stimulated from the apprenticeship model is attractive. Not only has it been proven as a successful approach in historical contexts, as explained above, it also leads to young children making rapid progress in areas such as language acquisition, by simply being around and observing those who are already competent in speaking and listening, children learn to speak. Various studies have indicated a positive correlation between authentic and/or relevant learning and increased interest and motivation in learners. Students interviewed by Dunleavy and Milton, for instance, stated that engaging learning includes considering teachers' ideas and having the opportunity to 'see how subjects are interconnected, learn from and with each other and other people in their community, and have more opportunities for dialogue and conversations' (Dunleavy & Milton, 2009, p.10 in Taylor & Parsons, 2011). Other studies have found that problem solving tasks are effective in motivating learners and require high-order thinking, which indicates intellectual engagement, by demanding a combination of 'analysis and synthesis skills' (Jonassen, 1997, p.65). Such tasks demonstrate the links between learning environment and apprenticeship, for problem solving is part of everyday life and can be enhanced by a safe and supportive learning environment, where making mistakes is accepted as a natural part of the learning process (Jonnasen, 1997; Schoenfeld, 2012).

Interestingly, relevant tasks appear more effective in completing the interest-motivation-intellectual engagement sequence than so-called 'wow lessons'. Some academics have warned teachers against giving in to the temptation of delivering bells and whistles lessons that only momentarily gain interest (Brophy, 1991). These include, for example science lessons with impressive bangs or mini-explosions which may draw attention away from key facts that later impede intellectual engagement with a topic (Blumenfeld *et al.,* 1989, p 477).

2.3.1 Intrinsic and Extrinsic Motivation

A considerable area of the motivation and engagement literature explores intrinsic and extrinsic motivation.

> *"The most basic distinction is between intrinsic motivation, which refers to doing something because it is inherently interesting or enjoyable, and extrinsic motivation, which refers to doing something because it leads to a separable outcome."*
>
> (Ryan & Deci, 2000, p.55)

Cognitive development of very young children may hinder their ability to be behaviourally engaged; however, as children move through the early years they become intrinsically motivated as they cognitively develop (Kochanska, Coy & Murray, 2001; Kockanska & Knaack, 2003 in Mahatmya *et al.*, 2012). This explains the widespread use of external motivators for very young children in early years settings, pre-schools and elsewhere, such as behaviour charts and gold stars. However, the use of extrinsic rewards is not confined to the youngest of students, as Hickey and McCaslin point out, 'tangible rewards such as grading practices…(and) class competition are generally consistent with empiricist views' (Hickey & McCaslin, 2001, p.38). Although, it is likely many teachers would subscribe to the view that:

> *"Though such incentives play a part in the classroom, incentives such as these should only be used if they are linked to the development of students' competencies, or to enhance intrinsic motivation."*
>
> (Schunk, Pintrich & Meece, 2002).

Indeed, empiricist approaches are widely practised in conventional settings. Hickey & McCaslin, write, somewhat scathingly that, 'empiricist assumptions are so consistent with naïve folk-psychology views of motivation' (Hickey & McCaslin, 2001, p.37). However, there is little doubt that extrinsic motivation is often the enabler for many students to become intellectually engaged, with their goals being chosen for extrinsically motivated rationales, for instance passing exams to enter higher education. Interestingly, it has been found that intrinsic motivation declines as classroom competition, public displays of achievement and the grading of work increase (Corno & Randi, 1999; Covington & Teel, 1996, McCombs & Pope, 1994). Additionally, some researchers have cast doubt on whether intrinsic and extrinsic motivation

should be seen as separate entities (Pintrich & Garcia, 1991; Roeser, Midgley & Urdan, 1996). In the context of education, for instance, it can sometimes be hard to discern intrinsic from extrinsic motivation. For instance, in the case of students who are intellectually engaged in their studies in order to achieve a high grade may be for both personal satisfaction (an end in itself) and the external reward of a qualification (an end in itself and potentially a means to a further end).

2.3.2 Self-Regulation

It has been shown that intellectual engagement is reliant on interest and motivation. Often, motivation requires a conscious act of self-regulation to be productive. Bandura (1991) states that self-regulation includes; self-monitoring of one's behaviour, its determinants, and its effects; judgement of one's behaviour in relation to personal standards and environmental circumstances; and affective self-reaction, as well as self-efficacy. Self-regulation begins to develop in early childhood, with very young children gaining increasingly control over their emotions and behaviours. As children progress through schooling, the need for self-regulation and the ability to do it, in order to be intellectually engaged, and academically successful, increases, particularly as study outside the classroom becomes necessary, starting with homework and moving on to course work at secondary and independent study at a higher education level. Self-regulation, however, is also vital within the classroom; to complete tasks, participate fully and pay attention (Bierman *et al*., 2008). The ability to self-regulate has been seen as one of the best predictors of performance (Pintrich & deGroot, 1990; Wong, 2008). Again, promisingly for practitioners, is the fact that self-regulation strategies can be supported in classroom contexts and is not simply a naturally occurring character trait (Alderman, 2004). Examples of practices which can encourage self-regulation strategies can be seen in initiatives for both younger students (Perry & VandeKamp, 2000) and older students (Randi & Corno, 2000). When considering strategies which may be used by teachers to foster self-regulation in learners, it is helpful to note the two forms of control skills students need in order to intellectually engage: emotional and motivational, defined as:

> *"1. Emotion control skills involve the use of self-regulatory processes to keep performance anxiety and other negative emotional reactions (e.g., worry) at bay during task engagement.*

2. Motivation control skills involve self-regulatory processes directed toward keeping attention and effort on the task-despite boredom or general satisfaction with current performance."

(Kanfer, Ackerman & Heggestad, 1996, p.187)

When devising ways of giving students self-regulation strategies it is therefore wise to ensure both emotion and motivation control measures are considered.

2.3.3 Effort

Previously, the sequence: interest-motivation-intellectual engagement, has been used as a simple illustration of how complex constructs can interact. What has not been discussed is the role of student effort in intellectual engagement. Of course, interest and motivation may lead to effort. If the interest and motivational level are high enough, this may result in subconscious effort, almost 'effort-less effort' on the part of the learner. Studies have suggested that challenging tasks often stimulate increased intellectual engagement in both Western (Ames, 1992; Meece, Blumenfeld & Hoyle, 1988; Kuh, 2003) and Eastern settings (Hu, Ching, Chao, 2011). Student engagement and intellectual challenge are key to successful learning, according to widely circulated reports from the National Survey of Student Engagement (NSSE, 2006; Bromley, Schonberg & Northway, 2015). Unless a student is particularly gifted, tackling such tasks requires effort to succeed. More generally, research has noted the links between effort, motivation and engagement. Kuh (2009) defines student engagement as:

"The time and effort students devote to activities that are empirically linked to desired outcomes of college and what institutions do to induce students to participate in these activities."

(Kuh, 2009, p. 683)

Coates, similarly, has described active learning as students' efforts to actively construct their knowledge (Coates, 2009). Effort is more than simply attending an educational setting and beyond that, participating, it is a conscious striving towards an outcome or goal, shown in the strength of language used by Hu & Kuh, explaining the direct link between effort and academic success:

"The quality of effort students themselves devote to educationally purposeful activities that contribute directly to desired outcomes."

(Hu & Kuh, 2002, p. 555)

The use of words such as 'quality', devote' and 'desired' indicate the investment of emotion and time that is required to achieve optimal effort levels in order to guarantee intellectual engagement.

Low effort in relation to intellectual engagement is sometimes more noticeable than effort through non-participation (Covington, 1992). Students displaying low effort may do so in order to protect themselves from appearing low ability; unwillingness rather than inability to intellectually engage is seen as preferable for learners with low self-worth. Such protective strategies must be considered when measuring engagement in classroom on the part of both researchers and teachers, for they risk sabotaging children's long-term academic performance (Alderman, 2004). Indeed, current thinking on student effort places the onus on both learner and institution. The effort of the student has been briefly discussed, but an institution must also exert effort to engage students by creating supportive learning environments, holistic and academic, this notion supports the idea that learning is a 'joint proposition' by both learner and institution (Coates, 2005). In this study, therefore, there is a need to consider how we can promote both the students' efforts and the efforts of the institution to self-regulate, motivate and consequently intellectually engage can be promoted.

2.3.4 Flow

Often discussed in relation to intellectual engagement and intrinsic motivation is 'flow theory', first conceptualised by Csikszentmihalyi (1990). He theorizes that people are most happy in a state of flow which he defines as complete absorption with the activity and situation in which they are engaged (Parsons & Taylor, 2011). Under flow theory, the conceptualisation of student engagement is the culmination of concentration, interest and enjoyment, as opposed to boredom or apathy (Shernoff *et al*., 2014). Stemming for flow theory, and its measurement instruments, Flow Questionnaire (FQ) emerged the quasi-naturalistic method, ESM (Experience Sampling Method), which allows researchers to collect detailed data on engagement in the moment, signaling research participants at repeated times throughout the day and asking them to report on the nature and quality of their experience rather than

retrospectively, as is often the case with student or teacher self-report (Mérida-López & Extremera, 2017). The immediacy of ESM aims to reduce problems with recall failure and the desire to answer in socially desirable ways (Hektner, Schmidt & Csikszentmihalyi, 2007). ESM can provide insight into engagement across time and in different settings, through measuring experiences; 'thoughts, feelings and sensations' (Hektner *et al*. 2007, p.4). However, while Csikszentmihalyi argues that flow can lead to optimal engagement, two problems emerge with both flow itself and ESM as a measurement tool. First, students being in a state of flow may not necessarily be productive in the context of a classroom environment. For self-fulfilling purposes flow is a rewarding experience, the intrinsic motivation one has whilst in a state of flow is high, but for practical purposes in a learning environment it may not be ideal. It is unlikely that a class of children would all simultaneously experience flow and while a flow-like state may sometimes be suitable in some areas of the curriculum, for some subjects it is not necessary, and possibly not desirable. Although Csikszentmihalyi states some personalities are more likely to experience flow, it is arguable that those with such traits (including curiosity, persistence, low self-centredness, and a high rate of performing activities for intrinsic reasons only, lend themselves to being readily, intellectually engaged in any case. Various studies support the notion that people with such traits, often classified as 'autotelic personalities', tend to be readily engaged in tasks, whether in education or in the workplace (Harris, 2004) without being in a state of flow. Second, whilst ESM provides richer data than many self-report techniques, it also has its limitations, including: the disruption it can cause during lessons, the cost and supply of the electronic devices to participants; and, the authenticity of responses when the students know prior to and during the task that they are being monitored.

2.3.5 Measurement Problems

Intellectual engagement provides perhaps the greatest problem for researchers in terms of measurement. Engagement in general is a construct that is hard to measure (Fredricks & McColskey, 2012) and even innovative methods such as ESM, have their limitations. Measurement assumes precision, yet the literature points to exact measurements of engagement being almost impossible. Certain types of engagement, particularly behavioural engagement, may seem somewhat less problematic to measure, due to the fact external indicators can be observed. It is therefore more suitable to think of engagement measurements

as assessment and estimates. On the surface, one assumes that academic success points to intellectual engagement, however very able children may not necessarily have to engage fully in the classroom to be academically successful. Meanwhile, children who are not academically successfully may have been intellectual engaged, but have been hindered by their cognitive ability or emotional difficulties. Despite the complexity of measuring intellectual engagement specifically, several academics have attempted to design instruments to accurately gauge this problematic area. Most well-known are Cacciopo, Petty and Kau's *Need for Cognition* (NFC) (1984) and Goff and Ackerman's *Typical Intellectual Engagement* (TIE) (1992).

At first, it seems the two measurements are quite different, particularly when comparing samples (adults in Cacciopo *et al.*'s study and students in Goff & Ackermann's study) and the personality psychology aspect of NFC compared to the knowledge and skill acquisition focus of TIE. As usefulness for those interested in intellectual engagement in a school context, both add something of value. The NFC reminds us that cognition (and implicitly, intellectual engagement) is not needed for every task. TIE demonstrates that both typical and maximal levels of intellectual engagement exist, with students not necessarily requires the latter consistently to succeed. Also of note, is the fact that Goff & Ackermann concluded that TIE showed intellectual curiosity is a potential "third pillar" of academic achievement, the other two pillars being intelligence and effort, thus elevating the status of intellectual engagement. It is recognised that Rocklin claimed TIE was redundant, arguing that it is largely indistinguishable from openness to experience and therefore a redundant construct (Rocklin, 1994). Goff and Ackerman rather convincingly responded that although TIE and openness are related, they are still theoretically and empirically distinguishable (Goff &Ackerman, 1994).

It is noticeable that both instruments were designed several decades ago. In order to fully use the findings from TIE in a modern context, it may be productive to combine aspects of it with other measurement instruments. Indeed, a more recent study found a 'considerable overlap' between the two instruments (NFC and TIE), and concluded that examining both studies together may provide a useful insight (Woo, Harms & Kuncel, 2007). Rather than this indicating that both measurement methods are successful to an extent that no new instrument is need, it is more likely that the complexity and intensity of student engagement is now seen as almost immeasurable by a simple Likert scale questionnaire. That is not to undermine the

usefulness of both, but, there have been calls for a more robust and qualitative measure of intellectual engagement (Krause & Coates, 2008).

2.4 Engagement in school curriculum disciplines

Having examined different trends, categories and notions associated with engagement, and intellectual engagement in particular, it is now necessary to explore engagement in specific subject areas. Having noted that engagement is multidimensional and polymorphic, it is necessary to examine whether the construct becomes even more complex by differing within the school curriculum disciplines. Examining engagement from the perspective of flow theory Shernoff *et al*. (2003) found that students were more engaged in 'non-academic' subjects, with art, computer science and vocational studies coming top in measured engagement levels. The difference in engagement depending on subject area has been described as significant (Shernoff *et al.*, 2003). Unfortunately, the type of engagement this study measured was not specified. Indeed, older studies have also indicated that engagement varies by school subject (e.g. Stodolsky, 1988). Differences have also been found in the degree to which students like different subjects and how challenging and important they find them (Goodlad, 1984). Recalling the link between self-efficacy, motivation and engagement, it is, therefore, likely that such attributes influence intellectual engagement. Also, of significance is the fact that engagement in different subjects are likely to vary, based on attitudes towards certain subjects and individual students' perceptions and preferences.

In UK primary schools, English, mathematics and science are known as the 'core subjects', however timetables and assessments give particular emphasis to the first two subjects. Children are assessed at the end of primary school in Year 6 Standard Assessment Tests (SATs) in English and mathematics alone. Beyond primary education, all three subjects are compulsory until the age of 16 years old, but proficiency in mathematics and English, in particular, are essential for most kinds of employment. For these reason the focus of this study, is engagement in English and mathematics. All mainstream state schools have to teach these subjects regularly, whereas non-core subjects can be taught sporadically making measuring engagement in these more difficult. It is also argued that engagement in these subjects is seen

as central to subsequent success in school. While this study will take samples from English primary schools, this chapter includes studies from across the world. Although findings in different nations may not be wholly transferable to other classrooms, it is expected that certain aspects are at least relatable (Bassey, 2001). Relatability means that research findings, though not generalisable, can widely resonate (Mason, 1996) and shape the work of others in situations that are sufficiently similar to those in which the original study took place (Allan, 1998, p.3). For instance, children appear to be engagement by certain factors, irrespective of nationality. Even cultures which vary significantly, such as those of the UK and China, appear to share common indicators of engagement. This is supported by the fact that several large-scale studies of education use data from many countries, including TIMS, PANDA and PISA.

2.4.1 Engagement in English

First language teaching as a school subject varies depending on country. There are differences between countries where English is often the first language, as in the United Kingdom, USA and Australia, compared with countries where English is taught as an additional or second language. However, differences can also be found between countries where English is taught as the native language. In the UK for instance, secondary school divides the subject into two with English Language and English Literature being taken at GCSE level. In the USA, English or literacy is referred to as one of the Language Arts (Lundsteen, 1979) and seen as being composed of six components: listening, speaking, reading, writing, viewing, and representing (Campbell, 2006). At primary level, English in the UK curriculum is divided into four parts; spoken language, reading, writing and SPAG (spelling, punctuation and grammar). Spoken language is usually assessed throughout the course of the year and is not usually taught discretely. For this reason, this review focuses on the other three areas. The need for engagement has been popularly recognised across the curriculum in order for children to reach their potential and many school practices in English seek to teach in a style that sparks a child's interest.

Teachers following the National Curriculum in England and Wales have attempted to do this through immersive learning, creating a simulated or artificial environment, often by planning cross-curricular schemes of work on a particular author or book. Many schools

partake in a weekly 'Big Write' with the hope of producing high quality written work from prior learning in English lessons. However, there is relatively little testing to see if this approach to learning does anything to improve engagement levels, with most articles being written by practitioners and not academics. Additionally, there is also the sense that 'capturing' children's imagination and igniting a thirst for learning only address the first phase in engagement. Indeed, there is very little on student engagement in English from UK based researchers in general. There is literature from elsewhere which is relatable to the UK context. In order to review the existing literature thoroughly, it has been broken into three categories: measurement of engagement in English, what engagement 'looks like' in English lessons, and implications for future research.

In a large scale US study, Nystrand and Gamoran attempted to measure student engagement in English, stating that there were two forms of engagement, procedural and substantive (Nystrand & Gamoran, 1991, p.264). Whereas many studies on engagement across the curriculum relied mainly on self-report questionnaires, this study examined the effectiveness of questioning children in the classroom, in particular, follow-up questioning. Follow-up questions allow teachers to probe children's initial responses to questions and gain a deeper understanding of their thought-process (Walsh & Sattes, 2016). The method of observing 'uptake' in follow-up questions provides a useful and perhaps more nuanced set of data than simple Likert style questionnaires, as they provide rich data enabling analysis of both supportive, scaffolding pedagogical approaches, teacher-student relations and students' cognitive development, and thoughts. Also of note is Greek researchers, Mettallidou and Vlachau's (2007) work. When this paper refers to 'language' it is referring to Greek, and we must acknowledge that the learning of Greek may vary slightly to learning English. However, as the study focuses of first language use and samples younger children it is relatable to those teaching in English primary schools (Bassey, 2003). Mettallidou and Vlachau measure engagement through student self-report, the Motivated State Learning Questionnaire first used by Pintrich & De Groot in 1990, as well as collecting data from teachers, who ranked their students' achievement in both language and mathematics on a 20 point scale. The use of both student and teacher responses has also been used in many other papers measuring engagement in an attempt to give a fuller picture of student engagement. Meanwhile, it acknowledges the need to try to measure cognitive engagement as well as behavioral engagement, which offers

limited insight into the intellectual development of the student. Hawthorne (2008) used both teacher and student responses, coupled with focus groups, divided into engaged and reluctant writers to measure engagement in writing. Other academics have also used different methods of gathering data and then triangulating results in an attempt to provide a more insightful picture of engagement, combining either different *types* of data or the same type of data but from different *sample groups*.

There is no clear sense of what an engaged student in English 'looks like' from the literature, although some papers acknowledge that engagement in English needs to be multifaceted approach (Boakye, 2011). Examples of this can be found across English-speaking countries. Interestingly, a Canadian study on Literacy classified engagement as the involvement of the sensorimotor or physical, emotional, cognitive, and social dimensions (Csikszentmihalyi, 1997; Noddings, 1992 in Smithrim & Upitis, 2005, p.25), thus taking engagement beyond the usual behavioural, emotional and cognitive level. The literature does provide a sense of what engagement looks like for the separate strands of the curriculum, particularly reading and writing. The use of data gathered as part of the Program for International Student Assessment (PISA) is relatively common in papers on student engagement across the curriculum and English is no exception. PISA focuses on the Reading element and defines it as:

> *"the capacity to identify and understand the role that reading plays in the world, to make well-founded judgments and to use and engage with reading in ways that meet the needs of that individual's life as a constructive, concerned and reflective citizen."*
>
> (Organisation for Economic Co-operation and Development [OECD], 2003, p 108)

As, Bronzo Shiel and Topping describe, PISA's definition of successful reading is reading to learn rather than learning to read (Bronzo *et al.*, 2008). It is important to mention at this point that the PISA studies collect data primarily to explore performance on a global scale, rather than explore engagement globally. PISA does, however attempt to measure and define engagement in reading and provide a picture of what an engaged reader 'looks like'. Kirsch *et al.* (2003) discussed how engagement in reading is measured and defined by three factors:

- *how much time they usually spend reading for enjoyment each day.*
- *the frequency with which they read various types of material, such as newspapers, emails and novels, ranging from "never" to "several times a week".*
- *their attitudes about reading, such as whether they think it is fun and would not like*

to give it up.

(Kirsch, *et al*., 2003, p.12)

Interestingly, although this study found that the highest performing country, Finland, also had the highest level of engagement, other countries appeared to have little correlation between the two with Belgium having above-average reading literacy but the lowest level of engagement. Overall though, engaged readers did appear to read more and read a greater range of materials, although the meaning of engagement in this study seems to mean simply reading when not obliged to read. A number of papers discuss engagement in writing, with many aimed at tackling the problem of reluctant writers (Hawthorne, 2008; Senn, 2012). Such studies, evolve from work several decades earlier on 'writing apprehension' (Daly & Miller, 1975; Faigley, Daly & Witte, 1981; Smith, 1984).

Results from research on engagement in writing suggest that students who are engaged writers appear to have greater self-efficacy (Hawthorne, 2008). Students who engaged more with writing also demonstrated greater self-regulation, which again agrees with the literature on engagement in general. Self-regulation is mentioned less when discussing engaged readers, but choosing to read more varied texts, and more often, could be viewed as an aspect of self-regulation.

Far less material is available to show what an engaged student looks like in lessons with a spelling, punctuation and grammar content, particularly large-scale studies. Using a small-scale, case study design by Smagorinsky *et al.* (2007) suggests that grammar instruction was seen as boring by many students. However, introducing activities such as song writing, incorporating grammar knowledge into a *Jeopardy* game, using *Schoolhouse Rock* videotape, and playing musical chairs in response to grammar terms proved lessons could induced a sense of fun. We deduce that these activities engaged the students both behaviorally and emotionally, but when students presented what they had learnt in these lessons they were not always factually accurate (Smagorinsky *et al,* 2007, p. 84). This implies limited cognitive engagement with the grammar that was being taught, raising the question does engagement always look exciting?

2.4.2 Engagement in Mathematics

Mathematics is seen as a 'core subject' across the globe, not simply within the context of the National Curriculum for England and Wales. There is no doubt that it is important for all children to learn mathematics, and yet cultural context as an influencing factor in student engagement is perhaps most pressing when discussing mathematics. Traditionally, there appears to be a West/East divide in how mathematics is viewed and valued in classrooms, and in society more generally. Eastern countries have scored consistently higher in PISA mathematics performance tables than Western Countries, with Singapore, Hong Kong and Chinese Taipei coming in the top three and the UK being placed 22nd and United States 36th (PISA, 2015)[1]. However, with Western nations, such as Switzerland and Canada being placed 6th and 9th respectively, it seems that Western learners can indeed be successful in mathematics. The problems surrounding mathematics is best summarised in the National Numeracy Strategy's *Attitudes Towards Maths*:

> *"It is culturally acceptable in the UK to be negative about maths, in a way that we don't talk about other life skills. We hear 'I can't do maths' so often it doesn't seem a strange thing to say (Kowsun, 2008). Maths is seen as the remit of 'mad scientists', 'nerdy' boys, and the socially inept (Epstein et al, 2010). We talk about maths as though it is a genetic gift possessed only by a rare few, and inaccessible to the general public."*
>
> (National Numeracy Strategy, 2014, p. 1)

It would be fair to say that this anti-mathematics attitude is also found in other countries and this is reflected in the research into student engagement in mathematics (Singh, Granville & Dika, 2002). Yet, the recent introduction of 'Singapore Maths' and other such initiatives in UK classrooms is an acknowledgement that success in mathematics is dependent on pedagogical approaches as well as learning heritage. Such initiatives indicate that these cultural beliefs towards mathematics can be overridden by teaching in a style which has proved successful in Singapore and other areas of Asia. Whether negative attitudes stem from cultural biases or a tradition of poor teaching, mathematics is a subject where research has shown that anxiety and a lack of self-efficacy can be extremely detrimental, and yet is commonplace. The National Numeracy Strategy identified that 'Maths makes some people feel anxious, leading them to avoid situations where they may have to use mathematics' (Chinn, 2012 in NNS, 2014). Avoidance, as discussed earlier, can manifest itself as a lack of effort in students as a

[1] Note that there can be a number of reasons for this, including the nature of the tests.

self-protection mechanism to avoid appearing low ability. Some of the literature on engagement in mathematics acknowledges this (De Castella & Byrne, 2015), whilst others have focused on initiatives that improve engagement, or on exploring the differences between students of different ethnicities, social class and/or gender. Once again, by breaking down the literature on engagement in mathematics into categories and focusing on certain studies in particular, our understanding of engagement may be developed further.

When engagement in mathematics is researched, we see it being measured alongside variables such as gender, race and social class. Other studies rely less on the idea of 'difference' and focus more on testing approaches or interventions. Such research often measures engagement before and after the approach/intervention in a pre-test and post-test setting. One such study by Barkatas, Kasimatis and Gialamas (2008) in Greece sought to explore engagement in mathematics, particularly by using technology in mathematics. The mixed gender sample enabled engagement between boys and girls to be compared while acknowledging the 'complex interrelationship' between attitudes, engagement, gender and achievement. The instrument used to gather data was the mathematics and technology attitudes scale (MTAS), devised by Pierce *et al.* (2007). This instrument was designed specifically with middle school students in mind and may be relevant in this study, as it not only age-appropriate but also takes into account more than behavioural engagement, and includes affective engagement. The subscales used in the MTAS are defined as:

- *Mathematics confidence [MC]: students' perception of their ability to attain good results and their assurance that they can handle difficulties in mathematics.*
- *Confidence with technology [TC]: technology confidence as evidenced by students who feel self-assured in operating computers, believe they can master computer procedures required of them, are more sure of their answers when supported by a computer, and in cases of mistakes in computer work are confident of resolving the problem themselves. Confidence with technology was also considered as a construct relating to life outside as well as inside the classroom.*
- *Attitude to learning mathematics with technology (whether computers, graphics calculators or computer algebra systems) [MT]: students indicating high computer/graphics calculators/CAS and mathematics interaction believe that computer/graphics calculators/CAS enhance mathematical learning by the provision of*

many examples, find note-making helpful to augment screen based information, undertake a review soon after each computer/graphics calculators/CAS session, and find computer/graphics calculators/CAS helpful in linking algebraic and geometric ideas.

- *Affective engagement [AE]: how students feel about mathematics.*
- *Behavioural engagement [BE]: how students behave in learning mathematics.*

(Pierce *et al.* 2007 in Barkatas, Kasimatis & Gialamas, 2008, p. 564)

The technology component of the instrument may not be relevant in this study, but other aspects of the instrument may be of use in assessing notions associated with engagement that were discussed in the previous chapter, namely, attitudes, motivation, and self-efficacy. Unfortunately, despite the consideration of several types and aspects of engagement, the MTAS does not include an intellectual subscale.

When other subjects are discussed concurrently with mathematics, engagement is often measured by comparison. As mentioned previously, numerous studies exist comparing attitudes of students towards different subjects (Goodlad, 1984; Stodolsky, 1988). These do not necessarily set out to explore engagement, although we know that enjoyment, lack of anxiety and motivation relate to engagement. Other studies have begun to compare students' engagement levels across a range of subjects with engagement being the key focus. Marks (2000) attempted to identify whether patterns of engagement exist by examining mathematics and social studies and found that classroom subject 'substantially influenced engagement' (p.153). This conclusion was reached by analysing student responses with grades and data on their social and ethnic background, a method employed in numerous other papers.

Having provide an overview of way engagement in maths has been measured, it should be possible to see what engagement in mathematics 'looks like'. Of particular interest is Attard's 2012 article. He states:

"When viewed through a mathematical lens, engagement occurs when:

- *Mathematics is a subject students enjoy learning;*
- *students value their mathematics learning and see its relevance in their own lives now and in the future;*

- *students see connections between the mathematics they learn at school and the mathematics they use outside school"*

(Attard, 2012, p10)

At first sight one might wonder what the difference is, if any, between engagement 'through a mathematical lens' and engagement in any other subject. Attard's article fails to explain this difference, but, read alongside other papers, it would appear that the second point, 'students value their mathematics…' is a common feature of research on engagement in mathematics, more so than other subjects. The acknowledgement by the student that mathematics has a relevance within the classroom, and as part of their everyday life seems a key component in securing engagement. This is partly explained by Ainley *et al*.'s observation:

> *"When pupils learn to read and write their native language, they can immediately use these skills for (some of) the same purposes as adults: they can read for entertainment and for information, they can write messages, lists, birthday cards, email. The same is true for learning street mathematics, but not for learning school mathematics."*
>
> *(*Ainley *et al.*, 2006, p.26)

Research from earlier this decade reported a decline in engagement with science, technology, engineering and mathematics (STEM) study, and in subsequent choices to pursue STEM-related careers (e.g. Roberts Review, 2002; Stagg *et al*., 2003 in NFER, 2011). Research projects carried out by Kings College London and University College London, showed that engagement in STEM subjects decline as children progress through education regardless of student gender (ASPIRES and UPMAP). In some ways this decline is surprising, as we have seen that challenge can foster engagement, yet here, we see as the subject becomes more challenging, interest in it declines. One explanation may be that challenge tends to be presented beyond Vygotsky's Zone of Proximal Development. Of course, other possible factors may be influential here, such as STEM competing with other subjects. Yet, Marks' study found that students in mathematics classes report greater engagement than their peers in social studies, with the exception of middle school students where levels appeared more equal (Marks, 2000). The greater engagement levels in mathematics could be due to the fact mathematics students reported more authentic work (classroom based work with real life meaning or scenarios) than their social studies peers. Nevertheless, Ainley *et al.* argue that authentic learning is not always possible in mathematics (Ainley *et al.* 2006). Engagement is often explored by comparing different groups of students, to the extent that 'difference' could be seen as an engagement

trend in itself. Mathematics is often seen as a subject where boys 'do better', with 'doing better' being used as an umbrella term for higher grades, greater uptake of the subject when it becomes noncompulsory, and as a degree choice. This gender divide has been well documented in the previous few decades with early studies noting that girls express greater uncertainty about their mathematical performance, but also that boys express a greater expectation of success (Joffe and Foxman, 1984). However, for some time, the gender divide appears to be reducing in mathematics (Friedman, 1989; Arnott *et al*. 1990; Bevan, 2000). Mark's research showed girls were significantly *more* engaged in instructional activity than boys in mathematics lessons, perhaps indicating that exploring engagement in mathematics, and for that matter science, is not necessarily most relevant through gender divides. In the same study confidence in mathematics is linked with enjoyment of the subject, referencing Joffe and Foxman's earlier work (Joffe *et al.*, 1984). We have already seen that positive emotions can support engagement (Fredrickson, Cohn, Coffey, Pek, & Finkel, 2008; Waugh & Fredrickson, 2006). In terms of mathematics, it may prove as much, if not more, of an influencing factor than in English which, on the surface, we would expect to demand more emotional engagement. On the other hand, it may be that substantial emotional engagement in both subjects is needed but in different ways.

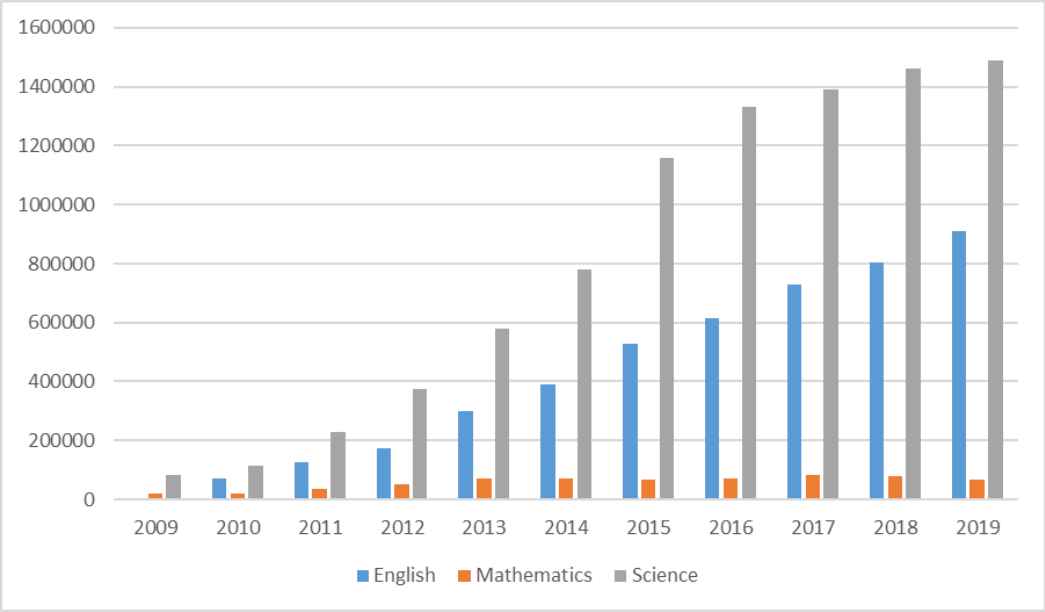
The vast majority of studies on engagement in English focus on one aspect on the English curriculum. Reading especially has been used as a curriculum area to attempt to measure and analyse engagement (Guthrie & Cox, 2001). Some papers exist on writing and engagement, but much of the literature on engaging children in writing does not appear to be written with the specific aim of exploring engagement in writing, rather it is included in studies on positive pedagogical styles. It appears that engagement in the learning of spelling, punctuation and grammar has been widely overlooked and that no papers explore different types of engagement needed for the different strands of the English curriculum. For instance, one would assume that emotional engagement is more important to foster in the areas of writing and reading, where sympathy, empathy, imagination and comprehension are required. Teaching spelling, punctuation and grammar is more procedural and, while feeling emotionally stable may improve learning, less of an emotional investment is needed. Yet a thorough review of the literature has not yielded any papers which explore the different categories of engagement required in different parts of the English Curriculum. The next stage for research must be to explore whether different types of engagement are needed in equal measures for reading,

writing and SPAG. Engagement in English or Engagement in Reading or Writing are perhaps too broad to obtain a complete picture of engagement in the subject. Instead, it may be more revealing to explore cognitive engagement in reading, writing and SPAG and then analyse differences between the different strands of the curriculum, taking into account the other forms of engagement which interplay with cognitive engagement. Indeed, the literature on student engagement in English appears to be the most problematic of the core subjects through which to navigate. Firstly, there is the complexity of English as a school subject. At the most basic level, there is the use of different terms to label the subject: Literacy, a Language Art and English. It is not even as simple as the label being different according to the country, with the National Curriculum in England Wales having switched from English to Literacy and then back to English. Regardless of the umbrella term of the subject, within the subject lies perhaps the most varied domains within any of the school subjects. Reading and writing are very different and have been researched separately. This has resulted in it being almost impossible to build a clear picture of what engagement in English 'looks like'. There is also the additional problem that the National Curriculum itself does not use the term engagement in the Programme of Study for English, leaving a vacuum which seems to be filled mainly by online blogs, 'teacher to teacher' articles and online lesson plans which promise to engage students. While not dismissing such sources, they do not provide a research based, rigorous analytical insight. Such research does exist, but none appears to provide a detailed diagnosis of engagement across the entire English curriculum.

Interestingly, although English and mathematics are the most prioritised of the core subjects in primary schools, engagement in Science appears to be more widely recognised as a contributing factor to uptake and success than the other two core subjects. This is reflected not only in the National Curriculum for England and Wales acknowledgement of engagement in its Programme of Study but also internationally with the numbers of papers including the words, 'student engagement science' outweighing papers with the key words 'student engagement literacy' or student engagement mathematics'. As Figure 2.2 illustrates, the number of papers published focusing on engagement in Science has been consistently higher than those written about English or mathematics. A thorough body of research exists in terms of how engagement can be measured in this subject as well as implicit indications of what engagement in science 'looks like'. To further the current literature, an exploration of how and

why engagement in science looks different to engagement in English and mathematics is needed.

Figure 2.2 Number of engagement articles available on Google Scholar by subject area since 2009



Unlike English, which is often examined in separate strands, mathematics is, almost without exception, examined as a whole in terms of engagement. Even the exception, problem-solving, includes activities from a range of mathematical fields; algebra, data handling or trigonometry, for instance. Exploring whether engagement varies between these strands has yet to be explored. Conversely, it would appear that the 'gender gap' in mathematics, in terms of both achievement and engagement, has been explored and perhaps largely remedied through research and classroom practices. While some studies have found that social class 'contributed significantly' to engagement, others have found class and ethnicity have weak correlations with engagement. The implication being that perhaps while gender, social class and ethnicity should still be analysed in research findings, the need for them to be the focus of a paper is lessening. However, there is less literature on how the level of challenge affects engagement, yet it would appear that finding the appropriate level may be more significant in mathematics than other subjects in terms of promoting engagement, with some studies finding that pitching lessons at

a level which students find too challenging may further decrease their self-efficacy while increasing their negative emotions towards the subject. Indeed, with attitudes towards mathematics having a long record of being unfavorable, it may be that emotional engagement needs to be considered more in order that children fully cognitively engage in the subject (Goodlad, 1984).

2.5 Engagement and Attainment

The research literature has shown that there is a lack of clarity surrounding engagement. It has also revealed that the different categories or kinds of engagement add to the complexity of the construct, as does the various notions associated with, and sometimes wrongly, confused with engagement. The lack of literature exploring how engagement differs between, and even perhaps within, subjects further adds to the vagueness surrounding one of education's most frequently used words.

However, the literature makes it clear that engagement is linked to attainment (Kuh, 2003; Van Ryzin, 2011). In the past, engaged students have been seen as a positive by-product of effective instruction but not necessarily a measure of it (Arteche *et al*., 2009). Such a view indicates the belief that attainment does not always require students to be fully engaged. Indeed, traditional methods of learning, such as the rote memorisation of facts may well require little cognitive engagement on the part of the learner. However, deeper levels of learning and understanding and a more student-centred approach, have led to engagement being seen as an essential component in attainment (Appelton *et al*., 2012; Finn & Zimmerman, 2012).

Recently, it has been documented that a strong predictor of student achievement is the amount of time students are actively engaged in learning, or academic engaged time (AET) (Gettinger & Walter, 2012). This finding accepts the weakness of simply measuring engagement through Time on Task (TOT). Time spent on a task is subtlety but significantly different than time spent actively academically engaged with a task. It has also been reported, for what appears to be the first time, that there is a link between engagement with the world of work and prior attainment in primary schools (Education and Employers, 2017). Thus, the

effects of engaging even the youngest pupils may be long lasting in terms of attainment, so much so that they extend beyond formal education. With both short and long-term positive effects of engagement on attainment firmly established in the literature, it is necessary to explore areas in this chapter. Firstly, in order to understand the link between engagement and attainment further it is useful to examine exactly what is meant by 'attainment'. Having defined what 'attainment' is and how it will be used in the context of this thesis, it is then necessary to attempt to distinguish which type, or types, of engagement appear to have the biggest effect on attainment. It may be that different kinds of engagement are needed to different degrees for high attainment in different subject areas.

In general, that is amongst students, parents and educators, it is fair to say that attainment in school means achieving, at least, the required standard to be accepted into the next level of education until a student is sufficiently qualified to progress into a chosen career path. In the literature, the keyword of 'attainment' is often replaced with 'achievement' in papers exploring the link between engagement and attainment (McGarity & Butts, 1984; Lee & Smith, 1995; Wu & Bao, 2010; Pong & Zeiser, 2012). Such papers' description of 'achievement' is clearly academic achievement, it remains that the word 'achievement' has connotations that reach beyond gaining the required standard of grades.

The psychological definition of achievement is 'a more or less successful mental acquisition of knowledge, ability, or skill' (Colman, 2003). Achievement in school encompasses a broad range of aspects, such as becoming a good citizen, successful participation in extra-curricular activities or simply having a full attendance record. It is often measured by the whether or not the student has met a set goal e.g. a child with poor behaviour may be set a goal of improving their behaviour, their achievement is reached when they consistently display good behaviour. However, in this paper, the link between engagement and purposeful, productive thought is being explored, therefore 'attainment', rather than 'achievement' is more suitable in describing a student reaching their academic potential. Other non-academic achievements may indeed help in attaining in this way, but they are not the focus of the study. It is accepted that the current established ways of assessing attainment may not be ideal (McNab, 1994). Test results may give a snap shot of a student's ability, but in some cases

may not be a true indicator of the student's true ability (for instance, some children suffer from test anxiety). However, for the purposes of this paper successful attainment is taken to be what satisfies teachers, the national curriculum, and external examiners.

Although academic attainment is not the sole aim of education, the importance of students achieving a high level of attainment is important for several reasons. On a practical level, good attainment reflects well both on the students and on the educational institution. Attainment is used to determine which ability set a student is allocated to in primary school (if the school streams children), how many and which type of qualification they will take in secondary school, and whether they will progress to higher education. Universities in the United Kingdom base their entrance requirements on an academic points system, meaning that quantifiable attainment is important for students to be accepted by the higher educational institution of their choice. However, attainment is also important for the wellbeing of students, despite often being seen as incompatible with performance within educational contexts. Indeed, research has shown that when students achieve academically they benefit from being viewed as a learner by the peers (Hattie, 2009) and have raised self-efficacy in learning tasks (Meece *et al*., 1988). In the longer term, as Carini *et al.* point out, being able to engage to attain can been viewed as an essential life skill: 'The very act of being engaged also adds to the foundation of skills and dispositions that is essential to live a productive and satisfying life after college' (Kuh, Carini & Klein, 2004, p.2)

2.5.1 Strategies to improve engagement and attainment

A variety of different strategies has been investigated to improve engagement levels and thus increase attainment. Much of the research on engagement has involved introduction of strategies to target a particular demographic of students, often at-risk groups, including children of immigrants (Suarez-Orozoco et al., 2009; Pong & Zeiser, 2012; Motti-Stefanidi & Masten, 2013), children from ethnic minorities (Johnson *et al*., 2001; Quaye & Harper, 2014) or from low income families (Tucker *et al*., 2002; McBride et al., 2006; Murray, 2009). A variety of papers focus on raising the attainment levels of those who are failing to meet the required standard, or at risk of failing, (Finn & Rock, 1997; Newman & Goldin, 1990). Fewer attempt to boost the attainment of learners who are already performing at a higher than average level

(Lawrence, 2005; Butler, 2006), although, with the current interest in mastery, it is likely that the literature in this area will grow.

Regardless of the target group of students, studies have often explored initiatives which they believe might raise engagement and consequently attainment. A rather speculative approach is often undertaken, measuring the impact on attainment of an approach that might be engaging. It is easy to see why this approach has been used, given the confusion between motivation and engagement. An educator may think of a lesson, project or approach which they believe will be fun and exciting for their class and lead to the kind of engagement which improves attainment. Yet, what they are actually doing, is triggering initial motivation which may only have transient effects on engagement (Silvia & Kashdan, 2009). Such an approach is not confined to educators, with many researchers investigating whether a particular treatment raises engagement and, in turn, attainment without explaining their motives for trying that particular approach. What may be of more use, and certainly of added value, is to look at what raises attainment, and work then backwards, identifying what category, or kinds of engagement have been increased by the initiative, and how this been achieved.

2.5.2 Attainment in different areas of the curriculum

Previously, engagement in English and mathematics was discussed. From the literature, it appeared that different subjects require a different 'blend' of essentials for learning, although, as was pointed out, this area of engagement has not been fully researched. Yet other areas of educational research have explored the way that pedagogies can vary between subjects. In the field of creativity, for instance, it has already been acknowledged that creativity looks different depending on subject domain (Plucker & Beghetto, 2004; Baer, 2007). Research also exposes how the current engagement literature fails to capture how engagement 'looks' for each individual subject. If there is to be a consensus of what engagement looks like within and between subjects, it is necessary to acknowledge that attainment may be viewed differently depending on subject domain. It is likely that the type of learning required for different subjects varies according to subject area, particularly as some subjects are seen as more interpretive than others. There is a widely held belief that mathematics requires more memorisation (Landbeck, 1993; Mason, 2003), while arts and humanities tend to be thought of as being more

of an innate talent (Gagné, 2013). The former, at least in school, tends to require one particular right answer or series of right answers to attain a top grade. Whereas the latter may require a particular response to a set of objectives, but that response may be shown through a variety of different ways: two students may both create a different piece of creative writing, for instance, yet both can meet the objectives set out by the teacher and therefore receive a high grade. There is a strong link between engagement in mathematics and attainment, yet a considerable amount of the literature on mathematics education is concerned with addressing negative feelings and attitudes towards mathematics (Brown, Brown & Bibby, 2008). Indeed, negative feelings about mathematics appear to be a barrier to engagement and thus to attainment. There is less literature specifically exploring barriers to engagement in English and Science, but certainly, engagement in both is required in order to attain.

Previously discussed was how engagement can be categorised in a variety of ways regardless of subject domain. Schlechty (2002) defines five levels of student engagement:

> *"• Authentic Engagement—students are immersed in work that has clear meaning and immediate value to them (reading a book on a topic of personal interest)*
> *• Ritual Compliance—the work has little or no immediate meaning to students, but there are extrinsic outcomes of value that keep them engaged (earning grades necessary for college acceptance)*
> *• Passive Compliance—students see little or no meaning in the assigned work but expend effort merely to avoid negative consequences (not having to stay in during recess to complete work)*
> *• Retreatism—students are disengaged from assigned work and make no attempt to comply, but are not disruptive to the learning of others*
> *• Rebellion—students refuse to do the assigned task, act disruptive, and attempt to substitute alternative activities."*
>
> (Schlechty, 2002 in Digamon & Cinches, 2017, p.2)

These levels of engagement are not subject specific, just as Bloom's taxonomy of learning can be applied across the curriculum. The progress of stages in learning from acquiring

knowledge to evaluation and critical thinking may look different in different subjects, but remain as important across the curriculum. However, there appears to be little which explores how attainment is assessed differently in English, mathematics and science, and certainly no simple overview of attainment which can be used for all subjects. Doing so may be difficult as assessment methods in each subject vary widely, however, it may be useful to look at the relationship between engagement and the different stages of the critical thinking pyramid in each subject and then make comparisons.

2.5.3 Measuring attainment

It has already been highlighted that there are difficulties in defining and measuring engagement. Attainment can be somewhat more concrete, and there are certainly many measures used to measure academic achievements, yet it is not without its problems (Goldstein, 1983). First, even when a working definition of what attainment is has been established, the problem with attainment measures that are seen as 'benchmarks' exists. Widely used forms of assessment within an educational system at a particular age, through a one off test for example, provide a narrow snapshot of a child's attainment level and educational experiences (Smith, 1995). The limitations and artificialness of this approach are demonstrated by how such assessments can go from being extremely important in measuring and judging attainment to defunct in a relatively short space of time (e.g. the 11 plus examination that children took from the 1940s to the 1970s which determined the type of secondary school they would attend). Meanwhile, most attainment surveys measure the direct output of education (Jenkins & Sabates, 2007), rather than being used as a continuous assessment method to inform practitioners. These often 'serve as a proxy for skills and competencies' (Schneider, 2011, p. 2). So, while there are obvious links between engagement and attainment, the link may not always be clear because of the vagaries of assessment and what it is used for in its various forms, and as it appears in practice.

2.5.4 Tracing engagement through attainment

The largest and most influential publication on attainment is currently Hattie's (2009) *Visible Learning*, a meta-analysis over 800 papers from around the globe, which examines the

contributions of various factors to achievement. Achievement in this context is academic attainment and may inform this study. Rather than simply exploring engagement to attainment, using data from Hattie's meta-analysis, it is possible to work backwards drawing upon the attainment literature to try and identity what type of engagement has been stimulated by strategies or initiatives which have provided large effect sizes. Papers used in this analysis were those from each student-centred category, as defined by Hattie: student, home, teacher and curriculum. In order to form a coherent picture, results of this analysis have been arranged in categories of contributions with the paper from each category that has the highest effect size at the top (see Table 2.1). The type of engagement that was stimulated by the approach documented in the paper is then stated along with how it has been achieved (e.g. Problem-based learning). The purpose of this approach is to provide a new insight, examining engagement in a way that allows for consideration of what works for a more inclusive sample of children, as opposed to particular at-risk groups. Although some of the authors included in Table 2.1 have found a particular group of children benefit more than others, overall they examine attainment across the whole class or classes. Additionally, none of these papers is focused on engagement, meaning that the authors are unlikely to have a subconscious bias, in linking a particular type of engagement to attainment.

Table 2.1- Papers with interventions causing a large positive effect size in attainment and corresponding form of engagement.

Paper	Intervention Type	Effect size	Category of engagement
Falchikov & Goldfinch (2000)	**Student**- self-assessment in college	1.91	Intellectual (independent)
Fusaro (1997)	**Student**- Pre-school programs-half vs full day kindergarten	1.43	Intellectual Physical (stamina)
Jordan & Brownlee (1981)	**Student**-Piagetian programs- Piagetian tasks and reading and math	1.28	Intellectual (independent)
Hattie & Hansford (1983)	**Student**- prior achievement- Intelligence and achievement	1.19	Emotional (self-efficacy) Intellectual (ability)
Boulanger (1981)	**Student**- prior achievement- ability related to science learning	1.09	Intellectual (ability) Emotional (self-efficacy)
Kumar (1991)	**Student**-Concentration/persistence/engagement-Engagement in Science	1.09	Emotional (persistence) Intellectual (concentration)
La Paro & Pianta (2000)	**Student**-Prior achievement-preschool to first years of schooling	1.02	Emotional (self-efficacy) Social Intellectual (ability)
Mabe & West (1982)	**Student**-self-evaluation of achievement	0.93	Intellectual (independent)
Trapmann, Hell, Wiegand & Schuler (2007)	**Student**-prior achievement- high school grades to university grades	0.90	Emotional (self-efficacy)
Iverson & Walberg (1982)	**Home**-Home environment and school learning	0.80	Cultural (family background)
Graue, Weinstein & Walberg (1983)	**Home**- effects of home instruction	0.75	Cultural (family background)

Kulik & Kulik (1984)	**School**-Acceleration-on achievement outcomes for gifted	0.88	Intellectual (challenge)
Kulik (2004)	**School**-Acceleration with same age controls on gifted	0.87	Intellectual (challenge)
Brami, Bernard, Borokhovski, Surkes, Wade & Zhang (2006)	**Curricular**- Creativity- Interventions to improve critical thinking	1.01	Intellectual (thinking skills)
Huang (2005)	**Curricular**- creativity programs	0.89	Intellectual (thinking skills)
Gersten & Baker (2001)	**Curricular**- writing programs- expressive writing	0.81	Intellectual (thinking skills)
Mastropieri &Scruggs (1989)	**Teaching-**Strategies emphasizing student meta-cognitive/self regulated learning-mnemonic keyword recall program	1.62	Intellectual (thinking skills) Intellectual (independent learning)
Rolheiser- Bennett (1986)	**Teaching-**Strategies emphasizing student meta-cognitive/self regulated learning- memory training	1.28	Intellectual (independent learning) Intellectual (thinking skills)
Mellinger (1991)	**Teaching**- Implementations emphasizing teaching strategies-problem solving-increasing cognitive flexibility	1.13	Intellectual (ways of working) Instinctual (problem solving)
Swanson & Lussier (2001)	**Teaching**- Dynamic assessment-feedback	1.12	Intellectual (challenge) Behavioural (exam performance)
Witt, Wheeless & Allen (2006)	**Teaching**- immediacy of teacher feedback	1.115	Emotional (relational) Intellectual (challenge)
Gillingham & Guthrie (1987)	**Teaching**- Computer based instruction	1.05	Intellectual (ways of working)
Phillips (1983)	**Teaching**- Peer Tutoring-Tutorial training of conservation	0.98	Emotional (relational) Intellectual (ways of working)

Lee & Genovese (1988)	**Teaching**-spaced vs massed practice	0.96	Intellectual (ways of working)
Lysakowski & Walberg (1982)	**Teaching**-Cues, participation & corrective feedback	0.98	Social (participation in class)
Baker & Dwyer (2005)	**Teaching**- Field independent vs Field dependent	0.93	Intellectual (independent)
			Intellectual (ways of working)
Burns (2004)	**Teaching**-Goals- degree of challenge	0.82	Intellectual (challenge)
Xin & Jitendra (1999)	**Teaching**- Implementations emphasising teaching strategies- word problem solving in reading	0.89	Intellectual (problem solving)
Kozlow (1978)	**Teaching**- behavioural objectives/ advance organisers- Advance organisers	0.89	Behavioural (organizational)
Johnson, Johnson & Stanne (2000)	**Teaching** Cooperative vs individual learning	0.88	Intellectual (independent)
			Social (cooperative learning)
			Behavioural (interdependent)
Block & Burns (1976)	**Teaching**- Mastery learning-	0.83	Intellectual (challenge)

Having examined 31 of the most effective interventions and identified which category or categories of engagement they enhanced, it was found that different categories of engagement were not equally represented. Figure 2.3 illustrates that the majority of interventions led to increased intellectual engagement, followed by emotional engagement.

Figure 2.3 Categories of engagement represented in Hattie's sample of educational approaches with have high positive effect size on engagement (subdivided into how this engagement was achieved).

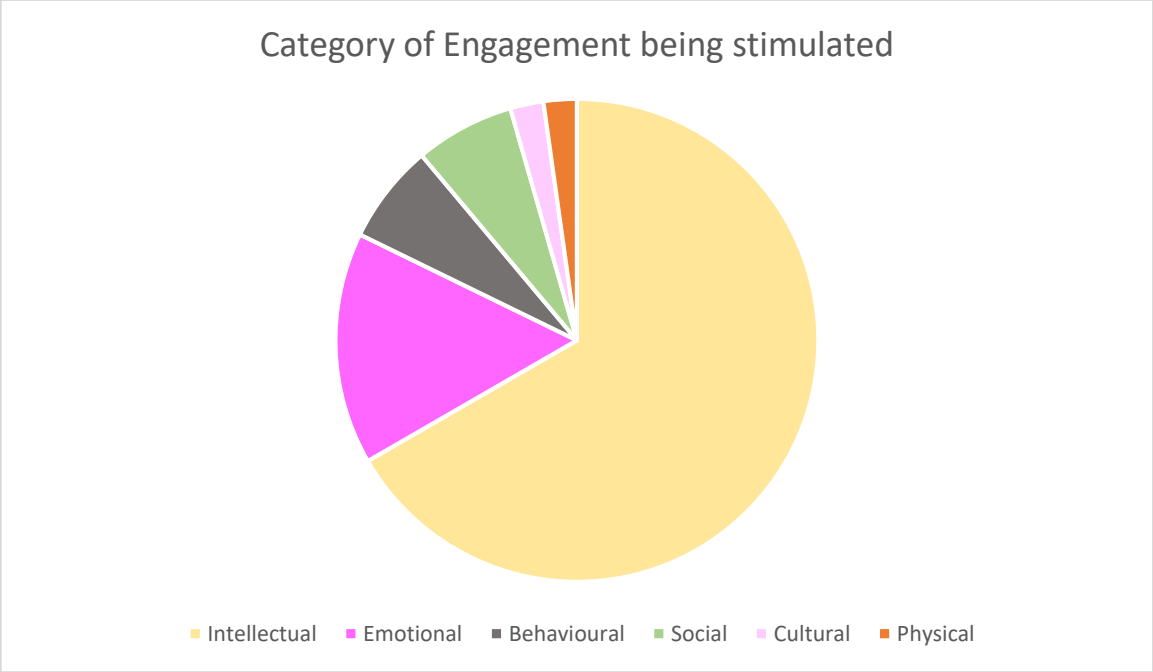


Table 2.1 demonstrates the overwhelming effect of intellectual (cognitive) engagement on attainment effect size. Regardless of the type of contribution to achievement, 'student', 'school' or 'teacher' intellectual engagement was the most prevalent form being stimulated, with the only exception being two papers which examined the effect of help at home/family background which concentrates more on cultural engagement (Iverson & Walberg, 1982; Graue, Weinstein & Walberg, 1983). Although other forms of engagement were shown to be present, behavioural, social and emotional, most also included a dimension of intellectual engagement. To explore how intellectual engagement was stimulated the papers were identified as having a focus on either; thinking skills, independent learning, (shown above in Table 2.1). The means by which other forms of engaged have been stimulated are also stated in Table 2.1. Despite a breadth of literature on emotional, social, behavioural, physical and cultural engagement, the analysis of papers shown in the form of a bar chart clearly illustrates the dominance of intellectual engagement in supporting attainment (Figure 2.3 above). Noticeably absent is physical engagement, which, as discussed earlier in this chapter, may be better being considered as a sub-set of behavioural engagement. Interestingly, emotional engagement is the second most effective category and reflects the growing literature acknowledging the

importance of emotions on learning (Newton, 2014). Breaking down the ways intellectual engagement has been achieved, reveals that teaching students 'thinking skills', providing them with a level of challenge, independent learning and problem-based learning opportunities.

However, it is important to note that not all of the papers with large effect sizes that were included in Hattie's meta-analysis were able to be used, as they did not provide sufficient details about the type of engagement that is being stimulated, either explicitly or implicitly. It is also acknowledged that intellectual engagement also often relies on students having a sufficient amount of other forms of engagement. However, the analysis has been pointed to the main category or categories of engagement stimulated by the strategy used in the papers. Additionally, a limitation of using Hattie's meta-analyses is that only studies using quantative data are covered. This is understandable as they provide easily measurable results to compare and rate them in order of effectiveness (McMillan & Schumacher, 2014). No comparable meta-analysis has been done on attainment using research based on qualitative date, meaning that the 'backtracking' from attainment to engagement discussed in this chapter has not included results from qualitative papers. It is unlikely that such papers would produce significantly different results in terms of what types of engagement are most linked to attainment although they could suggest useful theoretical relationships. However, this cannot simply be assumed. A brief overview of the types of initiatives that were found to have large effect sizes by Hattie indicates that such approaches have been found to be successful in much of the qualitative engagement literature. These are briefly discussed below.

The category of ***thinking skills*** was grouped apart from 'problem solving' or problem based learning (see below), The thinking skills involved in the papers synthesised by Hattie concentrate on making students aware of their own thinking, in other words developing their meta-cognition. Such approaches, including self-regulated learning, are becoming more prevalent in the engagement literature. In addition, there has been a recent surge of interest in mindfulness. Further positive correlations are to be found in the cognition and education literature where a link between meta-cognition and attainment has been well documented. As Hanley explained, 'to become a critical thinker, one not only must develop expert thinking skills, but also become an expert at choosing the best skills for a particular situation' (Hanley, 1995, p.68). Attempting to teach students skills and decision making to become a critical

thinker therefore goes far beyond the traditional 'sage on the stage' role of the teacher, and encourages students to take an active rather than passive role in their learning.

Tasks which developed increased ***independence*** in the learner, or autonomy in how learning is to take place, appeared to have a positive effect on intellectual engagement leading to attainment in Hattie's meta-analysis with some significant effect sizes (Mabe & West, 1982 - 0.93 effect size; Falchikov & Goldfinch, 2000 - effect size 1.91). Increasing the autonomy of the learner has been widely established as a desired practice of modern pedagogy through all phases of education. The engagement literature also shows a link between increasing students' independence and cognitive gains. While questions were raised about the levels of autonomy and responsibility accepted and adopted by students (Boud, 1988; Gow & Kember, 1990; Bannister *et al*., 2002) it appears that initiatives to raise levels of independence in students are now largely welcomed. Two kinds of autonomy are commonly found in the literature. The first providing learners with some autonomy in what and how they learn. This is known to allow self-realisation and is motivating. Teaching learners to be autonomous in life is another matter. Clearly, this is a desirable outcome of a Western education. It is also worth clarifying that encouraging independent enquiry, does not mean students working in isolation. Interdependent working between learners, but facilitated by educators, is also recognised as independent learning (McBrien, Cheng & Jones, 2009). Only one of the papers in Hattie's book dealt specifically with interdependent or collaborative working (Johnson, Johnson & Stanne, 2000- effect size 0.88) and was categorised as being mainly in the social engagement group. However, links with intellectual engagement are obvious, not just in this paper, but in others looking at collaborative working (Palincsar & Herrenkohl, 2002; Sweet, & Michaelsen, 2012).

Problem based learning (PBL) is an approach to learning which is commonly called 'problem solving'. There is a subtle difference between the two, despite the frequent (mis)-use of the term problem solving, and that is that solving the problem is not always necessar~~i~~ly in order for the student to experience higher level thinking. Its appearance as an effective approach in Hattie's meta-analyis is of little surprise given that the central goal of problem based learning is cognitive engagement (Coffman, 2017). In PBL, students are given a realistic problem to solve and generally address it without prior instruction (Schwartz, Mennin, and Webb 2001).Considering that an engaging lesson is one where children become engrossed,

interested, make progress, and finish with satisfaction (Newton & Newton, 2009), PBL is can be an effective approach. Its effectiveness in stimulating cognitive engagement leading to raised attainment, in both the short and long term is described by Newton & Newton:

> *"The promise of PBL lies in the way it can mirror professional action, motivate students, produce durable, meaningful learning, enhance the ability to use resources, have students cross the theory – practice divide, integrate learning and develop the skills of the "lifelong learner" (Engel 1991; Vernon and Blake 1993; Maudsley 1999; Savin-Baden 2000; Schwartz, Mennin, and Webb 2001; Newman 2003; Beringer 2007)."*
>
> (Newton & Newton, 2009, p.315)

The PBL approach, takes students beyond the initial motivation stage into cognitive engagement. It also, results not only in short-term attainment but also develops 'life-long' skills which students can use to attain throughout their education, and into the workplace. Despite taking the onus away from the teacher in some ways, successful PBL requires that teachers plan or select motivating problems, and are well-organised lessons (Coffman, 1999, p.131) and, therefore, it is certainly not an 'easy-option' for practitioners. Meanwhile, although not appropriate for all aspects of the curriculum, it can facilitate and replace passive learning and rote memorisation with active investigation, participation and problem solving (MacDonald & Isaacs, 2001).

Increased engagement through ***authentic and relevant tasks*** was found to have a positive effect on engagement in several of the papers used in Hattie's meta-analysis, reflecting findings in the engagement literature. It has been suggested that one of the reasons behind this positive effect has been that real world problems defy disciplinary boundaries (McPhee, 2002), meaning that low motivation in one subject area, or low self-efficacy, does not necessarily preclude a learner from actively engaging in attempting to solve the problem. Children may attempt to solve a problem rather than risk a sanction from the teacher, despite having little motivation or confidence in solving the problem. Additionally, there is often a lot of overlap between PBL and authentic learning tasks, and the solving of a 'realistic problem' (e.g. Mackinnon 2006; Pepper, 2008) has been found to have positive effects on engagement of learners of all abilities. Recently, with the rise of on-line learning the literature on 'authentic' learning has shifted slightly to include environments rather than tasks, with a number of papers focusing on the link

between creating an authentic environment and attainment (Herrington, 2006; Woo *et al*., 2007; Bourgeois-Bougrine et al, 2020).

The engagement literature has found that ***self-efficacy*** promotes student engagement and learning (Linnenbrink & Pintrich, 2010) and this is consistent with the findings of Hattie's meta-analysis. Self-efficacy has also been seen as a predictor of student engagement (Caraway *et al.,* 2009), in particular cognitive engagement (Walker *et al*., 2006). It appears to have a multidimensional role in supporting engagement, having been linked to goal orientation (Caraway, 2009) protection from fear of failure (Caraway *et al.*, 2009) and intrinsic motivation (Fan & William, 2009). Due to the various ways in which increased self-efficacy can help students, numerous research projects have attempted to boost self-efficacy to raise engagement levels to enhance academic performance (e.g. Caraway *et al*., 2003; Walker, Greene & Mansell, 2006; Bresó *et al*., 2011).

Setting tasks that are challenging yet achievable has been found to be engaging for some time (Ames, 1992; Trowler, 2011). An appropriate ***level of challenge*** was found to improve engagement in all phases of education from primary level (Fredricks & McColskey, 2012) to high schools (Carini *et al*., 2004; Shernoff *et al.* 2014) and universities (Pike & Kuh, 2004). Some students may be deterred by the thought of a challenging task, because low self-efficacy leads them to avoid or delay strategies as a way of self-protection (discussed in Chapter Two). However, through regular, challenging tasks and support from teachers, all students should achieve a neutral or optimistic outlook (emotional engagement) so that they are able to persist in the face of failure through by effort, strategic thinking, problem-solving, information-seeking, and experimentation (Klem & Connell, 2004, p.262). The recent growth in research on gamification has seen some studies reporting that setting time constraints to add a level of challenge has increased engagement (Koivisto & Hamari, 2014), suggesting that the link between challenge and engagement continues even when newer technologies are introduced into classrooms, and are used on a more regular basis than at present.

With studies reporting engagement levels as low as 45-50% in some classrooms (Gettinger & Walter, 2012) it is desirable that attempts are made to raise engagement levels to

promote attainment. Previous studies have demonstrated that engagement can indeed be improved and is not a fixed mind-set, which is encouraging for both researchers and educators. However, it appears that there is not a particular approach that will uniformly increase the majority of all learners' engagement levels. For instance, what helps in improving engagement in some learners, such as smaller class sizes, may not have an impact with other learners (Blatchford *et al.,* 2011).

Using Hattie's meta-analysis to identify the types of engagement stimulated in studies that had the largest effect sizes on improving attainment, it was discovered that intellectual engagement was the most prevalent form of engagement being enhanced. Although Hattie only used quantitative studies an overview of approaches that appeared to increase attainment showed that the same approaches had been demonstrated to be effective in the engagement literature.

In effect, by attempting to work backwards from attainment to engagement and back again to test the robustness of research that argues that particular types of learning approaches support engagement, going in some way suggesting approaches which may benefit the majority of learners. The analysis of Hattie's work found that approaches that seemed to act as a stimulus for intellectual engagement were by far the most prevalent in terms of raising engagement. As discussed in previous chapters, it is rare for a student to be engaged in only one way. For instance, a student who is intellectually engaged is likely to also be emotionally, behaviourally and socially engaged. Furthermore, even within the purely academic definition of 'attainment', there are still different areas within academic learning and achievement, such as, memorisation, understanding and problems solving, yet these have not been fully explored in the literature. It can relate to the intellectual, physical, cultural, behavioural, emotional and social aspects of education or be various combinations of these (Davies, Newton & Newton, 2018, see Appendix 1). Social and emotional engagement accounted for most interest, closely followed by intellectual engagement. Kandel (2006) argued that constructing understandings needs a lot of mental concentration, which is helped by both strong intellectual or emotional engagement. Interest in engagement in certain curriculum areas also varies.

2.6 In Summary

In this Chapter I have reviewed an extensive literature related to research into aspects of engagement and attempted to tease out the key messages. In this summary I will consolidate these into the key studies and the message of their researchers.

1. Engagement is a multidimensional construct (Martin, 2008; Cirica & Jovanovich, 2016; Reshley & Christenson, 2012), which has led to problems for those attempting to define and conceptualise it (Appleton, Christenson & Furlong, 2008; Fredricks *et al*., 2004; Jimerson, Campos & Grief, 2003).
2. There is variation in the value placed on different categories of engagement in different phases of education, with studies on social and cultural engagement, for instance, predominantly taking place in further and higher education settings (Hess, Lanig and Vaughan, 2007; Jacoby, 2009).
3. Intellectual engagement is vital for success in school and is the main focus of key studies in the broader engagement literature (Goff & Ackerman, 1992; Pasque & Murphy, 2005; Willms, Friesen & Milton, 2009). Intellectual engagement also underpinned many of the strategies found to raise attainment in Hattie's meta-analysis (Hattie, 2009).
4. Motivation (Ryan & Deci, 2000), self-regulation (Pintrich & deGroot, 1990), effort (Kuh, 2009) and flow (Shernoff *et al*., 2014) are associated with intellectual engagement, but are not synonymous with it.
5. Although subject area has been described as significant in determining a student's engagement level (Shernoff *et al.,* 2003) limited research exists exploring what engagement looks like in different curriculum areas. There are also considerably fewer studies on engagement in mathematics and English than there are on Science (Figure 2.2).
6. Engagement is undoubtedly not only a "buzzword" but an essential component in students' attainment (Kuh, 2003; Van Ryzin, 2011). Measuring both attainment (Goldstein, 1983) and engagement (Fredricks & McColskey, 2012) have proven problematic.

Engagement is not only multi-dimensional, but it is accepted that, based on the person-environment fit perspective (Eccles, Wigfield, Harold & Blumenfeld, 1993), one size does not

fit all in terms of the optimal organisation of developmental tasks and ecologies that promote engagement and vice versa (Mahatmaya, Lohman, Matjasko & Farb, 2012). So whilst promoting a form of engagement for one student might be beneficial, this might not necessarily be the case for all students. Meanwhile, while certain categories of engagement are highly valued in some phases of education, such as social engagement through civic and political participation at universities, it is not considered as vital in primary schools. When reading papers focusing on one or several of these engagement categories certain words, such as involvement, self-regulation, participation, well-being and most regularly, motivation, are found repeatedly.

Intellectual engagement is vital for success in the current school system to the extent that it has been deemed the primary responsibility of educationalists. Whilst some researchers have used the term 'intellectual' and others 'cognitive' when exploring this engagement category, the general consensus is that engagement in this area involves 'serious emotional and cognitive investment in learning' (Willms, Fireson & Milton, 2009, p.40). Motivation, triggered by interest and curiosity, can be a precursor to intellectual engagement, but, that engagement does not always come from motivation. Promisingly, for those involved in education, the view of motivation has shifted in recent decades so that it is no longer seen as an inherent character trait but a construct which can indeed be shaped by learning environments (Nolen, 2003; Daniels, 2010). Indeed, it appears that pedagogical approaches, such as teacher questioning and scaffolding, as well as task design, including problem solving activities and relevant learning contexts, can encourage motivation in all learners. Self-regulation and effort have also been briefly explored, in order to identify further and understand the process from initial curiosity to intellectual engagement. It appears that both are vital in students channeling motivation into an essentially productive outcome, and in the achievement of a student's goals, whether present or future. Of course, some students have particular personality traits which mean they are more-readily motivated and more naturally self-regulated, called autotelic personalities in some studies (Baumann, 2012). A state of 'flow' is often more readily found by such students, yet not exclusively so. Indeed, it was discussed how a state of flow was not necessarily conducive, or regularly conducive to the types of learning activities being taught in schools. If teachers relied on students being in a state of flow, then intellectual engagement

would likely be rare. However, briefly examining flow has exposed the idea that intellectual engagement may be achieved differently depending on the curriculum area.

Engagement is undoubtedly, not only a 'buzzword' in education, but a construct which has been much researched over recent decades. It is therefore surprising, considering the apparent widespread use of the term 'engagement' in education, that the words 'engage' and 'engagement' appear only ten times in the Primary National Curriculum for England and Wales (with all but one reference (to Science) being made in 'foundation subjects'). Not only is there little governmental guidance for teachers on what engagement means or how to measure engagement in the core subjects, there is also little advice on what engagement looks like. Yet, this chapter adds to the evidence that not only is engagement a multidimensional construct it also looks different and is measured differently depending on the curriculum subject. Despite the literature has a wealth of information on engagement in different subjects, it is extremely hard to gain a clear picture of what engagement looks like in particular subject areas.

Adding to the complexity is that students' engagement does not manifest itself in a uniform way (Nystrand & Gamoran, 1991, p.263) i.e. not all children who are engaged in an English will necessarily display the same outward indicators of engagement. Thus far, finding a study which explores the differences and similarities between the core subjects has proved fruitless, yet not only is such research necessary, particularly to primary school teachers who teach all three subjects, it is also clear that integrating differences within each subject is also important. What is clear is that initiatives, whether formal or informal, appear to have an influence on engagement, leading to improved performance, in terms of all children's personal and academic attainment. As Marks states:

> "*Although research examining the effect of engagement on achievement is comparatively sparse, existing studies consistently demonstrate a strong positive relationship between engagement and performance across diverse populations."*
>
> (Marks, 2000, p. 155)

This, of course, is good news for teachers, for despite the many influences which cannot be controlled by schools, such as socioeconomic status and gender differences (Finn, 1989, Finn & Cox, 1992; Lee & Smith, 1993, 1994), classroom practices can combat

disengagement. Practices which appear to successfully increase engagement can be broadly categorised as authentic learning experiences (Marks, 2000), positive student/teacher relations (including level of teacher support) (Marks, 2000; Klem & Connell, 2004; Baker, Grant & Morlock, 2008), and level of challenge (Fredricks, 2004). However, engagement is also very much influenced by the individual, and 'largely a function of individual student characteristics and experiences' (Marks, 2000, p.166). In order to embark on a study which examines engagement between and within selected core subjects, an exploratory study is needed to gain an insight into primary teachers' views on what engagement in each of the three subjects looks like and how they gauge it, as there is no such existing study which currently provides an insight.

A popular area of study has been engagement in learning science. Engagement in other areas, such as English and mathematics, has consistently attracted much less attention. Given this, it would be potentially worthwhile and practically useful to give some attention to engagement in the two neglected, but important, core subjects of English and mathematics. Furthermore, the literature shows the research at the primary school level is much more limited than with older students.

To that end, it would be particularly useful to know what engagement means to teachers, as they are the agents who will (or will not) make provision for it. The review of the literature, therefore leads to three key research goals:

[1] What are primary teachers' notions of engagement?

[2] What informs these notions of engagement?

[3] How do they affect the strategies they use in the classroom?

Within each of these there will be a range of further questions to be explored and the methods used will facilitate this exploration. These are discussed in the next Chapter on Aims, Questions and the General Approach to the Study.

Chapter Three:
Aims, Questions, and the General Approach to the Study

3.1 Introduction

Having completed a wide-scale review of the engagement literature (Chapters One and Two), this chapter discusses the methods used to gather empirical data from primary school teachers in England. The chapter begins by stating the research aims and the research questions posed to meet these aims, before providing an overview of how, and why, three research stages were used to address the research questions. Ethical issues are also discussed.

3.2 Research Aims

A thorough review of the engagement literature has shown engagement to be a diverse and problematic construct in education. As Chapter Two illustrated, research has demonstrated a strong link between engagement, particularly intellectual engagement, and attainment. Meanwhile, a growing acknowledgement of the role of emotions in the classroom (Grams & Jurowetzki, 2015; Newton, 2017) points to intellectual engagement in a lesson or during a topic

as being influenced by emotional disposition (Kandel, 2006). This in part, may be due the relation between recall of information and a learner's initial emotion response. Empirical data collected for this study is to inform the understanding of primary school teachers' conceptions of pupils' engagement as well as strategies they use to engage pupils, taking into account classroom variables, research aims that currently do not feature in the vast literature on engagement. This study is also interested in whether particular conceptions of pupil engagement relate to pedagogical strategies and if certain strategies are more successful than others in engaging pupils. Although the literature points to engagement as being multidimensional (Martin, 2008) it is thus far unclear whether teachers share this view. Also overlooked, has been whether a predominant category of engagement (intellectual, emotional, behavioural, social, physical and cultural) is implicitly, or explicitly, at the forefront of teachers' perceptions of engagement, and how, if at all, these perceptions influences their classroom strategies. Integral to understanding teachers' perceptions of engagement is acknowledging that several variables may affect their thinking and subsequently their strategies. Methods detailed in this chapter address certain key variables which may influence teachers' perceptions and strategies, specifically: children's ability level; the pupil's gender; and National Curriculum subject. Such methods will directly address the research questions. Due to a lack of research into what engagement looks like in a particular subject a synthesis of existing research analysing if, and how, engagement varies between subjects is not possible (see Chapter Four). This study, by focusing on specific primary teachers, allows for the same teacher to express their views, and report their practices, across the curriculum. It also extends to observing teachers' practices in mathematics and English with the aim of establishing the validity and reliability of an engagement measuring tool which is able to be used across the primary National Curriculum by both researchers and practitioners.

The general research aims of this thesis can summarised as:

- to explore teachers' conceptions of engagement;
- to gain an insight into whether, and if so how, teachers' notions affect teachers' engagement pedagogies;
- to determine whether teachers' conceptions and pedagogies change depending on particular variables;
- to consider how teachers recognise engagement

3.3 Research questions and timeline

3.3.1 Research Questions

The overarching themes of this study are; teachers' notions of engagement, adaptations/discriminations of their pedagogies of engagement, recognition of engagement and teacher development. These themes underpin the development of three main research questions, which are:

[1] What are primary teachers' notions of engagement?

[2] What informs these notions of engagement?

[3] How do they affect the strategies they use in the classroom?

3.4 Underlying philosophical viewpoint

Previous chapters have revealed the need to clarify what is meant by 'engagement' in classroom settings to prevent it becoming a 'fuzzword' in education (Vuori, 2014). There is a particular need to clarify what engagement looks like in primary classrooms as this phase of education has been largely overlooked by researchers (see Chapters Three & Four). The link between engagement and attainment is often alluded to, but a review of the literature has shown that it is specifically intellectual and emotional engagement that can lead to higher attainment levels. In the primary setting especially, both these categories of engagement may be stimulated by social interaction. Pupils may enter the classroom with an existing emotional disposition and intellectual capacity, but these will have already been influenced by social interaction (Rogoff, 1990; Berk, 2009). Once in the classroom environment, social interactions with teaching and support staff, as well as peers, continue to shape their engagement levels. Morrison suggests that educational research has a twin focus: attitudinal – 'a distinctive way of thinking about educational phenomena', and action – a systematic means of investigating them (Morrison, 2002, p.3). This study too has a twin focus. The first focus involves understanding teachers' perceptions of engagement, analysing whether their pedagogical strategies are influenced by these conceptions and, in turn, affect engagement levels of pupils. Its second focus recognises that systematic means of investigating these factors are needed.

These means, or methods, will be detailed in this chapter, but before doing so it is important to state the underlying philosophical viewpoint underpinning this thesis.

The researcher's worldview, or paradigm, will impact directly on the overall research approach that they will take since if they subscribe to the scientific approach it is inevitable that both their methodology and methods will reflect those beliefs (Brundrett & Rhodes, 2013). Paradigms have been defined as a cluster of beliefs and dictates which for a scientist in a particular discipline influence what should be studied how research should be done, and how results should be interpreted (Bryman, 2004, p. 453). Although Scott and Morrison (2006, p.170) argue that four paradigms exist in education research. It is generally accepted that two dominate the field, and can broadly be categorised as aligning with either positivist or interpretivist paradigms. Positivism has been defined as a 'scientific method' or 'science research', is "based on the rationalistic, empiricist philosophy that originated with Aristotle, Francis Bacon, John Locke, August Comte, and Emmanuel Kant" (Mertens, 2005, p.8). Positivist research approaches are characterised by the collection of data which can be statistically analysed. Interpretivist approaches to research have the intention of understanding "the world of human experience" (Cohen & Manion, 1994, p.36), working on the assumption that "reality is socially constructed" (Mertens, 2005, p.12). Such a stance means interpretivist research is often characterised by qualitative methods in order to yields the views of participants in the situation being studied (Creswell, 2003, p.8).

This study is largely underpinned by the interpretivist paradigm, demonstrated to some extent by the use of phenomenography in Stage One, but also in the classroom observations carried out as an exploratory exercise and described in Chapter Six. The development of the phenomenographic approach in the early 1970s has been deemed a reaction against, and an alternative to, the then dominant tradition of positivistic, behaviouristic and quantitative research (Svensson, 1997, p.171). However, Marton appears to dismiss the idea of dividing research along interpretivist (subjective) and positivist (objective) lines, stating:

> *"There are not two worlds: a real, objective world, on the one hand, and a subjective world of mental representations, on the other. There is only one world, a really existing*

world, which is experienced and understood in different ways by human beings. It is simultaneously objective and subjective."

(Marton, 2000, p.105)

This study is concerned with understanding the 'existing world' of engagement in the primary classroom, whether that be through the teachers' thinking or doing and how the pupils respond. Therefore, it aligns with Marton's view that to discover the real world both 'objective and subjective' methods can be used and although traditionally interpretivist methods are used, so too, in Stage Two is a traditionally positivist methods used. This second stage involved the collection of data on large-scale, providing opportunities for statistical analysis, which often features in positivist approaches. However, the fusion of both ontological views can be seen within this stage. For, while the large-scale questionnaire produced statistical data, it must be acknowledged that many of the questions pertain to teacher's subjective mental representations. This study agrees with the view that 'significant overlap between all paradigms apart from the 'hard-line' positivist approach (Brundrett & Rhodes, 2013, p.17) and demonstrates this with the use of mixed methods.

3.5 Research Design

A vast amount of literature exists regarding pupil engagement, as discussed in the earlier chapters. Intellectual engagement has remained a consistently significant trend in the literature, as demonstrated by the Google scholar trend search, and existing measurement tools used by teachers in previous studies demonstrate that teacher's role in assessing engagement has been recognised. However, these tools have been devised without first obtaining teachers' views on engagement and the practical steps they take to engage learners i.e. teachers' perceptions and strategies. It has already been recognised that in order to increase levels of student engagement, efficient methods of measuring student engagement must first be identified (Fredricks *et al.*, 2011). This study's two-stage approach using mixed methods allows for a more thorough exploration of engagement in the primary classroom with the aim of deigning such a measuring tool. These stages are detailed in this chapter and incorporating both qualitative and quantitative methods. The qualitative methods, namely interviews (Stage One) and observations (see Chapter Six), are designed to meet the standards detailed in Spencer, Ritchie,

Lewis, and Dillon's framework for evaluating qualitative research (Spencer, *et al*., 2003). Their framework, constructed having reviewed 29 existing frameworks, denotes four research characteristics that embrace the central principles for quality in that a quality piece of research must be: (a) contributory in advancing knowledge, (b) defensible in design in addressing the research questions, (c) rigorous in conduct of a systematic and transparent research process, and (d) credible in claim through well-reasoned and plausible arguments proffered by evidence derived from the study (Spencer *et al.* in Sin, S. 2010). Stage Two, a wide-scale online questionnaire could be regarded at a quantitative approach and yielded data from 600 Key Stage Two teachers, from which statistical analysis could be undertaken. However, as is discussed later in this chapter, the questions answered were largely generated to understand teachers' ways of thinking, in the qualitative tradition.

The mixed-methods approach of this study is commonly used in education research and nearly always entails the collection and analysis of both quantitative and qualitative data (Niglas, 2004) and this was considered when designing each stage of data collection detailed in this chapter. By combining both qualitative and quantitative methods, the analysis of results and subsequent discussion will incorporate individual teachers' expressed conceptions and strategies along with vignettes obtained from classroom observations (qualitative methods) with the large data set obtained from the online questionnaire (a quantitative method). Justification for combining qualitative and quantitative methods has come in the form of various models and strategies (Flick, 2014, p.526). In this study, it was decided that the qualitative methods would provide a rich and deep description of the research environment to understand teachers' conceptions of engagement and strategies (Brundrett & Rhodes, 2013,p.14), while the addition of the questionnaire would provide larger-scale data which could be used to gain further insight regarding these conceptions and strategies, and their potential relationship with certain variables (such as, experience, first degree and job satisfaction level).

The research design also incorporates both 'first-order perspective' and 'second-order perspective'. Marton and Booth (1997) associated the first and second order perspectives as being orientated towards different objects of research. First-order perspective aims to describe various aspects of the world and second-order perspective describes people's experience of

various aspects of the world. This idea echoes early writings of Marton (1981, p.178) who observed that research approached from a first-order perspective was concerned with how something really is while the second-order perspective is concerned with how a phenomena is conceived (Yates, Partridge & Bruce, 2012, p.99). The initial stage of data collection, Stage One, teacher interviews, can be described as investigating 'second-order perspectives', as it is designed to gather their perceptions of the realities of engagement, including; how it is achieved, whether it is necessary for students to succeed and which subjects are most and least engaging. The same applies to Stage Two, the questionnaire. Documenting the reality of engagement in the classroom, or, first-order perspective underpins the methods used in the exploratory study described in Chapter Six. Combining both first-order and second-order the study is designed to document both perceptions – teachers' conceptions of engagement - and realities - teachers' classroom strategies to engage. Additionally, the design then allows scope to compare the two, potentially revealing patterns and discrepancies between what teachers say they think, what they say they do and what they are observed to do.

3.6 Summary

This chapter has outlined the broad aims, research questions, and underlying thoughts about how these will be answered.

By dividing the research into two distinct, but complimentary, stages, all the research questions can be answered. As Table 3.2 illustrates, certain questions will be answered from data gathered from more than one stage, allowing for triangulation in the form of an overall discussion (see Chapter Seven - Overall Discussion). Additionally, it should be noted that Stage One shaped some of the survey questions included in Stage Two and both Stages One and Two, prompted the need for an exploratory study to observe whether teachers' notions and expressed strategies were reflected in the classroom.

Table 3.2 Summary of the research questions and the methods used for data collection.

Stage:	**Question:**	**Method**	**Location in the thesis:**
One	1. What are primary teachers' notions of engagement?	Face to Face Interview	Chapter Four
Two	1.What primary teachers' notions of engagement? 2.What informs these notions of engagement?	Questionnaire	Chapter Five
Exploratory Study	3. How do they affect the strategies they use in the classroom?	Observations	Chapter Six

3.6.1 Timeline

The timeline of data collection is particularly important in this study. It was recognised that the school year can shape teachers' perceptions and strategies, as well as pose practical problems in terms of scheduling issues in schools. For instance, in the first half term of the academic year, teachers are still learning about the children in their class. Stage One, face-to-face interviews with teachers, was therefore timed to take place towards the end of the Autumn Term, when teachers had spent at least twelve weeks with their class, allowing them to draw upon recent experiences with a class they knew. It was also decided that the timing of Stage Two, an online questionnaire, needed to be carefully considered. In order to maximise the comparability of responses, it was decided that the questionnaire would only be available for one week, from Friday March 16th 2018. This decision meant that as much as possible teachers were at that same stage in terms of:

- Knowledge of their class
- Tiredness levels of both teachers and pupils
- End of term commitments

Classroom observations, also took place within a particular timeframe. The summer term was chosen so that all teachers had known their classes for almost a full academic year (teachers

who had taken up their post after September 2017 were discounted). As with Stage Two, observing the teachers within a short time frame also meant teachers should be broadly experiencing the same levels of tiredness and seasonal commitments. Whilst school trips and some end of year events, such as sports days and transition days, take place in the summer term, observation days were arranged to ensure such events would not occur on the same day and therefore potentially affect children's and teachers' behaviours. Additionally, all stages of research were undertaken during the same academic year, 2017-2018 to ensure that the National Curriculum did not change during the data collection period, which could affect the teachers' perceptions and strategies (see Table 3.3 Timeline of study).

Table 3.3 Timeline of study

Stage:	Method	Dates
One	Face to face interviews with teachers	Ethical Approval – 11th November 2017
		November 2017- December 2017
Two	Online questionnaire	Ethical Approval - 14th March 2018
		Launched online - 16th March 2018
		Taken offline -23rd March 2018
Additional Exploratory Study.	Observation of teachers	Ethical Approval - 31st May 2018
		School observations – June - July 2018.

The following two chapters describe each Stage as discussed above; Stage One the phenomenographical study and Stage Two, the online questionnaire. A subsequent exploratory study using lesson observations is described in Chapter Six. Each chapter includes the methods, results and a brief discussion section before an overall detailed discussion forms the content of Chapter Seven.

Chapter Four:

Stage One

A phenomenographical study of some teachers' notion of engagement

4.1 Introduction

This chapter discusses the first stage of data collection, which will be referred to throughout the thesis as 'Stage One'. It begins by describing the phenomenographical approach which was used, before describing the practical stages of the face-to-face interviews. It then presents the results of the interview in relation to the research questions which were hoped to be answered, at least partly, in this stage are discussed in the Results section. A brief summary is included at the end of this chapter, however, an extended discussion relating to this stage and subsequent stages form the basis of Chapter Seven: Overall Discussion.

4.1.1 Phenomenography

A phenomenographic approach was used to gather teachers' views on engagement. Phenomenography is an approach that was designed to provide evidence of conceptions or notions of a phenomenon relating to thinking and learning (Marton, 1986, p.28). It is an

approach which is particularly suitable in Education, as it is more interested in the content of thinking than is traditional psychology, because it focuses on the content of thinking as opposed to the actual practices within the classroom. Phenomenography investigates the qualitatively different ways in which people experience or think about various phenomena (Marton, 1981, p.144) - in this case pupil engagement. It provides insights into variation, making it possible to develop a greater understanding of phenomena (Yates *et al*., 2012). Phenomenography should not be confused with phenomenology, the suffix -graph, denotes a research approach aiming at describing the different ways a group of people understand a phenomenon, as opposed to phenomenology, which, as the 'logos' suffix suggests, aims to clarify the structure and meaning of a phenomenon (Larsson & Holmstrom, 2009, p.550). Phenomenography allows not only the identification and exploration it also results in generalisable findings which may apply to a far larger number of teachers than simply those interviewed. The aim of Stage One was to gather teachers' notions of engagement, in order to uncover all the understandings teachers have of pupil engagement, a specific phenomenon, and to sort them into conceptual categories (Marton & Pong, 2005). A phenomenon can categorised in an infinite number of ways; the data yielded from Stage One for instance could, in theory, generate as many categories as there are teachers interviewed. However, in the process of creating meaning, only a limited number (usually two–six) of ways of understanding will remain (Uljens, 1996; Ekeblad, 1996). This has been confirmed in numerous empirical studies (Marton, 1996; Dall'Alba & Hasselgren, 1996). This study hoped to generate a limited number of categories of teachers' conceptions. As Marton states, a phenomenographic approach allows for this:

> *"Conceptions and ways of understanding are not seen as individual qualities. Conceptions of reality are considered rather as categories of description to be used in facilitating the grasp of concrete cases of human functioning. Since the same categories of description appear in different situations, the set of categories is thus stable and generalisable between the situations even if individuals move from one category to another on different occasions. The totality of such categories of description denotes a kind of collective intellect, an evolutionary tool in continual development."*
>
> (Marton, 1981, p.177)

Having identified these categories, each category can be explored in relation to several variables; subject, ability level of children, experience level of the teacher. Subsequently, different categories can be compared with each other. As phenomenographic findings provide

the collective variations of conception of the phenomenon rather than the conceptions of the individual participants (Marton, 1994) categories or types will consist of several teachers based on their responses or utterances during the interviews.

4.1.2 Some caveats and limitations

Marton claimed that results of phenomenographic studies can be generalised. This view has been supported by others (Alsop & Tompsett, 2006; Feldon & Tofel-Grehl, 2018). The sixteen teachers interviewed for Stage One were selected on the basis that they represented various level of experience, taught across all age groups found at primary schools and came from different undergraduate disciplines to ensure results were as comprehensive as possible. However, to further add to the robustness of the findings a second stage involving a large-scale questionnaire was devised to test the categories identified in Stage One (teacher interviews) this is discussed in the next chapter (Chapter Eight: Stage Two: A wide-scale questionnaire).

4.2 Method

Once ethical approval was granted by Durham University in November 2017, face-to-face interviews were carried out with sixteen teachers. There are several different types of interview that can be conducted: structured, semi-structured and unstructured. It is important that the type of interview chosen is aligned with the purpose of the research. Traditionally the interview of choice in phenomenographic studies *par preference*, is the open-ended interview. Larsson & Holstrom claim these interviews allow informants to speak freely about their experiences, giving concrete examples to avoid superficial descriptions about how things should be or ought to be (Larsson & Holstrom, 2004). However, because engagement is a notoriously vague concept (Ashwin & McVitty, 2015) it was decided that some form of guidance was needed from the interviewer.

4.2.1 Interviews

Semi structured interviews were used to probe teachers' understanding of engagement. This approach allowed for interviews to include six guidance questions (see Table 4.1 – Guidance Questions) as well as relevant follow-up questions to be asked, to fully understand teachers' answers. Semi-structured interviews provide flexibility for the interviewer to react to respondents' comments (Punch & Oancea, 2014, p.184). With a concept such as engagement, which is hard to both define and measure, interviews provide access to what is "inside a person's head" and increase opportunities to measure what a person knows and thinks (Tuckman, 1972) provide an ideal method for establishing teachers' perceptions and conceptions. The teachers' responses to questions based on these perceptions and conceptions have been termed 'teachers' expressed pedagogies' and it is this term that is used in some of the research questions.

Good practice in the design of interview questions is to ensure that they enable participants to describe and make sense of particular element(s) of their lives. The researcher should be wary of framing the research question in a way which reflects his or her own presuppositions or bias.

Table 4.1 Examples of guidance questions

Question 1	I'm interested in student engagement. What does it mean to you?
Question 2	What engages students?
Question 3	Can you give me an example of a lesson or activity when the class has been engaged?
Question 4	How do you know they are engaged?
Question 5	Does engagement 'look different' in maths/English/science?
Question 6	Do children have to be engaged to attain in you experience?

It is best practice to conduct a pilot interview to test the appropriateness of the questions and establish their clarity (Wilkinson & Birmingham 2003). In this study, a pilot interview was

conducted successfully and allowed the testing of both the six guidance questions and the audio recording equipment. The teachers found the six guidance and follow-up questions easy to understand and confirmed that the design was fit for purpose. Subsequently, during the interviews, all of which were carried out by the researcher, field notes were taken and all interviews were recorded on a digital recorder, allowing for interviews to be listened to and key statements to be transcribed (an example of the field notes can be seen in Appendix 2). Key statements were then organised into themes. A guidance sheet which included the six set questions ensured the same language was used in each of the interviews. The interviews took between fifteen and thirty five minutes, with twelve taking between twenty-five and thirty minutes, the time depending on the length of response and the number of follow-up questions that were asked. The interviewing process concluded after sixteen teachers had been interviewed and saturation point had occurred; that is to say that patterns in the interviewees' experiences were starting to recur. Bertaux describes how the researcher is surprised or learns a great deal from the first few interviews, but by the fifteenth interview, for instance, the researcher recognises patterns in the interviewees' experiences (Bertaux, 1981). Guest *et al*., suggests twelve interviewees belonging to a homogenous group is the required minimum amount for saturation to be achieved (Guest *et al*., 2006). In this study, it was found after twelve interviews patterns were beginning to emerge, four further interviews were conducted in order to confirm this judgment was accurate.

Phenomenography seeks to uncover different ways of understanding (Larsson & Holstrom, 2017, p.56) therefore once each interview was conducted and transcribed, analysis of utterances was undertaken in order to place responses onto a coding template (see below, *Development of the coding template*). From the coding template, categories of teacher were able to emerge which then informed the design of the questionnaire used in Stage Two (see Chapter Five).

4.2.2 Considerations for conducting interviews

Face to face interviews may provide difficulties for the researcher, one of which Wengraf describes as 'double attention' (Wengraf, 2001). This term is explained as:

> *"(the researcher) must be both listening to the informant's responses to understand what he or she is trying to get at and, at the same time, you must be bearing in*

mind your needs to ensure that all your questions are liable to get answered within the fixed time at the level of depth and detail that you need."

(Wengraf, 2001, p.194).

To mitigate the potential problems caused by double attention, all interviews were audio recorded so full attention could be given to what the teacher was saying, thus informing the most appropriate follow-up question. If notes were unable to be fully transcribed during the interview, the audio recording was able to be listened to post-interview.

A criticism of individual interviews is that the range of views and opinions is limited in scope (Denscombe, 2007). This study, by interviewing 16 teachers, alleviated this limitation by addressing scale, but also by selecting a variety of participants in terms of experience level, age and current year-group (see 4.2.3). Hammersley advises researchers to be aware of the dangers of using interview data and to exercise great caution in interpreting, using and drawing conclusions from them (Hammersley, 2003). A key reason for this is that that answers can be inconsistent; for example, people might say they do something different from what they actually do. O'Reilly (2005) argues this need not be problematic if the researcher adopts the view that interviews complement participant observations; interviews provide a structure of the community's rules and customs, while participant observation provides interpretation of rules in practice. However, he did not advocate abandoning all uses of interview data. This study acknowledges some of the limitations of interviews and has responded by methodically coding, categorising and analysing teachers' full responses and testing findings with two further stages of data collection.

4.2.3 The sample of teachers

Teachers were chosen on the basis that the sample would be broad in terms of age and experience and reflect the general teaching population. Of the 16 sampled teachers four were male; again this choice was made to reflect the gender balance of teachers within primary schools. Teachers worked in a variety of Year groups, geographical location and type of school to ensure that results were reflective of various primary settings teaching the English National Curriculum. An overview of the interviewed teachers is shown in Table 4.2.

Table 4.2 Details of the 16 sampled teachers

Teacher	***Gender***	***Years teaching***	***Age***	***Current year group***	***Type of school***	***Location***
1	Female	6	25-30	Reception/ Year 1	Faith school	North East
2	Female	3	36-40	Year 1	State	London
3	Female	1 (NQT)	25-30	Year 4	State	Midlands
4	Female	5	31-35	Year 5	Academy	North East
5	Female	32	55-60	Year 4/5	Faith school	North East
6	Male	3	25-30	Year 3	International school (following N.C.)	Spain
7	Female	15	36-40	Year 6	State	South East
8	Female	27	46-50	Year 3	Academy	North West
9	Male	8	25-30	Year 4	State	South West
10	Female	15	41-45	Year 2	Faith	Central England
11	Male	11	31-35	Year 4	State	South East
12	Female	7	31-35	Year 1	Academy	North East
13	Female	40	61-65	Year 5	State	North East
14	Male	25	46-50	Year 5	Faith	London
15	Female	6	25-30	Year 3/4	State	North West
16	Female	2	25-30	Year 2	State	Midlands

4.2.4 Development of the coding template

In order to analyse the data from the interviews a coding template was needed. Flick describes the coding process as:

> *"The core principle of coding and categorising is that parts of the data (e.g. a statement) are taken out of their context and groups with other bits of data (similar statements) and put in relations – categories, subcategories, etc."*
>
> (Flick, 2014, p.45)

The term 'template analysis' does not describe a single, clearly delineated method; it refers rather to a varied but related group of techniques for thematically organizing and analysing textual data (King in Cassell & Symonds, 2004). Before those statements can be organised a coding template is needed, in this study this is referred to as the *Table of teacher utterances.*

4.2.5 Defining priority themes

By defining priority or predetermined themes, time was saved in the overall coding process, ensuring that the timeline outlined on page was adhered to. Priority themes are often established using key concepts in a theoretical construct, in this case pupil engagement. The key concepts are often drawn from the research questions or literature review (King, 2012), in this study those key concepts had emerged from both, with the literature review generating themes 1 and 2 and the research questions generating themes 3 and 4 (see Table 4.3 Priority themes).

4.2.6 Transcribing the interviews

Field notes were taken during each interview on Microsoft Word. Following each interview, the audio recordings were played back and these initial notes were then supplemented in places to ensure important utterances were included (see Appendix 3 for an example of field notes from one of the interviews

Table 4.3 Table of Priority themes

Themes	**Statements/ Words**
Notions associated with engagement	Time on Task Effort Motivation Fun Excitement Challenge Relevance Practical
Indicators of engagement	Behaviour Eye Contact Body Language Asking and answering questions
Teachers' strategies	Rewards Planning Resources Humour Building relationships Questioning
1. Biographical information	Answers to specific questions
2. Variables	Ability Gender Family background Culture

).

4.2.7 Initial coding of data

Each interview was analysed in depth to search for the words or phrases relating to the priority themes. The 'find' tool in Word enabled the words document in Figure 4.4 to be quickly found in the transcriptions. This analysis was undertaken after each interview so that themes

that had been discussed by the teacher could be readily remembered by the researcher and quickly found. These words and phrases were then mapped in to an initial table of teachers' utterances.

4.2.8 Initial Table of teachers' utterances development

Prior to the interviews and a template was devised so that responses could be easily sorted into themes. The themes for this template were predicted by the researcher and based on the engagement literature and predicted answers to the guidance questions (see Table 4.4, below). It was expected that this table would evolve depending on teacher responses, the final, completed template with is shown in Table 4.5 Completed Table of Utterances.

Table 4.4 Initial Table of teacher utterances template

Interview	Enjoyment	Interest	Motivation	Participation	Challenge	Authentic	Emotional	Physical	Social	Behavioural Indicators	Types of Learning
1											

4.3 Results

Using the researchers' field notes, five distinct categories relating to teachers' conceptions of engagement emerged. These distinct categories will be referred to as Engagement Pedagogy Types, descriptors of each Type and their characteristics discussed briefly in this chapter and in more detail in Chapter Seven: Overall Discussion.

Due to the interviews being semi-structured, results are presented here as main themes which emerged from the interviews rather than by answers to each of the guidance questions as the nature of the interviews and the order of the questions was fluid. Additionally, as set out in Chapter Three, the interviews were designed to help answer Research Question 1. What are primary teachers' notions of engagement? In order to thoroughly answer this question, a series of sub-questions were asked:

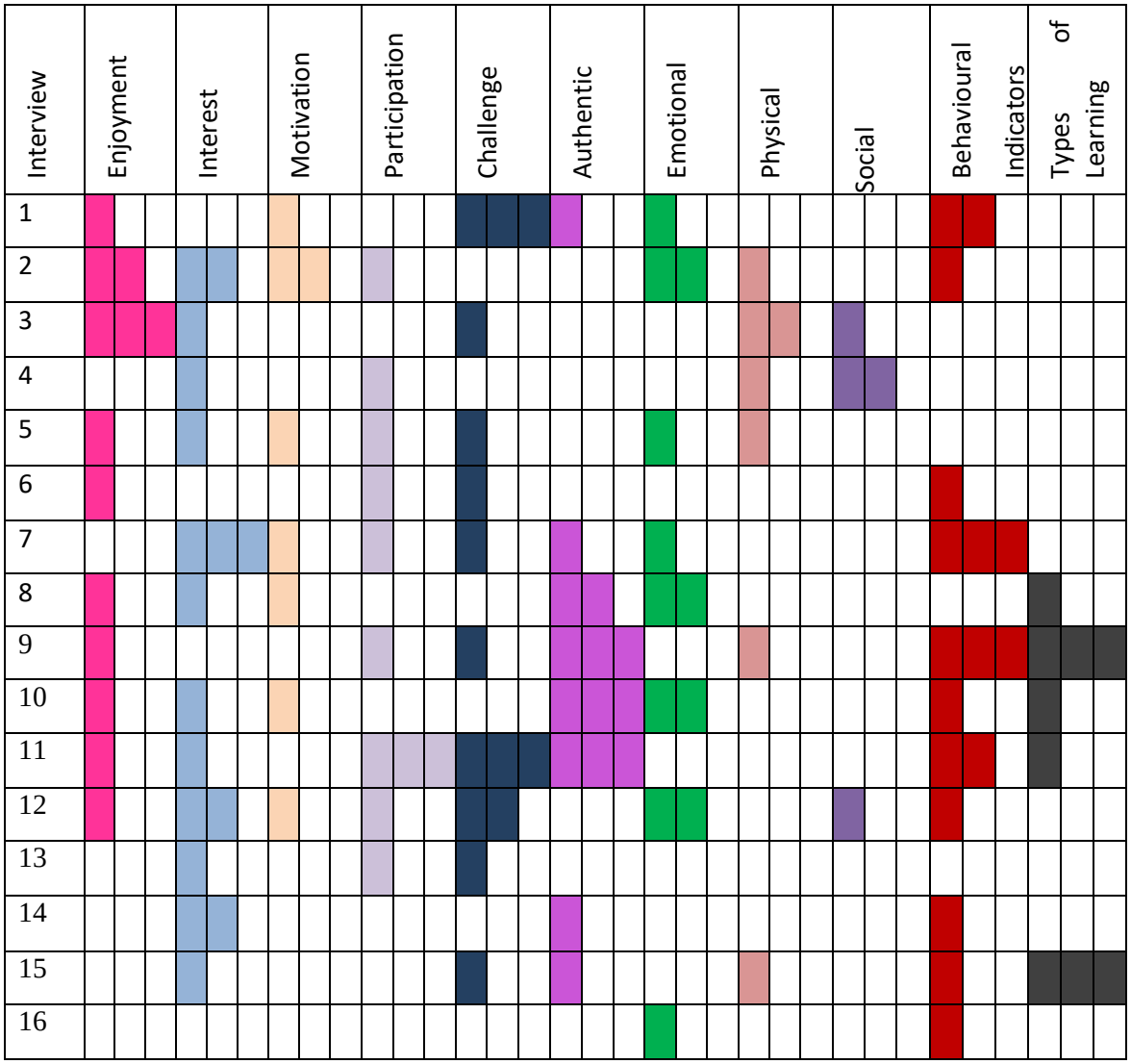
- What do teachers consider is engagement?
- What are teachers' expressed pedagogies of engagement (what they say)?
- Are there patterns/types of favoured engagement?
- Where does the teacher see the responsibility for engagement as lying?
- Does the expressed pedagogy of engagement change with subject (Mathematics/ English)?
- Does the expressed pedagogy of engagement change with children's ability?
- Does the expressed pedagogy of engagement change with children's gender?

The results section is therefore set out in a way that considers teachers' responses during the whole interview in relation to each of these research questions. Prior to discussing each question, Table 4.5 Completed Table of Utterances is included which provides an overview of the themes which emerged from each interview, followed by Table 4.6 Table of Compelling Statements, which provides pertinent quotes from interviews.

4.3.1 Completing the Tables of Utterances

The initial table of utterances was further developed to provide a visual aid to help understanding the key notions and strategies after additional themes emerged from each interview. The table was completed after all the interviews had taken place with results shown in Table 4.4 Completed Table of Utterances (below). For each time a notion or strategy, e.g. 'Enjoyment, 'or, 'Interest', was mentioned by the teacher a box was coloured. Some teachers mentioned the same theme two or three times during the course of the interview. For instance, in one interview, shown in Table 4.5 *a*s Interview 1, enjoyment was discussed at one point in the interview, whereas providing a level of challenge for the children was mentioned at three separate points throughout the course of the interview.

Table 4.5 Completed Table of Utterances



4.3.2 Construction of a Table of Compelling, illustrative examples of statements

A table of compelling statements was also compiled from the interview field notes. Pertinent comments from the teachers are organised into themes in the table; motivation, interest; behaviour/indicators; teacher's role, ability/mastery; and, types of learning. Some of these statements are also included as examples when discussing the interviews in relation to each research question.

Table 4.6 Table of Compelling Statements

Theme	Teachers' Statements
Motivation	"With the super star award reward system, they all seem to be fairly as motivated apart from one, who doesn't like any form of rewards. He will do things for group rewards but not rewards that are just for him." (*Interview 1*) "I think there are some children are naturally more intelligent that are like sponges but they still have to be motivated or they wouldn't attain as highly I suppose. They can still achieve but they would always achieve more highly if they were engaged and motivated to do it." (*Interview 2*) "I'm saying motivated a lot and it's not the same as engaged is it?" (*Interview 2*) "I think there are quite a few things (that motivate them), they have to be interested and see what's in it for them." (*Interview 5*) "External motivators are more effective for engaging children, lower done the school you focus more on positive behaviour whereas further up the school it's more negative, maybe at KS1 Where it becomes more of a reprimand." (*Interview 7*) "It's about wanting for themselves to get the most out of the lesson as they can." (*Interview 8*)
Interest	"I would say it's adapting your teaching style to suit children to what they can do, their interests and things really." (*Interview 2*) "I think it all comes down to whether they're interested in what they're doing." *(Interview 2)* "Children being excited and interested in what they're doing and having that hook and having everyone involved and wanting to learn and be there." (*Interview 3*) "…they (children) have to be interested and see what's in it for them." (*Interview 5*)

	"We did superheroes and it was a story wrapped up and they found it and the classroom was messed up as though the bad guys had come messed our class up and we drew wanted posters and they just assumed that, it came from them. Every morning they were asking if he had been back." (*Interview 7*) "I think if they don't have an emotional connection with the teacher they don't respect you so I they're not interested in a topic they don't care they are not worried about disengaging…We went to the transport museum and that got them really interested and I think visits at the beginning to launch a topic can work really well." (*Interview 8*) "Depends on the pupils but practical things seem to work better, make it fun and interesting especially in maths lessons." (*Interview 11*) "Interesting lessons (all engage pupils)… Measuring juice and linking it to Harry Potter and everything had to have links whereas here (current) they are interested in everything and easy to engage." (*Interview 12*) "Pupil interaction with the teacher, with the topics, how much they're interested in the topic and in the classroom." (*Interview 13*)
Behaviour/ Indicators	"And I look for their body language, upright smiling." (*Interview 1*) "I know when they're not listening, because they're sitting fidgeting or staring into space and I know when they're engaged when they're answering questions." (*Interview 2*) "(I know they are engaged when they are) sitting still, giving you eye contact and they just have that look about them!" (*Interview 5*) "Smiling and eye contact, mainly body language…Behaviour effects how well they engage." (*Interview 7*) "I think it's when you hear their discussions, making links across what they're learning, getting them to explain fully why things have or haven't gone wrong… Low level disruption is also must lower, finding excuses to chat or wander around the classroom." (*Interview 9*)

	"I think it's really good if they're in pairs as you can judge it on the conversation they're having, teacher can listen in and even if they're struggling with something they are trying to solve the problem and you can judge it by what they produce at the end….The proof is in the pudding." (*Interview 11*) "Nodding, looking at you, I walk around the classroom so looking at you, not playing with things, doodling and when it comes to tasks they know exactly what to do." (*Interview 12*)
Emotion	"Sometimes a silly voice or a joke can pull them in- that's a social and emotional thing." (*Interview 1*) "Maybe (the first) more so emotional because if they've not had breakfast we can give them breakfast but emotional they're not willing to concentrate on what's going on or what you're saying, when there's bigger things going on that's going over rule they fact you're trying to teach them, say, addition. It's not the ones with SEN it the one with difficult backgrounds, I think even the ones with SEN even if it's not the right answer they'll still try and engage if it's a motivating enough lesson." (*Interview 2*) "I think the emotional aspect isn't really looked upon but is really important but you spend so much time with these children and it may well be that children are disengaged because of what is going on at home. So if they don't think they can approach you, even if it is that they're tired or hungry it can affect them especially if there is higher level thinking involved." (*Interview 7*) "I think the child's mood that day could affect engagement, if you have a difficult home life that is going to affect your engagement. They might not have had any breakfast that's going to help…When they're in a good mood their more willing. I think the connection between emotional and intellectual engagement is quite strong." (*Interview 8*) "If you've had a hectic playtime that might impact on their engagement and when I as on a course recently they have addressed the issues that cause so psychologically engagement can impact." (*Interview 9*) "They have an emotional desire to do well and they want to beat their peers and themselves there's a sense of guilt if they don't do well." (*Interview 12*)

Teacher's Role	"The relationship with the teacher plays a huge part in engagement and that transition period when you meet them is so important and if the relationship isn't there it pre-determines behaviour." (*Interview 7*) "Sometimes it can depend on the child and their interests but if you have an engaging lesson it should appeal to all children." (*Interview 9*) "Teacher enthusiasm really effects engagement. If you aren't confident or getting at the right pace is key as well especially for the HA ability and you need to be confident for them to explore." (*Interview 9*) "Consistent approach clear expectations, interesting lessons (all engage pupils)." (*Interview 12*) "I think mindset and whole school attitude is a bigger thing than the lessons." (*Interview 12*) "The first two schools I worked at were really difficult to engage children, I had to be all singing and all dancing, loads of practical stuff." (*Interview 15*) 13. Pupil interaction with the teacher, with the topics, how much they're interested in the topic and in the classroom. (*Interview 16*)
Ability/Mastery	"Mastery level kids don't seem more engaged…I change the Level of challenge; it can be varied depending on ability." (*Interview 1*) "I think when you're weaker in a certain subject CC approaches it does make the lower ability or less engaged more confident and eagerness to be involved. Self-esteem is boosted too and that helps engage them." (*Interview 3*) "Only the very bright children seem to be able to pull it out of the bag and do well when they haven't really totally engaged but I think they can only do that for so long, so even if they can do it my class it would be rare for them to do really well in Year 6 SATS without fully engaging in the lessons, revision and during the tests." (*Interview 5*)

	"Something more challenging or new when they have to decide what to do with it that's when ….you're level of engagement needs to be high". (*Interview7*) "Teacher enthusiasm really effects engagement. If you aren't confident or getting at the right pace is key as well especially for the HA ability and you need to be confident for them to explore." (*Interview 9*) "Problems that stretch the HA work really well and they're deeply engrossed and the magic squares and puzzles. So (independent) tasks for HA might already be set up so they are engaged doing something and might not need the main input. It depends on how HA they are, if they're extremely HA they could possibly get away with it- G and T would still attain but then you're not being engaged appropriately. I gave one boy GCSE questions. But LA and MA got to be engaged to attain, especially if you want deeper learning rather than surface level." (*Interview 11*) "95% of the time, the exceptions are the ones who are super high ability and regardless of what happens in the classrooms they'll do it (hit the target) they know it already…The difficulty I have is that my school is 40 % greater depth so the difficulty is making it hard, making it difficult enough without making it impossible." (*Interview 12*)
Types of Learning (Rote/Deeper understanding etc.)	"When they're in a good mood their more willing. I think the connection between emotional and intellectual engagement is quite strong." (*Interview 8*) "I did a science experiment where we recreated the digestive system and they used junk modelling to see how it worked. And even some children that are SEN worked really well as a team did really well they could explain and understand what was going on and it stuck with them." (*Interview 9*) "If it sticks with them they can use it and apply that information later on, if they can retain it then they have actually engaged in it, when I do maths I revisit a topic and that's when I know they've been initially engaged." (*Interview 9*) "So in maths they might be able a method like column addition through repetition but when you move from concrete pictorial to abstract you are engaging them at a deeper level so they understand the learning behind the abstract." (*Interview 11*)

The findings of the teacher interviews are now discussed in relation to Research Question 1. What are primary teachers' notions of engagement?

4.3.3 What do teachers consider is engagement?

Although some teachers explicitly commented that defining engagement was difficult, all teachers attempted to define it. Their definitions largely fell into three groups; (i) engagement as ensuring children staying 'on task' during lessons; (ii) engagement as positive reactions to school or the lesson activity; and (iii) engagement as challenging pupils to think more deeply. The first two definitions of engagement were most common. None of the teachers spoke of different categories of engagement, yet, often, these three groups of definitions were linked to a particular category of engagement. For instance, teachers who associated engagement with staying on task often described incidents of behavioural engagement, with comments in including:

> *"You know the class are engaged when they're sitting still, giving you eye contact and they just have that look about them!"*
>
> (Interview 3)

> *"Nodding, looking at you, I walk around the classroom so looking at you, no playing with things, doodling*"
>
> (Interview 12)

> *"When they're sitting quietly on the carpet and aren't distracted you know they are engaged"*
>
> (Interview 16)

Teachers who associated engagement with the children reacting positively to staff, pupils or the lesson activity gave examples of engagement that the literature would consider either social, emotional, or, cultural engagement; and sometimes a combination of two or all of these categories. Comments included:

"The relationship with the teacher plays a huge part in engagement and that transition period when you meet them is so important and if the relationship isn't there it pre-determines behaviour."

(Interview 7)

"Engagement is when they feel part of the school community; get on with their friends, the teachers and identify with the whole school."

(Interview 14)

Teachers who attempted to define engagement as providing children with a level of challenge, where those seemed to be prioritising intellectual engagement. These teachers made comments such as:

"Something more challenging or new when they have to decide what to do with it that's when ….you're level of engagement needs to be high".

(Interview7)

"Problems that stretch the HA work really well and they're deeply engrossed and the magic squares and puzzles. So (independent) tasks for HA might already be set up so they are engaged doing something and might not need the main input."

(Interview 11)

4.3.4 What are teachers' expressed pedagogies of engagement (what they say)?

Whilst there was a general feeling amongst teachers that children were more likely to engage if they were enjoying and interested in the topic they were studying, how this enjoyment and interest was generated varied. ~~S~~several teachers placed a considerable emphasis on the link between classroom behaviour and engagement rather than linking engagement to enjoyment and interest. These views appeared to determine which pedagogical approach the teacher used in engaging their class. Those teachers who associated engagement with enjoyment and/ or interest could be divided into four categories; those that tried to generate a sense of fun and excitement in the children; those whose expressed pedagogy was centred around problem solving activities; teachers who used practical and hands/ on activities; and, those who allowed children choice in their topic or activity and provided them with opportunities for independent

learning. A fifth group of teachers had an expressed pedagogy of engagement which relied upon on a reward system to motivate the children to engage; these teachers seemed to place a heavy emphasis on behavioural engagement. These five pedagogies are discussed below and in Chapter Seven: Overall Discussion.

In addition to these five categories, the majority of teachers also said they felt generating a positive classroom environment was important in engaging children, as were good relationships and knowledge of the children's needs and interests. Considering the amount of literature focusing on teacher- student interactions, it was somewhat surprising that none of the teachers spoke about it as being their predominant strategy, nor was it discussed frequently enough for it to emerge as a pedagogical category.

4.3.5 Are there patterns/ types?

Among the 16 interviewees, there appeared to be a variety of pedagogies expressed. These pedagogies ranged from ones aimed at maintaining a calm classroom environment through rewarding good behaviour to those which provided children with the chance to make choices regarding what they learnt whilst still meeting the demands of the curriculum.

Analysis of the interviews revealed the interviewed teachers fell in to five different groups or categories, with each group having a different approach to engaging children. All these teachers implicitly or explicitly acknowledged the needs of the learners, yet there as variations in their responses in terms of where the onus of responsibility lay in meeting these needs. Some teachers appeared to be more focused on cognitive needs, while others spoke more about the emotional needs of learner. The categories which evolved from the iterative sort of the data pool were as follows:

Category 1:

Identifying label: Fun and exciting

Description: Teachers in this category claimed to make lessons fun and to arouse excitement lessons to engage their pupils.

Examples from the data pool: Teachers in this category talked of using 'fun (approaches) so the children's imagination runs wild' (Interview 2) and mainly saw the onus of responsibility for engagement in lessons was on the teacher, 'You have to work hard to think of fun activities for them to do or there's no point' (Interview 3).

Category 2

Identifying label: Problem solving

Description: Teachers in this category claimed to set problems or challenges to engage children.

Examples from the data pool: Teacher's in this category described how planning lessons which involved problem solving as being the most engaging, 'I start with a problem or misconception and they have to try to unpick it' (Interview 9). There was a general feeling that children were engaged when activities were challenging, 'Problems that stretch them engage them' (Interview 11).

Category 3

Identifying label: Reward Systems

Description: Teachers in this category claimed to mainly engage children through the use of extrinsic rewards.

Examples from the data pool: Teachers in this category spoke of how they found using a reward system as their main strategy to engage children, 'With the super star award reward system they all seem to be fairly motivated'. These teachers talked of how children were motivated to engage due to the particular reward system they used, 'they're desperate to be at the top of the leader board so they will stay on task and get it (the task) done' (Interview 16).

Category 4

Identifying label: Practical/ hands-on

Description: Teachers in this category claimed to mainly engage children through practical or 'hands-on' activities.

Examples from the data pool: Teachers seemed confident that such approaches engaged the whole class, 'anything that is practical and hand on they are more likely to take an interest in' (Interview 1), 'anything that's got practical things' (Interview 4). These teachers felt practical activities were more interesting and interactive, 'More hands on activities especially with very young children they need something sensory or you can talk at them all you want but they will be less engaged' (Interview 7).

Category 5

Identifying label: Independent, child-led activities or topics
Description: These teachers described lessons where the children were encouraged to work independently and with minimal support from the teachers as being the most engaging.

Examples from the data pool: One teacher recounted an activity where 'the children were really independent and focused on their design' and talked of how a lesson had to be 'something they were interested in' in order to be fully engaged (*Interview 5*). Choice regarding the activity or topic was felt to boost independence and engagement, 'If they pick their own topic it motivates even the ones that less motivated' (*Interview 10*).

4.3.6 Where does the teacher see the responsibility for Engagement as lying?

Many of the teachers were enthusiastic when describing lessons which they felt had engaged children and the steps they had taken to make the lesson engaging. Such enthusiasm indicated that that they saw, at least in part, the onus of responsibility as lying with themselves. Some teachers described examples of when they put extra effort into the planning and/or delivery of lessons to engage children, particularly those children who they felt were at risk of disengagement; examples include:

> *"You really have to make an effort with some of the children and think of teaching in a way that will hook them in"*
>
> (Interview 14)

A quarter of the teachers said they felt parental attitudes to teachers and education more generally were responsible for engagement, or more specially, disengagement. With comments including:

"It is definitely harder to engage them when you no their parents don't really care about how they're doing in school; learning wise or behaviour wise."

(*Interview 15*)

"If the parents don't value education, it seems less likely the kids will and I think that has an effect on how engaged they are going to be in lessons and school generally."

(Interview 16)

Although none of the teachers expressed the view that the onus of responsible lay on the child, several felt that some children were more naturally inclined to engaged than others.

4.3.7 Does the expressed pedagogy of engagement change with subject (Mathematics/ English)?

When discussing engagement in relation to different subjects, none stated that they changed their engagement pedagogy with the subject. Generally, however, they did feel that some subjects were more engaging than others. Half of the teachers felt that subjects which allowed for more physically active opportunities were more engaging. For this reason, they cited subjects, such as Art and Physical Education as being amongst the most engaging subjects at Primary school. In terms of the core curriculum, science was generally thought to be the most engaging, again because they felt it allowed for children to be more 'hands on'.

"Physical activities is something you can do a lot of in something in science."

(Interview 1)

"I suppose in Science we do more practical stuff which they seem engaged by"

(Interview 13)

"There are more hand on opportunities in Science compared to Maths and English and that engages the class."

(Interview 15)

One teacher, observed, “We don’t do Science as often and we do practical things more often than in the others so I suppose the novelty factor gets them engaged in that” (Interview 5) suggesting that it was the rarity of being taught the subject, rather than the subject itself, which led to the children being engaged. Another reflected, “in Science they can think it is fun but I don’t know how much they’ve actually learnt and engaged.” (Interview 9), inferring that enjoyment may not necessarily lead to intellectual engagement.

There was no consensus amongst teachers in terms of which of the core subjects was most or least engaging. However, there was a general agreement that subject area could be influential. Firstly, some teachers felt that curriculum subject could influence children’s engagement levels due to a child’s feelings toward that particular. Comments from teachers included:

> *“One child is high in Maths and English, but better at the latter so is less engaged in maths.”*
>
> (Interview 9)

> *“If a child is better at English they will be more engaged with it, very few children are as good at all three subjects so their engagement varies.”*
>
> (Interview 13)

These teachers, and others, felt that children’s perceived ability and self-efficacy in a subject had a direct impact on their engagement in that subject; a child who felt confident in a particular subject was more likely to be engaged during those lessons. More teachers felt that mathematics, rather than English, leant itself more readily to activities which were more engaging:

> *“Science and Maths are similar as they involve a lot of practical lesson and then they are working in small groups, Science they are really engaged.”*
>
> (Interview 11)

> *“The English Curriculum is quite dry at the moment because of all the SPAG (Spelling, Punctuation and Grammar). I don’t think it’s very engaging”*
>
> (Interview 15)

However, three teachers found that children were inclined to have a fixed mind-set in terms of their mathematical ability and therefore felt it was harder to engage children in mathematics if they already had negative feelings towards the subject due to their lack of ability.

Interestingly, none of the teachers said their pedagogy of engagement changed depending on which subject they were teaching.

4.3.8 Does the expressed pedagogy of engagement change with children's ability?

It was hoped that face-to-face interviews could be used to determine whether teachers' attitudes towards engagement varied depending on the ability of level of the pupils they were teaching. Interviews revealed that half of the teachers felt that highly able students did not need to be engaged to attain during lessons. Ability level had not featured in the guidance questions as it was felt that if there were genuine differences in attitudes and strategies amongst teachers depending on the children's ability level this would be something they would mention unprompted by the interviewer. The relationship between engagement and ability was indeed a key feature in teachers' responses, in particular, to the question, *'Do children have to be engaged to attain?'* Answers to this question included:

> *"Yes I think so. Only the very bright children seem to be able to pull it out of the bag and do well when they haven't really totally engaged but I think they can only do that for so long, so even if they can do it my class it would be rare for them to do really well in Year 6 SATS without fully engaging in the lessons, revision and during the tests."*
>
> (Interview 5)

> *"No. If they are really capable, bit arrogant some of them can be really enthusiastic but some can be disengaged but have enough fluency to just pick it up when they need to. I think it comes down to the task and if it is differentiated properly the LA (Lower ability) can disengage and they can be pushed too much and lose interest."*
>
> (Interview 6)

> *"It depends on how Highly Able they are, if they're extremely 'HA' they could possibly get away with it- G and T would still attain but then you're not being engaged appropriately. I gave one boy GCSE questions. But LA (Lower Ability) and MA (Middle Ability) got to be engaged to attain, especially if you want deeper learning rather than surface level."*
>
> (Interview 7)

"95% of the time, the exceptions are the ones who are super high ability and regardless of what happens in the classrooms they'll do it (hit the target) they know it already."

(Interview 12)

These responses were typical of approximately half of the teachers interviewed who felt that Higher Ability (HA) children did not need to be engaged to attain. For these teachers, their understanding of engagement in learning seemed to be closely linked to children's effort in learning e.g. If a child's ability is high enough for them not to put effort into their work and still attain the learning outcome, the child does not need to be engaged in their learning. This view indicates a confusion between mental engagement and mental effort. Interestingly, with regards to Lower Ability (LA) children teachers tended to view engagement as more important, although, as the second comment (above) taken from *Interview 6* demonstrates, engaging these learners did not seem to mean challenging them. The teacher who participated in *Interview 6* felt that 'pushing' children of lower ability could disengage them and their engagement strategies for these children tended to focus on strategies to encourage behavioural rather than cognitive engagement. This approach was shared by several other teachers, as shown in the following comments:

"If a child hasn't got the ability and you keep encouraging them they can get resentful."

(Interview 14)

"With some on the Lower Ability kids it's just about making sure they aren't being disruptive rather than trying to give them challenging tasks – it would just be too much (for them)."

(Interview 4)

These comments suggest that some teachers felt effort was not required for Lower Ability children.

4.3.9 Does the expressed pedagogy of engagement change with children's gender?

Teachers' expressed pedagogy did not change with the children's gender. Indeed the subject of children's gender did not feature in most of the interviews. Three of the teachers mentioned that they had earlier experience of working in single-sex schools, but none of these

teachers said they changed their engagement pedagogy during their time at these schools. Meanwhile, although a few teachers said they were mindful of ensuring topics appealed to both boys and girls, they did not say their pedagogical approach changed, as illustrated by these comments:

> *"I would say the topics that we choose are quite good (at engaging the children) because we were focusing quite a bit on boys writing and we were doing quite a bit on Space that's worked a lot because that's kind of tailored to them. Obviously not to make it sexist, the girls seem to be more engaged with story writing."*
>
> (Interview 2)

> *"Boys might love a superheroes topic but the next topic might be fairy tales which more of the girls will like."*
>
> (Interview 3)

These comments demonstrate an awareness of how different interests between boys and girls can affect engagement, although teachers seemed to do little about other than alternate topics. The quotation from Interview 2 (above) also aligns with research conducted in Australia that found that school-related intrinsic motivation was more important for school achievement for boys than for girls (Fruedenthaler *et al.*, 2008). The teacher chose Space because it was a topic which she knew would interest the boys in their class. The girls in the class were engaged by the storytelling aspect of the topic and were engaged despite the teacher recognising it was not one of their predominant interests, which indicates the teacher believed that liking what they are doing is particularly important for boys, as argued by Freudenthaler (Fruedenthaler *et al.*, 2008).

4.3.10 Additional Results

None of the teachers who were interviewed used the terms 'cognitive engagement' or 'intellectual engagement'. However, when discussing lessons, or particular activities, in which they considered the children to be engaged, some teachers made comments which demonstrated they were using approaches which are conducive to stimulating intellectual engagement. Such comments could be grouped into two categories, reflecting the importance of:

1. The lessons having an appropriate level of challenge for all children.

2. The ability of topics/activities to stimulate further enquiry.

In relation to the first category; some teachers recognised the importance of ensuring activities would mentally 'stretch' children, such comments included:

> *"Sometimes a bit of mystery creates a challenge like a game that engages them."*
> (Interview 9)

> *"Engagement is making sure it's challenging enough and active rather than having passive learners."*
> (Interview 11).

> *"If a lesson is too easy they get bored, if it's too hard they give up"*
> (Interview 15).

Meanwhile comments relating to the ability of topics and activities to stimulate enquiry included:

> *"When they are really interested in a topic they get really involved and invested it, you can see their minds ticking away and know they're engaged."*
> (Interview 6)

> *"If they're not interested in a topic they don't care they are not worried about disengaging. We went to the transport museum and that got them really interested and I think visits at the beginning to launch a topic can work really well."*
> (Interview 8)

> *"(Engagement is high when you) start with a problem or misconception and trying to unpick it."*
> (Interview 9)

Findings from the interviews, therefore suggest that although teachers do not appear to have any theoretical underpinnings to approaches which can generate intellectual engagement, some are certainly using informal, perhaps unconscious, pedagogies which can support this type of engagement.

As with comments associated with cognitive engagement, teachers did talk about emotional engagement, but did not use the term 'emotional engagement'. Teachers' comments regarding emotional engagement, were grouped into three categories reflecting the perceived importance of:

1. The general emotional wellbeing of children as influenced by home life, including:

> *"The ones that stand out are the ones that have troubles at home, a difficult background. So you can see that their minds are elsewhere but I see that more of a challenge so that I try and find ways to engage them, maybe one to one."*
>
> (Interview 2)

> *"I think the child's mood that day could affect engagement, if you have a difficult home life that is going to affect your engagement. They might not have had any breakfast that's going to help."*
>
> (Interview 8)

2. Transient emotions of the children influenced by physical factors, such as hunger, illness and fatigue, such as:

> *"Children have bad days just like adults if they're feeling unwell, their behaviour changes, they're listening skills and social skills aren't there they're not as engaged."*
>
> (Interview 7)

3. Transient emotions of the children triggered by events at school, in or outside the classroom, such as this comment:

> *"You can always tell when there's been some incident during lunch because the children are unsettled when they come back into class."*
>
> (Interview 14)

These comments indicated an awareness of how basic emotional needs need to be met before children can focus of engaging with lesson activities. Although none of the teachers mentioned Maslow's *Hierarchy of Needs* (Maslow, 1943), their comments reflected his hierarchy. Many of the teachers spoke about how engaging children was more difficult, and sometimes impossible if their basic physiological and emotional needs had not been met.

When asked how they measured engagement teachers tended to say they used body language with comments including:

> *"And I look for their body language, upright smiling."*
>
> (Interview 1)

"Smiling and eye contact, mainly body language."

(Interview 7)

"Nodding, looking at you, I walk around the classroom so looking at you, no playing with things, doodling and when it comes to tasks they know exactly what to do."

(Interview 12)

In addition to revealing body language as the main indicator used by teachers to measure engagement, analysis of the interview transcripts indicated that how a teacher measures engagement is dependent on their notions of engagement and the strategies they use in an attempt to stimulate engagement. For instance, for teachers using rewards systems, comments suggested they were hoping their engagement strategy would lead to children behaving in class, following classroom routines and therefore able to stay on task. For these teachers, minimal behavioural problems best indicated how engaged their class was. Levels of participation seemed to be more important for teachers whose expressed pedagogies could be described as Type 2 - Problem Solving and Type 4 - Practical/ Hands on. Meanwhile for teachers whose expressed pedagogies would be described as Type 1 - Fun and Exciting seemed to measure engagement by children's enjoyment levels. For those teachers who claimed to engage children through a Child led/ independent approach (Type 5) measuring engagement could be done through looking at children's levels of self-motivation and interest levels.

Several teacher said they felt that lessons where children collaborated productively in an activity Few teachers mentioned children either asking or answering questions as being a means of measuring engagement, and, only one teacher said that often only possible to measure the engagement after the lesson when you looked at the work the learner had produce, stating:

"The proof is in the pudding."

(Interview 11)

4.4 Summary

Stage One interviews provide the opportunity to discuss teachers' notions in relation to aspects of engagement previously explored in the literature reviews, as well as helping to

answer Research Question 1. What are primary teachers' notions of engagement? Overall, the concept of engagement was seen as one of importance by the teachers interviewed. Most saw creating an engaging classroom environment as part of their role, whilst acknowledging that certain variables could influence how well they were able to fulfil this aspect of their job. Most teachers spoke animatedly when giving examples of lessons which they felt had engaged children. Teachers had been selected on the basis that there was a range of experience, age, location and primary year group represented. During the course of the interviews, it also transpired that some teachers had much higher job satisfaction levels than others. As well as these more general differences, there were distinct differences between certain teachers' expressed notions and strategies and the phenomenographical approach found five categories of notions. Given that the teachers tended to associate themselves with only one category, we could say that these also represent five types of teacher. Of course, at this stage, it cannot be certain that other types do not exist – more teachers may have produced more categories – but there were diminishing returns as interviews approached double figures, and little that was new was revealed by the time all sixteen had been interviewed.

The findings discussed here suggest that teachers have rather naïve, atheoretical, and unconscious notions of engagement. They found it hard to define and did not use terms which regularly occur in the engagement literature, such as 'cognitive engagement', 'emotional engagement'. In short, they clearly had not given it much conscious thought. The emergence of five distinct teacher types suggested that beliefs about engagement not only varied widely but also led to very different strategies being used in the classroom. Yet, the majority of teachers said they used body language to gauge engagement levels. Considering the aforementioned varied notions and strategies, this raises the question of how reliable body language is in measuring engagement and whether particular behavioural indicators are more successful than others in providing an accurate estimation of engagement in pupils. Several teachers felt engagement was higher in some lessons than other lessons, depending on the nature of the subject and the children's ability in that subject. Yet none of the teachers said their engagement strategies changed depending on subject areas.

The interviews alone enabled questions to begin to be answered in relation to teachers' notions regarding the importance of engagement; how teachers felt they measured engagement in their lessons and how curriculum subject could influence engagement levels. However, the emergence of five distinct categories of belief and of teacher from the interviews leads to further questions, including the need to sample a much larger group of teachers to test the categories themselves i.e. Would testing more teachers reveal more categories? and/ or would one, or more, of the categories not be subscribed to by enough teachers if sampled on a larger scale, to warrant being deemed a type? Additionally, sampling a wider group of teachers would allow for possible patterns to be explored between teacher type and attitudes towards engagement in relation to ability, subject area. It was decided that an online questionnaire would offer the opportunity to explore notions further and this second stage of data collected is described in the next chapter (Chapter Five: Stage Two: An online questionnaire).

Chapter Five:
Stage Two
An online questionnaire

5.1 Introduction

In order to test whether the teachers' expressed pedagogies of engagement yielded from the Stage One interviews were representative, an online survey was launched. This chapter describes the design, content and distribution of an online questionnaire. Stage Two consisted of a large-scale questionnaire detailed below. The open ended responses to Stage One had generated information which was used to inform the construction of the questionnaire. A questionnaire, for practicing teachers, was designed to inform reflection on the following aspects of teachers' engagement notions and strategies:

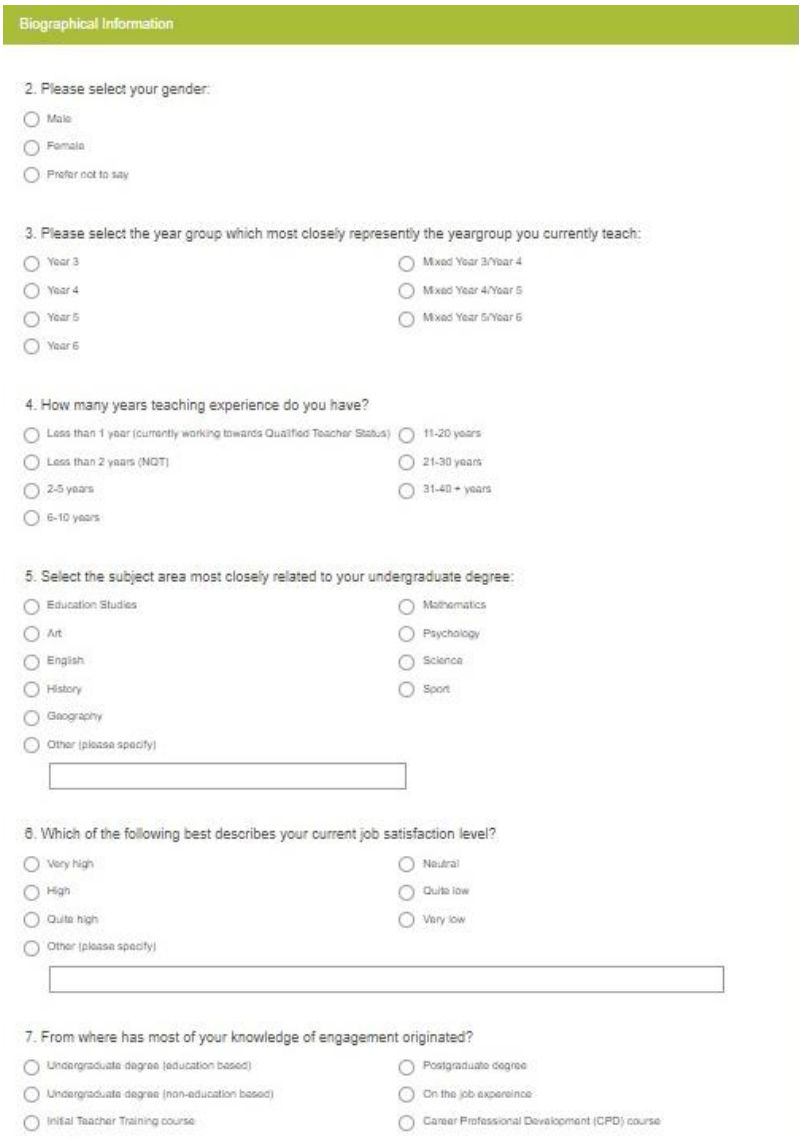
- What are teachers' expressed pedagogies of engagement (what they say)?
- Are there patterns/Types?
- Does the expressed pedagogy change with subjects?
- Does the expressed pedagogy change with ability?

This chapter discusses its application and findings of the questionnaire.

5.2 Method

This questionnaire comprised a total of 14 questions, some of which had sub-questions. All questions are shown below in Figure 5.1 (Question 1 is not included below, it was a consent button). The questions were devised to address certain different, but potentially overlapping, aspects: bibliographic and contextual information; teachers' perceptions of self in terms of how they engage their students; teachers' views on specific ways to engage learners. It also included an open text section (Section 4) and a section for respondents to leave their contact details, or to email me, should they wish to be considered for later stages in the research process (Section 5).

Figure 5.1 Questionnaire as it appeared on Survey Monkey



Teachers' views on pupil engagement

Engaging Pupils

8. The following description most closely matches me in terms of how I engage children in learning (choose only one):

- ◯ Mainly through fun and exciting lessons.
- ◯ Mainly through lesons which use practical, hands on activities.
- ◯ Mainly through problem solving/ thinking skills activities.
- ◯ Mainly through child-led independent tasks/topics.
- ◯ Mainly through a rewards system.

9. To what extent do you agree or disagree with the follow statement:
ACTIVITIES HAVE TO BE FUN TO ENGAGE CHILDREN

Strongly disagree	Disagree	Neither agree or disagree	Agree	Strongly agree
☆	☆	☆	☆	☆

10. To what extent do you agree or disagree with the following statement:
ACTIVITIES HAVE TO BE EXCITING TO ENGAGE CHILDREN

Strongly disagree	Disagree	Neither agree or disagree	Agree	Strongly agree
☆	☆	☆	☆	☆

11. To what extent do you agree with the following statement:
ENGAGEMENT ONLY HAPPENS WHEN CHILDREN ARE BEING SERIOUS

Strongly disagree	Disagree	Neither agree or disagree	Agree	Strongly agree
☆	☆	☆	☆	☆

12. To what extenet do you agree with the following statement:
CHILDREN HAVE TO BE ENGAGED TO ATTAIN

Strongly disagree	Disagree	Neither agree or disagree	Agree	Strongly agree
☆	☆	☆	☆	☆

13. To what extenet do you agree wit the following statement:
HIGHER ABILITY CHILDREN HAVE TO BE ENGAGED TO ATTAIN

Strongly disagree	Disagree	Neither agree or disagree	Agree	Strongly agree
☆	☆	☆	☆	☆

14. To what extent do you agree with the following statement:
CHILDREN WHO HAVE A CLOSE GROUP OF FRIENDS ARE MORE ENGAGED

Strongly disagree	Disagree	Neither agree or disagree	Agree	Strongly agree
☆	☆	☆	☆	☆

15. To what extent do you agree with the following statement:
CHILDREN ARE MORE ENGAGED WHEN WORKING ALONE

Strongly disagree	Disagree	Neither agree or disagree	Agree	Strongly Agree
☆	☆	☆	☆	☆

Teachers' views on pupil engagement

Assessing pupils' engagement and curriculum

How do you assess whether or not children are engaged?

16. I ASSESS PUPIL ENGAGEMENT THROUGH THEIR BODY LANGUAGE

Strongly disagree	Disagree	Neither	Agree	Strongly agree
★	★	★	★	★

17. I ASSESS PUPIL ENGAGEMENT THROUGH THE WORK THEY PRODUCE

Strongly disagree	Disagree	Neither agree or disagree	Agree	Strongly agree
★	★	★	★	★

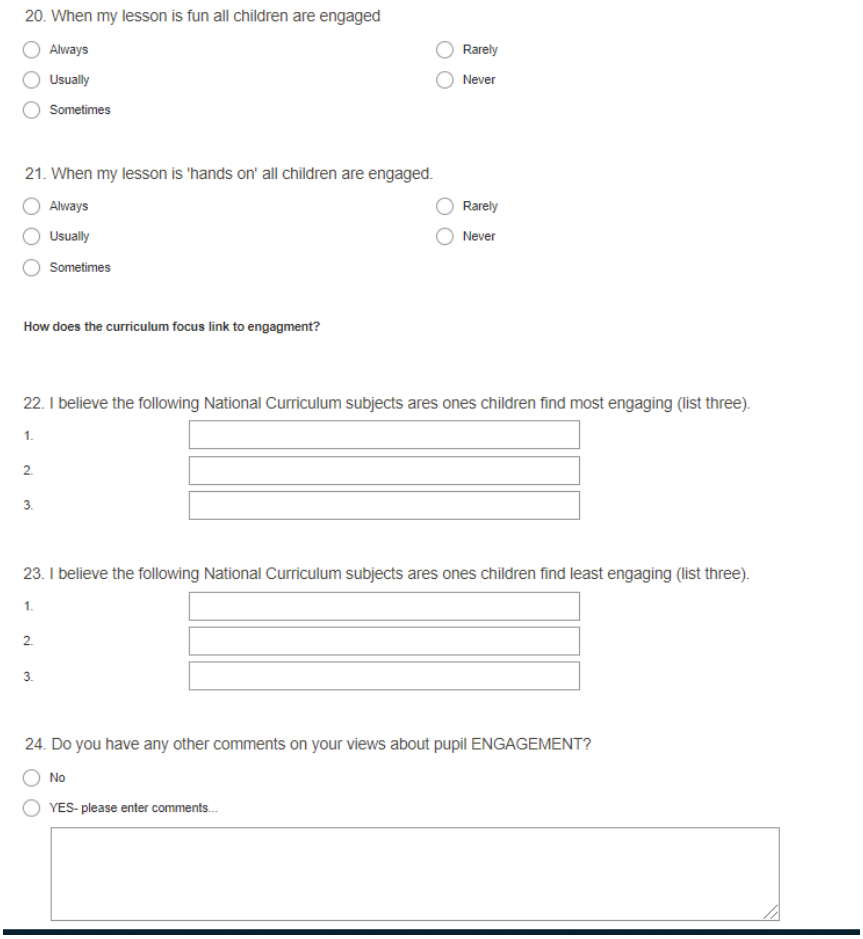
18. I ASSESS PUPIL ENGAGEMENT BY THEIR ABILITY TO RETAIN KNOWLEDGE

Strongly disagree	Disagree	Neither agree of disagree	Agree	Disagree
★	★	★	★	★

How does lesson planning link to pupil engagement?

19. When my lesson is interesting al children are engaged.

- ◯ Always
- ◯ Usually
- ◯ Sometimes
- ◯ Rarely
- ◯ Never


20. When my lesson is fun all children are engaged

- Always
- Usually
- Sometimes
- Rarely
- Never

21. When my lesson is 'hands on' all children are engaged.

- Always
- Usually
- Sometimes
- Rarely
- Never

How does the curriculum focus link to engagment?

22. I believe the following National Curriculum subjects ares ones children find most engaging (list three).

1.
2.
3.

23. I believe the following National Curriculum subjects ares ones children find least engaging (list three).

1.
2.
3.

24. Do you have any other comments on your views about pupil ENGAGEMENT?

- No
- YES- please enter comments...

The questionnaire was designed for teachers working with Key Stage Two pupils (aged 7-11 years) in England. The age range of children from 5-11 years old would embrace too wide a range of cognitive ability and emotional and behavioural indicators. Meanwhile, the results of the Stage One teacher interviews indicated that teachers' conceptions of engagement were more wide ranging in Key Stage Two, providing greater scope for the study. It has also been noted that children tend to become less engaged as they moved through the educational system (Symonds & Tapps, 2016) suggesting that teachers of pupils in Key Stage Two would have to more regularly consider strategies to engage their pupils.

The questionnaire was launched on March 16th 2018 on Survey Monkey, with the link being posted on various teacher groups on Facebook. These groups were chosen due to either their popularity (measured by members or 'page likes'), such as 'ICT with Mr P', or because they were aimed at teachers of particular year groups, thereby encouraging a range of year

group teachers within Key Stage Two to respond. Additionally, the link to the questionnaire was posted on the researcher's Twitter account.

5.2.1 The form of the Questionnaire

Questions were designed in a way that would allow the five identified pedagogies of engagement, identified in Stage One to be tested on a wide scale, as well as providing the opportunity for additional pedagogies to emerge. Meanwhile, it was decided that the inclusion of biographical questions would allow for factors such as a teacher's age and experience level to be considered as a potential influencing factor in their preferred engagement pedagogy and their overall notions of engagement. The questionnaire's final form consisted of four sections, detailed in Table 5.1 – Questionnaire design.

Table 5.1 Questionnaire design

Section 1	Biographical / contextual information	Multiple choice
Section 2	Questions to determine perception of self as a teacher in terms of how they engage their students (types of pedagogy derived from Stage One).	Multiple choice
Section 3	Questions to determine teachers' views on specific ways to engage learners:	Likert scale
Section 4	Additional comments	Open text box
Section 5	Voluntary contact details for possible follow-up	Open text box

The questionnaire included both closed questions and open questions to maximize the strength of each types. Three types of closed questions were used in this study; Likert-type statements; binary questions; and, multiple choice questions. The multiple-choice questions allowed results to be analysed in a variety of ways, for instance, by the year group in which the teacher taught, by year of experience, and, most importantly for this study, by the engagement pedagogy to which the teacher subscribed. The Likert-type statements allowed for teachers'

notions of engagement to be gathered in a way that produced quantative data, complimenting the qualitative data that was used in Stage One.

5.2.3 Benefits of the survey tool

The online Questionnaire used in this study provided a cheap and quick (Denscombe, 2007) method of gathering data from a large number of Key Stage Two teachers with minimal disruption to their routine, thus maximising the possibility of responses. The tool, Survey Monkey, enabled responses to be filtered by answers to specific questions. This feature was useful in exploring the relationships between the five kinds of teachers identified in Stage One. Survey Monkey also allowed the questionnaire to be formatted in the desired way for ease of use, with multiple choice, Likert-type questions, and open texts boxes for follow-up comments. A final benefit was that respondents were able to complete the questionnaire completely anonymously.

5.2.4 Some Limitations

One critique of questionnaires is that whilst some respondents may carefully consider their answers, others may rush through questions leading to a false difference between responses. However, Survey Money provides the researcher with the average time respondents took to answer the questionnaire and in this study it was found the average response time was 4 minutes and 47 seconds, the quickest time was 3 minutes 30 seconds and the longest completion time was 6 minutes 30 seconds. Taking into account that some respondents chose to leave their details or comment in the open text box, the difference between the shortest and longest time is not significant, suggesting few, if any, responses were unduly hasty.

5.2.5 Return of Questionnaires

The survey was open for one week between March 16th and March 23rd 2018 when 600 teachers had completed it. During the course of the week questionnaires were 'returned' instantly through the Survey Monkey website. However, it was only once the questionnaire

was closed that results were compiled and analysed. The short window for respondents to answer the questionnaire was designed so that most teachers did so under similar conditions. While it cannot be guaranteed that all respondents had worked as qualified teachers, it seems unlikely that non-teachers would want to complete the survey, as no financial reward or equivalent was provided to those who took part.

5.3 Results

Responses to each question are shown here and organised by questionnaire section. Results are then discussed in relation to teachers' answers to Question 8, where teachers were required to select their engagement pedagogy.

5.3.1 Results of Section 1 of the questionnaire; biographical/contextual information

Here, results of the first section of the questionnaire are displayed in Table 5.2 Biographical/contextual information results (Section 1). Data from the 600 respondents who completed the questionnaire have been converted to percentages.

Table 5.2 Biographical/contextual information results (Section 1). N = 600, converted to percentages

Biographical / contextual information	Gender (%)	Female 89.33 Male 10.66 Prefer Not to Say 0.69	
	Current Year Group (%)	Year 3 18.16 Year 3/4 – 5.51 Year 4 – 16.33 Year 4/5 – 1.55	Year 5 20.83 Year 5/6 8.78 Year 6 29.33
	Teachers' Experience Level (%)	Less than 1 year(working towards QTS)	3.99
		NQT	5.66
		2-5 years	28.45
		6- 10 years	21.13
		11-20 years	29.45
		21-30 years	9.82
		31-40 years	1.5
	Focus of first degree (%)	Education Studies	28.17
		English	14.5
		Psychology	8.17
		History	6.83
		Science	6.67
		Mathematics	4.5
		Sport	4.17
		Geography	3.33
		Art	2.67
		Other	21
	Current level of Job satisfaction (%)	Very high	7.32
		High	25.62
		Quite high	33.78

		Neutral	16.14
		Low	13.14
		Very Low	3.83
		Other	0.17
	Where knowledge of pupil engagement originated	Undergrad. degree (education)	9.82
		Undergrad degree (non- ed.)	0.83
		Initial Teacher Training	10.65
		Postgraduate degree	7.65
		On the job experience	67.39
		CPD	3.66

5.3.1.1 Summary of Biographical Information

As the results in Table 5.2 demonstrate, there was not a balanced response from females and males, however, this reflects the proportion of female to male teachers in the primary phase of education in the UK. Here, males consisted of just over 10% of respondents; current figures suggest males account for approximately 14% of primary teachers in England (DfE, 2017).

Respondents were rather evenly balanced between Lower Key Stage Two (Years 3 and 4) and Upper Key Stage Two (Years 5 and 6). Out of all the year groups, Year 6 teachers were the most represented, accounting for almost 30% of respondents. Although no conclusions can be drawn with certainty about this, it could be hypothesized that engagement is a priority for Year 6 teachers as they are often held accountable for how well children perform in the end of primary school SATS tests in mathematics and English, and therefore they had the greatest interest in the survey.

Teachers with varying levels of experience were represented. A normal distribution curve could be plotted according to experience levels with those with very low levels of experience and very high levels of experience accounting for only 3.99% (less than one year)

and 1.5% (31 – 40 years) respectively, whereas those with low to medium levels of experience being represented more heavily.

Teachers' undergraduate experience was mixed, with various subjects having been taken by respondents at university. As expected, a background in Education studies was most common among respondents, and several variations of Education were cited by teachers who selected 'Other'. Additional degree types in the 'Other' section included Religious Studies, MFL, Music, Law and Film studies.

There was variation in job satisfaction levels with each option from 'very high' to 'very low' being selected. Although the majority of respondents had positive job satisfaction levels, a third had neutral or negative levels of jobs satisfaction.

The majority of respondents stated that their knowledge and understanding of engagement came from on the job experience. Somewhat surprisingly, given both the interest in engagement and the prevalence of Continuing Profession Development (CPD) courses in the primary sector, only 3.66% felt their knowledge and understanding of engagement

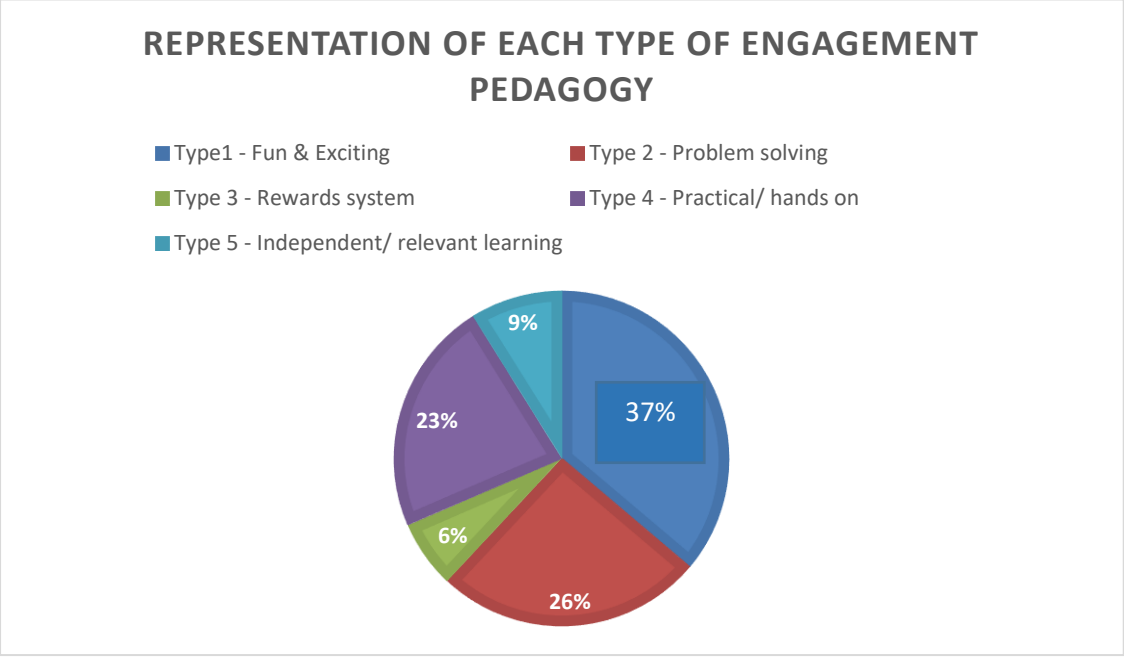
5.3.2 Results of Section 2 of the questionnaire- teacher type

Section 2 comprised one question (Question 8) and was designed to determine perceptions of self as a teacher through how they engage their students. Teachers were given a choice of five engagement pedagogies (these five were based on the results of Stage One – Teacher interviews). Results are shown in Figure 5.2.

As illustrated in the pie chart (Figure 5.2 Representation of each engagement pedagogy), the engagement pedagogies identified in Stage One were all chosen as the predominant strategy by questionnaire respondents. However, some engagement pedagogies were more popular than others. (If it was to be assumed that each type might be equally represented, the chance

occurrence of the observed distribution is of low probability; a χ^2 test gives p <<0.001. On this basis, the bias in the distributions indicates that Fun & Exciting, Practical, and Problem Solving pedagogies appeared more often amongst these teachers that Rewards System and Independent Learning.) Engagement pedagogy Type 1 - Fun and Exciting was the most common pedagogy with 37% of respondents choosing this option. This was followed by Type 2 - Problems Solving chosen by 26% of teachers, narrowly ahead of Type 4 - Practical/hands on which was subscribed to by 23% of teachers. Fewer teachers subscribed to Type 5 - Independent/child-led (9%) and Type 3 - Rewards System.

Figure 5.2 Representation of each type of engagement pedagogy, N= 600, converted to percentages



Section 3 of the questionnaire had Likert-type questions to determine teachers' views on specific way to engage learners. Responses to each question are displayed in Table 5.3 Teachers views on how to engage specific learners.

Teachers' responses to Part 1 of Section 3 revealed that while there was a general

consensus amongst teachers over certain ways of engaging learners, other strategies seemed more contentious. While 41.68 % of teachers either strongly agreed or agreed that activities have to be fun to engage learners, 33.61% of teachers strongly disagreed or disagreed with that statement. Similarly, 41.02% strongly agreed or agreed that lessons have to be exciting to engage children, 30.71% strongly disagreed or agreed. There was a general consensus that children do not have to be serious for engagement to happen, and that children need to be engaged to attain. However, although 57.7% strongly agreed or agreed that High Ability children needed to be engaged to attain; a quarter of respondents disagreed with them. (If it was expected that responses would be equally distributed then each cell would attract equal numbers of responses, and the null hypothesis that there is no difference between the observed and the expected responses can be tested using 2x5 χ^2 tests. These tests returned values of $p<0.001$, supporting the view that the null hypothesis could be rejected. Further, the patterns of responses to the statements are different. For example, those for statements 5 and 6, when subjected to a 2x5 χ^2 test, return $p<0.001$, indicating that the null hypothesis of no difference can be rejected.) When Teacher Types are considered (below), however, it will be seen that such statements can elicit responses specific to Teacher Type.

Table 5.3 Section 3, part 1: Teachers' views to specific ways to engage learners. N= 600, converted to percentages

Questionnaire Statement	Strongly Agree (%)	Agree (%)	Neither Agree or Disagree (%)	Disagree (%)	Strongly Disagree (%)
'Activities have to be fun to engage children'	5.55	36.66	24.71	31.43	2.18
'Activities have to be exciting to engage children'	3.86	37.16	28.69	28.36	2.35
'Engagement only happens when children are being serious'	0.17	2.85	9.88	64.50	22.50
'Children have to be engaged to attain'	20.97	56.50	11.41	10.07	1.34
'Higher ability children have to be engaged to attain'	13.04	44.66	17.22	23.41	1.84
'Children who have a close group of friends are more engaged'	0.5	13.69	48.33	33.56	4.17
'Children are more engaged when working alone'	0.67	3.16	44.93	46.33	4.83

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5.6.3.2 Results of Section 3 part 2: How teachers gauge engagement

Broadly speaking, teachers seemed to judge engagement in a similar way (Table 5.4), largely endorsing the indicators of engagement offered. Body language and the work produced during a lesson were used to judge the degree of engagement by the majority of teachers (87.36% and 92.18% respectively). There was slightly less consensus over whether or not children's ability to retain knowledge was an indicator of engagement. (A 3x5 χ^2 test, using the numbers of responses, returned p=0.000, indicating that the null hypothesis of no differences between the responses to each statement should be rejected, largely due to the pattern in the last statement to which teachers were less positive about agreement.) Nevertheless, some 63.83% agreed that they used retention of knowledge as an engagement indicator. Again, when

Teacher Types are considered (below), it will be seen that such statements can elicit responses specific to Teacher Type.

Table 5.4 Section 2, part 2; Teachers' responses to 'how do you gauge engagement?' N= 600, converted to percentages

	Strongly Agree (%)	Agree (%)	Neutral (%)	Disagree (%)	Strongly Disagree (%)
'I assess pupil engagement through their body language'	9.70	77.66	7.53	4.52	0.67
'I assess pupil engagement through the work they produce'	13.52	78.66	4.84	3.01	0.17
'I assess pupil engagement by their ability to retain knowledge'	1	63.83	16.69	16.36	2.17.

5.6.3.3 Results of Section 3, part 3 – Curriculum focus

As shown in *Table 5.5 Section 2, part 3: Responses to 'How does curriculum focus link to Engagement?' regarding National Curriculum area* (below), science was a popular choice or the most engaging curriculum subject. Physical Education and Art were also seen as engaging, and, to a lesser extent, mathematics. Religious Education was the most common response for both first, second and third least-engaging National Curriculum subject; meaning that overall, 53.12% of teachers chose it as one of their three least-engaging subjects. Geography was seen as not being engaging by approximately a quarter of respondents.

Interestingly, although mathematics was seen as one of the most engaging subjects by some teachers, it also featured in the least engaging choices. English featured in the least popular section, but not as a top three choice in the most engaging section. Again, when Teacher Types are considered (below), this is revisited. The nature of this data does not, however, readily support further statistical analysis.

Table 5.5 - Section 2, part 3: Responses to 'How does curriculum focus link to Engagement?' regarding National Curriculum area N= 600, converted to percentages

		Top 3 most commonly chosen subjects (% of respondents)
Most engaging National Curriculum subject	1st choice	Science – 30.29 Maths – 14.72 Physical Education – 11.68
	2nd choice	Science – 18.09 Art – 16.21 Maths – 14.68
	3rd choice	Physical Education – 12.93 Art – 12.41 Science – 12.24
Least engaging National Curriculum subject	1st choice	Religious Education – 22.47 English – 15.68 Maths – 12.89
	2nd choice	Religious Education – 15.97 Geography – 14.83 History – 8.56
	3rd choice	Religious Education – 14.68 Geography – 10.64 Maths – 7.02

5.3.4 Additional results

An open text box was available at the end of the questionnaire where teachers were invited to leave additional comments regarding engagement. Of the 600 respondents, 130 left a comment in the open text box. Many of these comments simply expanded on the teachers' responses to Question; for instance, teachers that selected 'Type 1 Fun and Exciting' left comments such as,

'If you make learning fun children are more likely to be engaged."

Others, however, revealed that some teachers felt constrained by the current National Curriculum (DfE, 2014). One teacher stated:

"The new curriculum cuts down children's creativity and imagination turning them into robots churning out grammar rules instead. Grammar rules and terms which did not exist until 4 years ago made up by people who have never worked in education. Children have less time for the arts as teachers are under pressure. Children's engagement is at a low point."

(Respondent 444- Type 5)

Another teacher shared this view, commenting:

"New Curriculum has made it harder to create lessons with wonder and awe. There is a vast amount of input needed to help children attain 'Age Related' at the end of Year 6. e.g. 50 grammatical points to learn for SPaG test."

(Respondent 406 – Type 1)

5.4 Results by Engagement Pedagogy

Responses to each question were able to be sorted by teachers' response to Question 8. This allowed for potential similarities and differences between Teacher Types to be explored. An initial discussion of engagement pedagogies and possible types takes place later in this Chapter Four, Stage Two - Summary discussion and a more detailed discussion occurs in Chapter Seven - Overall Discussion.

5.4.1 Survey Results by Teacher Type

According to Table 5.6, Q1, the engagement preferences of male teachers seem to be different from that of female teachers, with men leaning towards an Independent learning Pedagogy and away from a Reward and a Practical Pedagogy. However, the number of male teachers in the sample is relatively small compared with that of female teachers, and a 2x5 χ^2 test of the distributions of responses returned p=0.16, so this observation should be viewed with some caution.

Whereas respondents were rather evenly balanced between lower Key Stage Two (Years 3 and 4) and upper Key Stage Two (Years 5 and 6) overall, this was not the case when filtering

the results by Pedagogy Type. (Combining Years 3 & 4, and Years 5 & 6, a 2x5 χ^2 test indicated differences between the patterns of responses, with $p < 0.001$). Teachers who adopted Rewards system (Type 3) and Practical approaches (Type 4) were more likely to be found working in Lower Key Stage Two, whereas teachers who adopted Fun and exciting (Type 1), Problem solving (Type 2) and Independent, child-led (Type 5) approaches were more likely to teach in Upper Key Stage Two.

As illustrated in Table 5.6, Type 3 (Rewards system) teachers tended to have lower levels of experience, compared with other teachers. Meanwhile teachers who adopted a Type 2 (Problem Solving) or Type 5 (Independent, child-led) approach tended to have more experience. Note, however, that this is only a tendency and not a sharp division and there were exceptions. For example, comparing the numbers of responses in the Rewards and Problem Solving Types by comparing ITT to 10 years with more than 10 years, a 2x2 χ^2 test indicated that the null hypothesis might not be rejected as $p=0.09$. However, it could be argued that Problem Solving (and Independent work) may be less suited to younger children but they can respond well to Rewards. Taking this as a predicted direction, then $p=0.045$, one-tailed, which suggests that the tendency may have some foundation.)

Education Studies backgrounds was the most common among all respondents (Table 5.6). Interestingly, they were also the teachers most likely to adopt a Type 3 (Rewards system) Pedagogy. Teachers with a Psychology background seemed more likely to use a Fun and Exciting (Type 1) and an Independent, child led (Type 5) approach. However, a 2x5 table of Educational Studies and Psychology backgrounds by Teacher Type returned $p=0.16$ which does not support a rejection of the null hypothesis.) Regardless, it should be emphasised that exceptions to these presumed tendencies were not uncommon.

Job satisfaction levels seemed to vary with Pedagogy Types. For example, while Type 1 teachers often had high levels of job satisfaction, with 34.40% being very high or high, Type 3 teachers had the lowest levels of job satisfaction with only 14.29% selecting very high or high and 25.71% being very low or low. (A 3x5 contingency table [VH+H+QH, N, QL+VL satisfaction levels by Teacher Type] returned $p=0.02$ (χ^2 test), suggesting that the null hypothesis could be rejected and that there was a difference between Teacher Types in job satisfaction).

Regardless of which Engagement Pedagogy teachers used, knowledge and understanding of engagement was seen overwhelmingly as coming from on-the-job experience. (As expected, given the data, Kolmogorov-Smirnov tests of differences between the distributions of responses indicated that the null hypothesis should be accepted, e.g. for the two most different Types, 2 and 5, $p>0.30$, and all the distributions should be considered similar and endorsing the 'on-the-job experience' response). The other potential sources attracted relatively little attention, even the contribution of initial teacher training was not great, attracting only about 10% of responses, on average.

Teacher Type appeared to relate to teachers' notions of engagement. Full results by Teacher Type are displayed in Table 5.7 Results of Section 3, part 1, by Teacher Type. While 41.68 % of *all* teachers either strongly agreed or agreed that activities have to be fun to engage learners, it was 46.3% for Type 1 teachers, who used a Fun and Exciting approach. However, almost half (49.02%) of Type 4 teachers, who claimed to use a Practical hand-on approach, strongly disagreed or disagreed that activities had to be fun. (A 3x2 [SA+A, N, SD+D by Teacher Type 1 and 4], χ^2 test, returned a probability of 0.03, supporting a rejection of the null hypothesis [NB cells were combined to avoid expected values of less than five].) Perhaps unsurprisingly, Type 1 teachers were also the group who felt most strongly that activities have to be exciting to engage learners.

Regardless of Type, there was a general consensus that children do *not* have to be serious for engagement to happen. (The patterns of responses could be taken to be similar in this respect, as a 3x5 [SA+A, N, SD+D by Teacher Type] χ^2 test returned $p=0.10$.) However, it seems that whilst some Types felt strongly that children need to be engaged to attain, with almost 80% of Types 1 and 2 strongly agreeing or agreeing, other Types were less sure, with only 62.85% of Type 3 teachers strongly agreeing or agreeing. (For example, a χ^2 test of SA+A, N, SD+D by Types 1 and 3 responses returned a probability of $p=0.05$, allowing a cautious rejection of the null hypothesis for these Types.)

No Type felt strongly that Higher Ability children needed to be engaged in order to achieve. (A 3x5 (SA+A, N, SD+D x Teacher Type) χ^2 test returned $p=0.63$, indicating that the null hypothesis of no differences between the Types' responses should be accepted).

There was a general disagreement with the statement, '*Children who have a close group of friends are more engaged*'. For instance, approximately a third of Type 2 (Problem solving) and Type 3 (Rewards system), and over a half of Type 1 (Fun and exciting) and Type 4 (Practical, hands-on) teachers strongly disagreed or disagreed. While certain Types of teacher seemed more likely to disagree with the statement, a χ^2 test of a 3x5 contingency table comprising SA+A, N, SD+D x Teacher Type returned p=0.45, suggesting that the null hypothesis of no significant difference between Types should be accepted. There was a consensus of sorts about collaborative learning, with most teachers feeling either undecided (neither agreeing nor disagreeing) or disagreeing with the statement, "*Children are more engaged when working alone"*. (When tested as above, p=0.96, so the null hypothesis that there was no difference between Teacher Types in this respect was accepted.) This would be consistent with a view that social interaction increases engagement, but, of course, it says nothing about the nature of that engagement, or about the possibility that the means of facilitating engagement might vary with the task.

5.7.1.2 Results of Section 3, part 1 of the questionnaire

Teacher type appeared to influence teachers' notions of engagement. Full results by teacher type are displayed in Table 5.7 Results of Section 3, part 1, by Teacher Type. While 41.68 % of all teachers either strongly agreed or agreed that activities have to be fun to engage learners, this rose a little to 46.3% for Type 1 teachers, who used a Fun and Exciting approach. Meanwhile the percentage dropped to 33.33% amongst teachers used a Rewards system (Type 3). However, almost half (49.02%) of Type 4 teachers, who used a practical hand on approach, strongly disagreed or disagreed that activities had to be fun. Perhaps, unsurprisingly, Type 1 teachers were also the group who most felt most strongly that activities have to be exciting to engage learners, with 46.54% strongly agreeing or agreeing with the statement. Again, Type 4 teachers were most likely to contest this view with 39.21% strongly disagreeing or disagreeing with the statement.

Table 5.6 Section 1 Survey Results by Teacher Type N= 600, converted to percentages

		Percentage of Type 1- Fun and Exciting	Percentage of Type 2- Problem Solving	Percentage of Type 3- Reward system	Percentage of Type 4- Independent child led	Percentage of Type 5- Practical, hands on
Q1. Gender	Female	88.86	85.71	93.94	83.67	94.57
	Male	10.9	12.93	6.06	14.29	5.43
Q. 2 Current year group	Year 3	18.48	10.88	30.30	16.33	23.85
	Year 4	16.59	12.93	30.30	12.24	17.69
	Year 5	22.75	23.13	9.09	24.49	17.69
	Year 6	26.07	37.41	24.24	32.65	22.31
	Year ¾	7.11	3.40	0	2.04	8.46
	Year 4 / 5	1.42	1.36	0	0	3.08
	Year 5 / 6	7.58	10.88	6.06	12.24	6.92
Q 3. Experience level	ITT	5.53	1.99	5.71	3.92	3.68
	NQT	6.45	6.62	5.71	1.96	5.15
	2-5	28.57	25.83	37.14	35.29	27.21
	6-10	23.07	18.54	22.86	25.49	19.12
	11-20	27.19	31.79	25.71	29.14	30.15
	21-30	8.76	11.92	2.86	3.92	12.50
	31-40+	0.46	3.31	0	0	2.21
Q 4 Undergraduate degree discipline	Education Studies	28.24	23.84	42.86	37.25	26.47
	Art	1.39	3.31	5.71	1.96	3.68
	English	16.20	16.56	5.71	11.76	13.97
	History	6.94	7.95	8.57	3.92	5.88
	Geography	1.85	3.97	5.71	3.92	4.41
	Mathematics	3.24	5.96	11.43	1.96	3.68
	Psychology	11.11	3.31	2.86	11.76	8.09
	Science	5.09	9.93	0	1.96	8.82
	Sport	4.17	2.65	2.86	7.84	5.15
	Other	21.76	22.52	14.29	17.65	19.85
Q5 Job satisfaction level	Very high	11.06	5.96	0	7.84	5.15
	High	31.34	22.52	14.29	21.57	23.53
	Combine VH and H	34.40	28.48	14.29	29.41	28.68
	Quite high	30.88	38.41	31.43	37.25	32.35
	Combined VH, H, QH	65.28	66.89	45.72	66.66	61.03
	Neutral	13.36	15.89	28.57	15.69	17.65
	Low	9.22	12.58	20.00	15.69	17.65
	Very low	4.15	4.64	5.71	1.96	2.94
	Combined QL and VL	13.37	17.22	25.71	17.65	20.59
Q6 Where has most of your knowledge of engagement come from?	Undergraduate degree (education based)	8.76	11.92	8.57	13.73	8.09
	Undergraduate degree	1.84	0.66	0	0	0
	Initial Teacher Training course	13.36	9.93	11.43	11.76	7.35
	Postgraduate degree	7.37	9.93	11.43	5.88	5.88
	On the job experience	66.82	63.58	65.71	63.71	72.79
	(CPD) course	1.84	3.97	2.86	3.92	5.88

5.7.1.3 Results of Section 3, part 2 of the questionnaire: How teachers measure engagement

There was little variation between Teacher Types in terms of how they 'measured' engagement. (For each question, the data were reduced to 3x5 tables using SA + A, N, and SD + D to avoid a surfeit of cells of less than 5. χ^2 tests of each table returned $p>0.50$ for all, indicating that the null hypothesis should be accepted, and that the responses of each Teacher Type were similar for a given question.) A very high percentage of teachers (ranging from 84.31 to 88.02%) strongly agreed or agreed with the statement '*I assess engagement through body language '*. Similarly most teachers agreed or strongly agreed with the statement, *'I assess pupil engagement through the work they produce'*, particularly Type 5 teachers (97.15%). Again, most teachers (regardless of Teacher Type) also strongly agreed or agreed that they assessed pupil engagement through the children's ability to retain knowledge. Given the similarities of the responses for each Teacher Type, they could be accumulated and treated as one group of Teachers *for each question*. When accumulated in this way, it is interesting to note that for Q18 small peaks appear for 'neutral about' or 'disagreed with' the notion that ability to retain knowledge is an indicator of engagement. In other words, some teachers had reservations about the acquisition of knowledge being an indicator of engagement (reservations not felt about produced work or body language). (2x2 contingency tables of SA + A, N + D + SD for Q16 and 18 and then for Q17 and Q18 returned $p<0.001$ using χ^2 tests, indicating that the null hypotheses should be rejected and the pattern of responses to Q18 was not quite like that of the other questions, Q16 and Q17).

Table 5.7 Results of Section 3, part 1, by Teacher Type, N= 600, converted to percentages

		Percentage of Type 1	**Percentage of Type 2**	**Percentage of Type 3**	**Percentage of Type 4**	**Percentage of Type 5**
Q.9 ACTIVITIES HAVE TO BE FUN TO ENGAGE CHILDREN	Strongly Agree	9.26	4.00	2.86	0	4.41
	Agree	37.04	36.67	37.14	33.33	36.76
	Combination SA and A	46.30	40.67	40	33.33	41.17
	Neither agree or disagree	24.07%	26.00	25.71	17.65	26.47
	Disagree	27.31%	30.00	31.43	49.02	31.62
	Strongly disagree	2.31%	3.33	2.86	0	0.74
	Combination D and SD	29.62	33.33	34.29	49.02	32.36
ACTIVITIES HAVE TO BE	Strongly Agree	5.53	3.31	2.86	0	3.68
	Agree	41.01	33.11	42.86	33.33	35.29
	Combined SA and A	46.54	36.42	45.72	33.33	38.97

	Neither agree or disagree	25.81	30.46	22.86	27.45	33.09
	Disagree	25.81	29.80	25.71	37.25	27.21
	Strongly disagree	1.84	3.31	5.71	1.96	0.74
	Combination D and SD	27.65	33.11	31.42	39.21	27.95
Q. 11 ENGAGEMENT ONLY HAPPENS WHEN CHILDREN ARE BEING SERIOUS	Strongly Agree	0%	0.66	0	0	0
	Agree	2.76%	2.65	5.71	5.88	1.47
	Combination SA and A	2.76	3.31	5.71	5.88	1.47
	Neither agree or disagree	10.14%	15.23	11.43	1.96	6.62
	Disagree	64.98%	59.60	65.71	64.71	70.59
	Strongly disagree	22.12%	21.85	17.14	27.45	21.32
	Combination D and SD	87.10	81.45	82.85	92.16	91.91
Q. 12. CHILDREN HAVE TO BE ENGAGED TO ATTAIN	Strongly Agree	20.28%	21.19	17.14	21.57	22.79
	Agree	59.45%	56.29	45.71	47.06	56.62
	Combined	79.73	77.48	62.85	68.63	79.41
	Neither agree or disagree	13.36%	9.93	20	15.69	5.88
	Disagree	6.45%	9.27	17.14	11.76	14.71
	Strongly disagree	0.46%	3.31	0	3.92	0
	Combined D and SD	6.91	12.58	17.14	15.68	14.71
Q.13. HIGHER ABILITY CHILDREN HAVE TO BE ENGAGED TO ATTAIN	Strongly Agree	11.06%	13.25	22.86	15.69	12.50
	Agree	42.86%	49.01	34.29	45.10	44.85
	Combined	53.92	62.26	57.15	60.79	57.35
	Neither Agree or disagree	16.13%	18.54	20	13.73	16.91
	Disagree	28.57%	17.22	20	21.57	24.26
	Strongly disagree	1.38%	1.99	2.86	3.92	1.47
	Combined D and SD	29.95	19.21	22.86	25.49	25.73
Q.14 CHILDREN WHO HAVE A CLOSE GROUP OF FRIENDS ARE MORE ENGAGED	Strongly Agree	0	0.66	2.86	1.96	0
	Agree	5.53%	14.57	14.29	5.88	13.97
	Combined SA and A	5.53	15.23	17.15	7.84	13.97
	Neither Agree or disagree	34.10%	51.66	51.43	39.22	49.26
	Disagree	47%	29.14	22.86	50.98	34.56
	Strongly disagree	13.36%	3.97	8.57	1.96	2.21
	Combined D and SD	60.36	33.11	31.43	52.94	36.67
Q.15 CHILDREN ARE MORE ENGAGED WHEN WORKING ALONE	Strongly Agree	1.38	0	2.86	0	0
	Agree	3.69	3.97	2.86	1.96	2.21
	Combination SA and A	5.07	3.97	5.72	1.96	2.21
	Neither Agree or disagree	41.94	45.03	48.57	47.06	45.59
	Disagree	46.54	44.37	45.71	47.06	50.74
	Strongly disagree	6.45	6.62	0	3.92	1.47
	Combination SD and D	52.99	50.99	45.71	50.98	52.21

Table 5.8 Results of Section 3 part 2 – How teachers measure engagement, N= 600, converted to percentages

		Percentage of Type 1 Teachers	Percentage of Type 2 Teachers	Percentage of Type 3 Teachers	Percentage of Type 4 Teachers	Percentage of Type 5 Teachers
Q. 16 I ASSESS PUPIL ENGAGEMENT THROUGH THEIR BODY LANGUAGE	Strongly Agree	10.60	11.41	5.71	5.88	6.28
	Agree	77.42	74.50	80	78.43	79.12
	Combination SA and A	88.02	85.91	85.71	84.31	85.4
	Neither Agree or disagree	7.83	7.38	8.89	5.88	6.71
	Disagree	3.69	5.37	2.22	7.84	7.89
	Strongly disagree	0.46	1.34	0	1.96	0
	Combination SD and D	4.15	6.71	2.22	9.80	8.57
Q. 17 I ASSESS PUPIL ENGAGEMENT THROUGH THE WORK THEY PRODUCE	Strongly Agree	11.52	14,67	10.37	19.61	22.86
	Agree	82.49	74.67	82.22	68.63	74.29
	Combination SA and A	94.01	89.34	92.59	88.24	97.15
	Neither Agree or disagree	2.76	7.33	4.44	7.84	2.86
	Disagree	3.23	2.67	2.96	3.92	0
	Strongly disagree	0	0.67	0	0	0
	Combination SD and D	3.23	3.34	2.96	3.92	0
Q.18I ASSESS PUPIL ENGAGEMENT BY THEIR ABILITY TO RETAIN KNOWLEDGE	Strongly Agree	0.92	0.67	0.74	1.96	2.86
	Agree	64.98	64.00	59.26	70.59	60
	Combination SA and A	65.90	64.67	60.00	72.55	62.86
	Neither Agree or dis.	15.67	17.33	20.74	7.84	20
	Disagree	17.05	15.33	17.04	17.65	14.29
	Strongly disagree	1.38	2.67	2.22	1.96	2.86
	Combination SD and D	18.43	18.00	18.26	19.61	17.15

5.7.1.4 Results of Section 3, part 3 of the questionnaire: Influence of subject on engagement by Pedagogy Type

Science was chosen by all five Pedagogy Types as their first choice for the most engaging subject (Type 5 teachers' choice was tied with mathematics, both at 20%). Mathematics was also seen as an engaging subject across most Types, frequently being chosen as a first, second or third choice for 'most engaging subject'. Of the three core subjects, English was a less popular choice for 'most engaging' subject. Meanwhile Art and History featured frequently in the most engaging choices, again, across all Teacher Types. Least engaging subjects were

again, largely consistent across Types, with Geography being chosen by many teachers. PSHE was also cited as one of the least engaging subjects, although by a smaller percentage of teachers across Types. Of the core subjects, Science did not feature as the 'least engaging' subject for any of the teachers' three choices of least engaging subject. The data, however, is presented for contextual information only, and do not facilitate hypothesis testing by statistical analysis.

Table 5.9 Results of Section 3 – Influence of subject on engagement by Pedagogy Type

	Percentage of Type 1 teachers	**Percentage of Type 2 teachers**	**Percentage of Type 3 teachers**	**Percentage of Type 4 teachers**	**Percentage of Type 5 teachers**
Most Engaging choice 1	Science 31.9	Science 24	Science 38.24	Science 28	Maths 20
	Maths 14.76	Maths 18	Art 14.71	English 14	Science 20
	English 8.57	Art 10.67	Maths 12.50	History 8	Art 11.43
Most Engaging choice 2	Art 20.57	Science 25.34	Maths 15.44	Art 15.56	Science 25.71
	Maths 15.79	History 15.75	History 13.24	Maths 11.11	Art-14.29
	Science 15.31	Maths 14.38	Art 12.50	Science 9.63	History 11.43
Most engaging choice 3	Art 14.42	Maths 15.28	Maths 14.62	Science 14	Science 18.18
	History 11.06	Science 14.58	English 12.31	Art 12	History 9.09
	Science 11.06	Art 13.19	Geography10.77	History 12	English 9.09
Least Engaging choice 1	English 18.45	English 11.72	Geography 20.17	Maths 14.58	English 37.14
	Maths 12.62	Maths 11.72	History 11.76	English 8.33	Maths 14.29
	Geography 7.77	Geography 4.14	English 9.24	MFL 6.25	Geography 5.71
Least engaging choice 2	Geography 15.26	English 11.54	Geography 20.17	PSHE 11.36	English- 17.65
	Maths 9.47	Geography-10.77	History 11.76	Geography 11.36	Grammar 11.76
	History 7.89	Grammar 5.38	English 9.24	History 11.36	History 11.76
Least engaging choice 3	Geography 10.47	Geography 13.04	Maths 9.43	Maths 17.95	Geography 13.33
	Music 7.56	RE 6.96	Geography 7.55	Geography 12.82	PSHE 6.67
	PSHE 6.98	PSHE 6.09	PSHE 6.60	Music 7.69	Maths 6.67

5.5 Discussion

Here, the results of the survey are discussed in relation to the Research Questions which Stage Two sought to answer. Further discussion takes place in Chapter Seven - Overall Discussion.

5.5.1 What are teachers' expressed pedagogies of engagement (what they say)?

The questionnaire, like the interviews, found that teachers' expressed Engagement Pedagogies fell into five distinct Types as found in the earlier interviews of teachers. However, unlike the interviews and usefully, the scale of the questionnaire allowed for the popularity of particular pedagogies to be determined.

5.5.2 Are there patterns/Types?

The survey analysis tool, Survey Monkey, allowed responses to be sorted by Pedagogy Type, enabling for patterns to emerge; comparisons could then be made between the five Engagement Pedagogy Types. By organising results as a whole and then by Type, characteristics of particular Types of teacher become evident. For instance, those who felt they used Fun and exciting activities to engage children (Type 1) were more likely to say they had high levels of job satisfaction. Meanwhile, Type 3 teachers, who used Rewards Systems to engage children, had considerably lower levels of job satisfaction. Pedagogy Type also seemed to have an effect on teachers' views on whether engagement was necessary for all learners, as Table 5.10 illustrates (below).

Table 5.10 Relationship between engagement and attainment. (The higher the mean score, the more the teachers agreed with the statement (on a scale of 1-5)).

Teacher Type	1 – Fun & exciting	2 – Problem solving	3 – Rewards system	4 - Practical/ hands on	5 – Ind./ child led
Statement	Children have to be engaged to attain				
Mean score	3.93	3.83	3.88	3.71	3.62
Statement	Higher Ability children have to be engaged to attain				
Mean score	3.34	3.54	3.43	3.28	3.55

The calculated mean score for each Teacher Type shows some bi-polarisation of views regarding whether engagement was necessary. Type 1, Type 3 and Type 4 teachers were less likely to think Higher Ability children need to be engaged, compared to Type 2 and Type 5. (The frequency patterns of responses of Types 1, 3, and 4 teachers and those of Types 2 and 5 teachers were, in statistical terms, significantly different ($p<0.01$, $\chi 2$ test)).

Not only were there patterns in terms of biographical/ contextual responses, but also in terms of teachers' notions and strategies. Rather unsurprisingly, Type 1 teachers were the most likely to believe that activities have to be fun to engage learners.

5.5.3 Does the expressed pedagogy change with subjects?

Teachers seemed to view particular subjects as more likely to engage learners than other subjects. Science, Art and Physical Education were seen as engaging. Mathematics seemed to divide teachers with some citing it as one of their top three engaging subjects, and others viewing as one of the least engaging subjects.

Of the 156 teachers who left a comment in the open text box in Section 4 of the questionnaire, none said they varied their pedagogy depending on the curriculum subject. So, while teachers think subject area can affect pupil engagement none indicated that they varied their approach to adapt to these variations.

5.5.4 Does the expressed pedagogy change with ability?

Teachers' views on whether children had to be engaged to attain varied depending on the ability of the child. Overall, 77.17% of teachers strongly agreed or agreed that pupils needed to be engaged to attain, yet this dropped to 57.52% for Type 3 teachers. It appeared that Engagement Pedagogy Types was a factor in determining whether teachers felt higher ability children needed to be engaged. This was particularly noticeable with Types 1, 3 and 4 teachers, many of whom presumably saw generating engagement via fun/excitement, rewards, and hands-on activity as unnecessary stimuli for those of high ability. On the other hand, Types 2 and 5 teachers, favouring problem solving and independent activity, were more in agreement about the need for engagement, regardless of ability. Type 1 (Fun and exciting teachers felt most strongly that children (when ability was not specified) need to be engaged (79.73%), yet were the least likely to think Higher Ability children needed to be engaged (53.92%). Teachers who used a Problem Solving approach (Type 2) were the most likely to believe Higher Ability children needed to be engaged to attain (62.26%). Section 4 of the questionnaire allowed teachers to write additional comments. Of the 600 respondents, 156 left a comment. Only one of these, made a reference to ability:

"The children I teach are very low ability and it is hard to engage them."

(Respondent 500)

The lack of responses relating to ability suggests that teachers do not necessarily think of ability levels when considering engagement. Therefore, their responses to Questions 12 and 13 regarding whether or not they believe children, and Higher Ability children, need to be engaged to attain, would appear unconscious.

5.6 Looking ahead

The online survey allowed for teachers' notions and expressed pedagogies of engagement, first explored in Chapter Seven, to be tested more widely. Broadly speaking, teachers' beliefs influence how they teach (see e.g., Richardson *et al*., 1991; Stipek *et al*.,

2001), but they must also respond to the expectations of school managers and parents, and are constrained by for, instance, resources. The next chapter describes an exploratory study where lessons of a sample of teachers were observed to judge the extent to which these teachers taught in ways that reflected their beliefs about engagement.

Chapter Six: An exploratory study using Classroom Observations

6.1 Introduction

The aim of observing lessons was to explore how teachers' engagement pedagogies affect the strategies they use in the classroom and enable me to gain a limited feel as to whether rhetoric (as reflected in the questionnaires and interviews) matched reality (as in what teachers actually did in the classroom). This exploratory exercise involved observation in ten different schools. In each school, the Year 4 teacher was observed teaching one English and one mathematics lesson. These observations involved using mixed methods to gather rich data, detailed below. It could be said that each teacher was a Case Study, with two teachers being selected per Engagement Type (as identified in Chapter Four and confirmed in Chapter Five). This chapter describes the steps leading up to the observations, including the design of an engagement assessment tool, before discussing the results of each lesson observation. Overall Engagement levels for mathematics and English, recorded by research and teachers are then presented by ability group, before findings from the observations and discussed (an overall discussion takes place in Chapter Seven: Overall Discussion).

6.1.1 Mini Case Studies

As Yin points out, case studies are useful when seeking to explain "how and why'' a social phenomenon occurs (Yin, 2004). Case studies can also be used to understand everyday practices and their meanings for those involved, which would not be revealed in brief contact. There are several types of case study and choosing the right one to best answer a study's research questions is essential. The intrinsic case studies address one instance (perhaps the only instance) of the phenomenon; collective case studies focus on several instances of the same phenomenon to identify common characteristics; while instrumental case studies focus on the phenomenon because it facilitates understanding of something else (Brewer in Cassells & Symon, 2004, p.315). They can be theoretically exciting and data rich (Hartley in Cassells & Symon, 2004) and in this study were used to complement the large-scale responses of the questionnaire and provide another dimension, a first-order perspective, on engagement in the primary classroom.

6.1.2 Some limitations

Case studies have sometimes been accused of being anecdotal, testimonial and rather impressionistic accounts of events, which may inhibit theory accumulation in the field (Macy *et al.*, 1989 in Länsisalmi, Peiró & Kivimäki, 2004). However, in recent years more rigorous and explicit research design has been developed and methods of data collection and analysis have improved (Yin, 1994). In this study, various methods were used to report on each case (detailed below – observations, videoed observations, engagement measuring tools for the teacher and the researcher) to ensure this rigorous approach.

Additionally, case studies have been accused of providing only limited insights into phenomena meaning that findings cannot be considered generalisable (Thomas, 2011). Flyvbjerg however, claims:

> *"It is incorrect to conclude that one cannot generalize from a single case. It depends upon the case one is speaking of, and how it is chosen. This applies to the natural sciences as well as to the study of human affairs (see also Platt 1992; Ragin and Becker 1992)."*
>
> (Flyvbjerg, B., 2006, p.8)

This view aligns with that of Wolcott, 1995, Kluckhorn and Murray, 1948 and Walker, 1980 (cited in Wellington Szczerbinski, 2007) who acknowledge that although each case is unique, none are so unique that findings cannot be generalised. Wellington emphasises this point when he states that:

> *"In some ways all schools are the same, in other respects they are all different; similarly, for colleges, universities and employers."*
>
> (Wellington, 2015, p.177)

Indeed, in this study, all the classes were the same in some ways: all were Year 4 classes; all followed the National Curriculum; all of the teachers had been working with the class for nearly a full academic year and all observations took place in the morning. In other ways they were different, they were deliberately different in one way - the class teachers each subscribed to a different engagement type - but also different in terms of socio-economic demographics, faith schools and non-faith schools and percentage of EAL students, for instance. The questionnaire used in Stage Two showed that even though schools are unique in some ways, certain ways of thinking and doing in classrooms are generalisable to some extent, or at least relatable to other contexts (Bassey, 2000).

6.2 Method

6.2.1 Selection of cases

In this study, potential cases were chosen by teachers' Engagement Pedagogy Type. As five Types emerged from Stage Two, it was decided that collective mini- case studies would be needed in Stage Three; two mini case studies per type to ensure illuminating contrasts and similarities across the contexts and processes (Pettigrew & Whipp, 1991; Brown & Eisenhardt, 1998).

Teachers were recruited for case studies through the earlier online questionnaire. Respondents to the online questionnaire were asked to leave their contact details if they consented to be contacted for potential participation in further research (Section 6 of the questionnaire). These respondents were then organised by teacher type, based on their response to Question 8, relating to how they perceived themselves as a teacher in terms of how they engaged pupils. These five groups were then sub-divided into year groups. Due to the disruption that can be caused by preparation for SATS tests and the test week itself, as well as transition events and residential trips in the post-SATS period, Year 6 teachers were immediately discounted. As children tend to become less engaged as they move through school (Symonds & Hargreaves, 2016), Year 3 teachers were then also discounted, as it was assumed that children in this year group would be more readily engaged regardless of teachers' approaches. The decision on whether case studies would be based in Year 4 or Year 5 was then decided through the range of responses from teachers in those years. All Year 4 and 5 teachers were contacted and asked to participate after ethical approval had been granted on 21st May 2018. More Year 4 teachers responded than Year 5 teachers so the choice was made for case studies to take place in Year 4. Year 4 teachers were then selected on a 'first come, first served' basis with subsequent teachers being placed on a reserve list. As the questionnaire had been completed from teachers across England a wide-range of socio-economic demographic had naturally occurred. The fact that case studies were spread across England also served to further anonymise the schools, teachers and pupils.

6.2.2 Observation of cases

Observational methods can be a useful way of gaining insights into everyday classroom practice, making it a frequently used method in education research. There are various types of observational methods available, such as:

- Participant - Where the researcher deliberately joins in with the activities of a group while observing them
- Non-Participant - Where the researcher can observe people's behaviour without joining in any way
- Covert - Where participants do not know that they are being observed
- Overt - Where the researcher informs participants that you will be observing them

- Structured - Where the researcher may have a list of behaviours that you have decided you will observe
- Unstructured - Which can provide a more in-depth narrative account

In this study, non-participant observations were used because so that the usual classroom interaction between teacher and pupils needed to be maintained as much as possible. The researcher was positioned at the back of the room seated behind the children. At times, the researcher moved around the room to observe pupils' engagement level, particularly during 'hands on' activity where children also moved around the room. Teacher inputs were all observed from the back of the class. There was no interaction with children so that the data gathered allowed for a reasonable first-hand understanding of their real-life situation (Merriam, 1988; Miles and Huberman, 1994) and so the setting is teachers' and pupils' natural learning environment was minimally affected by my presence. Meanwhile, covert observation, which could have been achieved through placing hidden cameras in the class, may have yielded a more uncontaminated view of the class, but raises ethical issues (Chell, 1999 in Cassell & Symons, 2004) and practical problems.

The exploratory study was developed to explore two aspects of engagement: (i) if and how teachers' engagement types influenced their everyday pedagogical practices, and (ii) how pupils' cognitive and emotional engagement levels were related to these strategies. This made classroom observation an appropriate method.

6.2.3 Recording instruments and tools

The dual purpose of the observations required a variety of recording instruments and tools. Some of these recording instruments and tools served to record observations of the teacher, others the pupils, and others both teacher and pupils, illustrated in Table 6.1. – Recording observations.

Table 6.1 Recording observations

Objective:	**Recording/ measurement tool used:**	**When:**
Teachers' strategies	Written notes	During the observation
	Video Enhanced Observation (VEO) application on iPad	During and post observation
Pupil engagement levels	Written notes	During the observation
	VEO	During and post observation
	Researcher's measuring tool	End of each lesson
	Teacher measuring tool	End of each lesson

In this study, observations were used to gauge the cognitive and emotional engagement levels of pupils in reaction to teachers' strategies. Martin and Torres describe these categories of engagement as such:

> *"Emotional Engagement: focusing on the extent and nature of positive and negative reactions to teachers, classmates, academics and school.*
>
> *Cognitive Engagement: focusing on students' level of investment in learning."*
>
> (Martin and Torres, 2016, p.1)

As discussed at length in previous chapters, various categories of engagement exist and overlap, however, it is intellectual and emotional engagement that form the focus of the observations. These categories of engagement which appear to have most influence of pupils' attainment. As Kandel explains:

> *"The process of storing and retaining explicit memories by building connections between ideas requires high levels of mental concentration, which can be facilitated by a strong intellectual or emotional engagement."*
>
> (Kandel, 2006)

Observations have sometimes been accused lacking in reliability, particularly as the mere presence of an observer may change the behaviour of the observed (Wyhte, 1943 cited in Flick,

2004). Additionally, results could be affected by potential personal bias, producing invalid observations and a threat to the internal validity of a study (Fraenkel & Wallen, 1990). This study has sought to overcome both critiques. As previously mentioned, the observations were designed to have as little effect as possible on everyday classroom practices. Also, with regards to personal bias issues, observations were not carried out to test a hypothesis, for instance to prove that any one Engagement Pedagogy Type was more effective than other in engaging children, but as part of an exploration into teachers' conceptions and strategies, minimising the likelihood of bias data collection and analysis.

Some critics of the method have remarked that no attempt is made to use instruments of precision to check the accuracy of the phenomena (Young, 1953). However, in this study this issue was directly addressed by testing the accuracy of the observational engagement measuring tools, which had been found to be both reliable and valid. Meanwhile, observations were not carried out by more than one observer so notes were not subject to discrepancies between observers. Video Enhanced Observation added an additional mitigating factor by recording the lesson so notes could be added to after the observation.

6.2.4 Video Enhanced Observation (VEO)

VEO, or Video Enhanced Observation, is an iPad application (app) designed by Jon Haines and Paul Miller for teachers to record their own lessons for self-reflection purposes. It is yet to be used for research purposes in the field of education. VEO records and stores footage securely and allows tags to be added during and after the recording. The on-screen sliding engagement scale from 0% to 100% feature allowed for incidents of unusually high or low engagement levels to be quickly referred to post-observation to aid writing Vignettes (see Appendix 4). As a portable tool, with a zoom feature it allowed the researcher to move around the classroom and record subtle indicators such as facial expression, teacher positioning and gestures. Ethical approval was granted on the basis that children would only be recorded from behind. Although the blur feature made it impossible for students to be identified, it was felt that schools would more readily participate with this added assurance.

It should, however, be noted that, should there be facial indicators of expression amongst the children, these would not be recorded. To offset this, written notes were used.

6.3 The Engagement Tool

An observational 'measurement' tool were devised to incorporate both intellectual and emotional engagement. This tool was desinged after reviewing *Measuring student engagement in upper elementary through high school: a description of 21 instruments* (Fredricks, Mcolskey, Meli, Mordica, Montrosse & Mooney, 2011). The work of Fredricks *et al.* appears to be the only comprehensive review of existing classroom measuring tools. Its variety of instruments yielded hundreds of indicators which could be used to measure engagement. As the engagement tool in this study was for use in primary schools, some indicators and descriptors were immediately discounted, as they applied to older students, such as *The High School Survey of Student Engagement (HSSSE*). Meanwhile, this study required a tool that could realistically be used children from each ability group (two males and two female pupils from each ability group). Some tools, meant for student self-report, had too many questions to be turned into indictors for an observational measuring tool (RAPS-S for instance has 84 items). It was decided therefore to modify a range of existing tools to produce one that was simple to use for both researcher and teacher. This tool consisted of ten indicators, five relating to emotional engagement and five relating to intellectual engagement (see Table 6.3). The terms 'LA', 'MA' and 'HA' refer to the ability level of the sampled group of children; Lower Ability; Middle Ability; and, Higher Ability. M and F refer to whether the child is male or female. The inclusion of ability level on the measurement tool was used to assess where teachers' pedagogies were more engaging for some Abilities than others[2], whilst the inclusion of the child's sex enabled an exploration of whether gender affected engagement or teachers' responses. The mark for each of the ten indicators could range from 1 – 5, and is detailed in Table 6.2 Descriptor marking.

[2] Ability was determined by the teacher. Generally Lower Ability children are those who are working below expected standards for their Year Group, Middle Ability children are those working at the expected standard and Higher Ability are those exceeding the expected standard.

Table 6.2 Descriptor marking

Mark	Meaning
1	Strongly disagree
2	Disagree
3	Neither agree nor disagree
4	Agree
5	Strongly agree

Table 6.3 Engagement Measurement Tool

	Emotional Climate					Cognition				
	1. They enjoyed today's lesson	2. They respected me/ the teacher	3. They worked well with peers/	4. They found the lesson exciting	5. The interaction between myself & the child was positive	6. They asked relevant questions	7. They found the lesson interesting	8. They checked their work for mistakes	9. They achieved the learning objective	10. They tried their hardest
LA1M										
LA2M										
LA1F										
LA2F										
MA1M										
MA2M										
MA1F										
MA2F										
HA1M										
HA2M										
HA1F										
HA2F										

Underpinning this tool was the belief that it should be usable by both teacher and researcher in order to provide comparability between how both parties interpreted engagement levels in mathematics and English lessons, with minimal variations. It was decided that a tool that could be used in both mathematics and English lessons, and for other National Curriculum lessons to be measured at a later date, if necessary would be useful. In terms of the study's credibility it was important that the tool was both reliable and valid (Coolican, 2004). These terms are explained below, along with details of how both components were achieved in relation to the measuring tool.

6.3.1 Reliability

Reliability can be defined as a tool's ability to measure consistently, that is, 'Does it produce the same readings in the same circumstances?' (Coolican, 2004, p.33). In this study, a second observer was enlisted to be present at one of the observation sessions. The second observer was chosen because she was a recently retired teacher with over 20 years of primary school teaching experience. While a high correlation between observers does not necessarily mean each observer is observing and categorising correctly it does mean that they are consistent as a group (Coolican, 2004, p.23). In this case, the reliability coefficient was 0.86 (on a scale of 0 to 1.00), a score normally considered to indicate a high level of reliability (as in Table 6.4).

Table 6.4 Reliability coefficient value and interpretation table

Reliability coefficient value	**Interpretation**
.90 and above	Excellent
.80 - .89	Good
.70 - .79	Adequate
Below .70	May have limited applicability

6.3.2 Validity

Validity can be defined as an instrument's ability to measure what it is intended to measure (Coolican, 2004, p.33). In this study the measuring tool was devised to measure characteristics of engagement, with the assumption at particular behavioural indicators can demonstrate intellectual and emotional engagement. The tool passed face validity with those who saw the tool agreeing that it looked to them to be appropriate (Asher, 1996). In addition, 0the tool was based on previously used, established engagement measuring instruments meaning that the descriptors, or a similar variation of the descriptors had been used in previous research, including the regularly used Research Assessment Package for Schools (RAPS). When considering both reliability and validity evidence from existing studies, it is important first to consider the suitability of transporting the test from previous research. In this case, it was decided that using some indicators that had been used in previous studies was appropriate. Firstly, the established tools had been specifically designed for the same purpose – measuring pupils' engagement levels – and secondly, they had been used in a classroom environment. Although, some of the studies had descriptors which were meant for the student to respond to themselves, wording was easily modified so they could be used by the teacher and researcher. The table below (Table 6.5) details where each descriptor originated alongside its original wording.

Table 6.5 - Origins of each indicator

	Indicator	**Origin**
Emotional	1. They enjoyed today's lesson	RAPS (Question 18)
	2. They respected me/ the teacher	RAPS (Questions 14,33,65)
	3. They worked well with peers	SPQ(3)
	4. They found the lesson exciting	RAPS (Question 35)
	5. The interaction between myself & the child was positive	RAPS (Questions 38, 49 and 68)

Intellectual	6. They asked relevant questions	RAPS (Question 45) Classroom AIMS
	7.They found the lesson interesting	RAPS (Question 14)
	8. They checked their work for mistakes	RAPS (Question 23)
	9.They achieved the learning objective	RAPS (Question 14)
	10. they tried their hardest	RAPS (Question 3) Engagement Versus Disaffection (EVSD), Academic Engagement Scale (ccSr/aeS)

6.3.3 Documents

The collection of particular documents provided a context for each of the observations. Documents provide a convenient and easily available source of data (Merriam, 1988), particularly now that many are freely available online, such as school league tables and OFSTED inspection reports. Documents used in this study include the school's most recent OFSTED report for information on each school's demographic, and OFSTED grading, the teachers' ability grouping documents for Mathematics and English, and basic biographical information for the sampled children (Gender, Pupil Premium status, and English as an Additional Language (EAL) status). The gathering of these documents allows engagement levels to be viewed in context. Teachers who were observed were chosen because of their expressed preference for a type of engagement. However, in order to make results as relatable to potential users as possible (Bassey, 1990), it was decided that it would be beneficial if these teachers were sampled from a range of schools that represented various socio-economic demographics. The collection of OFSTED reports for these schools ensured that selected teachers did not all teach in similar schools. For anonymity purposes, these reports are not included in the appendices.

6.3.4 Critique and Limitations

A limitation of document collection is that in most cases, the documents have not been written with the intention of being used in research. Their accuracy and terms and use may not be specific or may vary somewhat from those being used by the researcher. However, in this case, the documents used provide context and have not been used to assess teachers' conceptions of engagement, thus resolving the dilemma of using documents which may not use the same definitions.

6.4 A Pilot Study

A pilot study was conducted prior to the five classroom observations. Pilot studies can refer to so-called feasibility studies which are "small scale version[s], or trial run[s], done in preparation for the major study" (Polit *et al*., 2001, p.467 in van Teijlingen & Hundley, 2001). Alternatively, a pilot study can refer to the pre-testing or 'trying out' of a particular research instrument (Baker 1994, p.182-3). The latter motivated the use of a pilot study in this case. The pilot was used to determine the suitability of the teacher measuring tool and the use of the recording app, VEO (as described above). It was envisaged that potential problems may arise in the following areas:

1. That the 10 point measuring tool for teachers might be too time consuming with the desired 12 pupil sample.
2. Tracking 12 children may be too ambitious for the researcher.
3. The reliability of VEO and the iPad for consistent use throughout the day.

6.4.1 Issues arising from the pilot study and solutions

Several issues emerged from the pilot. The first envisaged problem (point 1) was indeed slightly problematic. It was not that the teacher found the 10 point measuring tool too time consuming, but, that they found it hard to remember each of the 12 sampled children's engagement levels. The second issue, related to point 3. Although VEO worked reliably, the

battery life of the iPad was not sufficient to record both lessons and had to be charged between lessons. The envisaged potential problem documented in Points 2 was not an issue and it was found that a sample group of 12 children was manageable for the researcher. In addition, although teachers had been told about VEO in advance, some teachers were wary of children's faces being recorded due to safeguarding issues for particular children. Although these teachers were reassured that all recordings would be saved in a heavily pixelated version, they asked if recordings could be done from the back of the room. Had this been done, the researcher would have been unable to move during the lesson and therefore would have been unable to gauge some children's engagement levels. For this reason, VEO was not used in three of the 10 classrooms.

It was decided that the measuring tool for the teacher be slightly changed to provide a solution to problem 1. As Figure 6.1 Final Teacher Measurement Tool illustrates, rather than the teacher give a score for each of the twelve sampled children against the ten indicators, it was decided they would give a score for overall class engagement in each lesson. The teacher used in the pilot, found this solution to be helpful and felt that their perceptions of overall class engagement would be more accurate than for twelve individual children.

Figure 6.1 Final Teacher Measurement Tool

	Emotional Climate					Cognition				
	1. They enjoyed today's lesson	2. They respected me	3. they worked well with peers/	4. They found the lesson exciting	5. The interaction between myself & the child was positive	6. asked relevant questions	7. they found the lesson interesting	8. they checked their work for mistakes	9. They achieved the learning objective	10. They tried their hardest
Mathematics										
English										

6.5 Results

Results are presented first with an overview of each mini case study; comprising contextual information, brief biographical information of the teacher and a summary of each observed lesson. Incidents of notably high or low engagement measured during the lesson were noted and formed Vignettes (these can be found in Appendix 4 with completed copies of teacher and researcher measuring tools). Results are then presented by ability level.

6.5.1 Teacher Type 1 (a): Category 1- Fun and exciting

The first of two Engagement Pedagogy Type 1 (Fun and exciting) teachers to be observed was female with two years teaching experience. She described her job satisfaction level as quite high and due to staffing issues at the school had been dividing her time between teaching the Year 4 class that was being observed with covering other classes across the school. The teacher felt that due to this, she did not feel she had got to know the class as well she would normally have by that point in the academic year (early July). The teacher described the behaviour of the children as fairly good, although she said they were 'quite chatty'. The school was a faith school in the Midlands with a higher than average proportion of children had English as an additional language (EAL).

The observation took place on an exceptionally hot day, which led to some children asking 'off-task' questions, such as, asking if they could refill their water bottle or open the window. These incidents were therefore not factored into researcher scores.

6.5.1.1 Description of observed English lesson

The observed lesson's objective was for children to consider persuasive forms of writing to produce an advertising poster for a product using persuasive language and images. The initial, whole class input saw the teacher ask children about the elements they would expect to see in persuasive writing, before telling the children that their task was to produce a poster

advertising a product using persuasive writing conventions. The teacher asked each child to pick an item from a bag; the children were unable to see the item until they had picked it from the bag. The chosen item was the item children had to advertise.

6.5.1.2 Description of observed mathematics lesson

The observed lesson was used for children to apply their knowledge of how to multiply three digit numbers by four digit numbers. Children worked in groups sorting through triangles with a multiplication sentence on each edge. Once the children had worked out the answer they had to match the edge of the triangle with that equation to another triangle edge with a different multiplication sentence but the same answer.

6.5.1.3 Findings for Teacher 1a lesson observations

The teacher successfully achieved a sense of fun and excitement during the English lesson by giving each student an item ('product') that was of interest to children of their age, such as gobstopper sweet or slime, to advertise. Many of the children appeared to find the mathematics activity fun, although its challenging nature and reliance on collaboration seemed to frustrate some of the less proficient children. Although the teacher's expressed engagement strategy was to induce fun and excitement, it was here within the context of problem solving. Problem solving, however, was not a means of engagement for this teacher, simply the basis of an activity which was intended to offer fun and excitement.

The emotional engagement was one of fun and excitement in both lessons (both scoring 4.6 out of 5, on average). For example, 'They enjoyed today's lesson', and, 'They found the lesson exciting', were scored at 4.8 and 4.0, respectively. The intellectual engagement was rated as 4.0 and 3.9 for the English and mathematics lessons, respectively.

6.5.2 Teacher Type 1 (b): Category 1- Fun and exciting

6.5.2.1 Contextual information

The second of two Engagement Pedagogy Type 1 (Fun and exciting) teachers to be observed was a female teacher with over 20 years teaching experience. She said they had a high level of job satisfaction and a good knowledge of the class because she had previously taught the children when they were in Year 3. She felt the behaviour of the class was mixed, but that none was particularly disruptive.

The school was in the North East of England and was of average size. There was a slightly higher than average number of children entitled to free school meals (FSM) and an average number of children with Special Educational Needs (SEN) and lower than average numbers of EAL pupils.

6.5.2.2 Description of observed English lesson

The observed lesson was aimed at developing children's knowledge of prefixes and suffixes. The lesson began with a game on the interactive white board where children took it in turns to choose the correct prefix for root words. The main lesson activity involved children selecting prefix and suffix cards from the centre of the table and having to incorporate them into sentences. The theme of the sentences had to be based on the book the children were studying, David Walliam's *Gangster Granny*.

6.5.2.3 Description of observed mathematics lesson

The observed mathematics lesson was aimed at consolidating children's knowledge of fractions. Children worked in pairs constructing Lego towers to illustrate what a particular fraction looked like.

6.5.2.4 Findings for Teacher 1b lesson observation

The use of Lego generated a sense of fun amongst the children and some were quite excited to use it. One Lower Ability child was slightly too excited, and had to be told by the teacher to use the bricks appropriately, after which he did so.

The emotional engagement was one of fun and excitement in both lessons, particularly for mathematics which had an average score of 4.7. The intellectual engagement was rated as 4.0 and 4.2 for the English and mathematics lessons, respectively.

6.5.3 Description of observation of Engagement Pedagogy Type 2- Problem Solving Teacher 2(a)

6.5.3.1 Contextual information

The first of two Engagement Pedagogy Type 2 (Problem solving) teachers to be observed was a male teacher with over three years teaching experience. He said they had quite a high level of job satisfaction despite describing the class as quite challenging due a range of ability levels and the number of children with EAL and SEN.

The school was on the outskirts of a city in the Midlands and had a larger than average number of pupils. Although the school had a two-form entry (two classes per year group) class numbers were high with 30 children in the observed Year 4 class. There was a higher than average number of children entitled to free school meals (FSM) and with Special Educational Needs (SEN). Approximately 80% of pupils had English as an Additional Language.

6.5.3.2 Description of observed English lesson

The observed lesson was based on a drama activity reflecting street life at the time of the Great Fire of London. The lesson started with a short film of a virtual street tour of 17th century London. Children then worked in mixed ability groups to create a scene and then performed it for the rest of the class at the end of the lesson.

6.5.3.3 Description of observed Mathematics lesson

The observed mathematics lesson was longer than an average mathematics lesson, lasting for 90 minutes. The starter activity was therefore longer than other observed lessons and this was the only lesson which did not start with a teacher led whole-class input. Instead the first part of the lesson involved children being challenged to create a symmetrical collage using 'jewels'. In the main activity, children worked in pairs, using manipulatives to show how multiplication methods work. The two most able students used an iPad to make a video explaining how multiplication worked independently from the rest of the class in an adjoining room.

6.5.3.4 Findings for Teacher 2(a) lesson observations

The mathematics lesson incorporated problem solving in both the main activity and also a brief starter activity at the beginning of the lesson. The paired work for all abilities meant collaboration was a key factor in ensuring learners met the learning outcome, this was also a feature in the English lesson.

Both lessons involved problem solving in that the children had to find their own ways of doing the tasks and finding their own solutions. The emotional engagement (4.6 and 4.5, on average) was similar in both lessons, while the intellectual engagement was, on average, 3.9 (English) and 4.3 (mathematics).

6.5.4 Description of observation of Engagement Pedagogy Type 2- Problem Solving Teacher 2(b)

6.5.4.1 Contextual information

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The second of two Engagement Pedagogy Type 2 (Problem solving) teachers to be observed was a female with 15 years teaching experience. She said she had quite a high level of job satisfaction, but that it had fallen in recent years as she felt there was greater pressure to 'teach to the test'. The teacher said the class behaved well and that even the children in the Lower Ability group would meet the end of year academic targets.

The school was situated in an affluent suburban area in the East of England. There was a lower than average number of children entitled to free school meals (FSM) and an average number of children with Special Educational Needs (SEN). The school had lower numbers of children with English as additional language

6.5.4.2 Description of observed English lesson

The lesson began with a whole class input looking at examples of descriptive language. The main activity involved children reading through 'character clues' and matching them to the correct character, before writing character clues for their friends to read and match. Children peer marked their partner on how rich their description was and how easy it was to identify the character.

6.5.4.3 Description of observed Mathematics lesson

The mathematics lesson was part of a series of lessons based on fundraising for the school. The lesson starter required children to think of as many ways as possible to reach a particular number which the teacher had written on the interactive whiteboard (IWB). For the main activity children worked in mixed ability groups.

6.5.4.4 Findings of Teacher 2(b) lesson observations

The average emotional engagement was rated as 4.2 (English) and 4.2 (mathematics). The average intellectual engagement was rated as 4.5 (English) and 4.9 (mathematics). The Higher Ability children found the mathematics lesson particularly interesting, all scoring 5 for the intellectual indicators, and an average of 4.8 for the emotional indicators.

6.5.5 Description of observation of Engagement Pedagogy Type 3- Rewards System Teacher 3(a)

6.5.5.1 Contextual information

The first Type 3 (Rewards System) teacher to be observed was a female teacher with five years teaching experience. She described her job satisfaction as very low and was actively looking for a new role in another school. The teacher described the class as 'a bit unruly' and suggested it may be due to the school being situated in a deprived area and many of the children coming from unsettled family backgrounds.

The school was situated on the outskirts of London and was a three-form entry school. The percentage of children entitled to Free School Meals, as well as those with Special Educational Needs and English as an Additional Language was higher than the national average.

6.5.5.2 Description of observed English lesson

The observed lesson began with a whole class input on adjectives, with children having to write adjectives to match the various pictures displayed on the interactive whiteboard. The main activity involved a storyboard activity where pupils had to write sentences under pictures taken from an Anthony Browne book, with the learning objective being to use adjectives to write descriptive sentences.

6.5.5.3 Description of observed Mathematics lesson

The observed lesson saw children plotting coordinates on a grid and connecting them to reveal a shape. Higher Ability children were plotting coordinates in four quadrants rather than one or two. Children worked alone, rather than in pairs or groups, however the Lower Ability children were supervised by a teaching assistant.

6.5.5.4 Findings of Teacher 3(a) lesson observations

The teacher referred to the reward system regularly throughout both lessons, but more so in English when the teaching assistant was not in the classroom. Rewards (stickers which went on a leader board at the front of the class) were given to those who remained on track throughout the lesson toward the end of the main activity, and also throughout the lesson after relatively small intervals for pupils who seemed to find it hard to concentrate. The Higher Ability children did not ask for a sticker, nor did many of the Middle Ability children, however the pupils in the Lower Ability set asked numerous times for a stickers to the point it seemed to detract from their work rather than engage them in it.

The average emotional engagement was rated as 3.8 (English) and 4.2 (mathematics). The average intellectual engagement was rated as 3.5 (English) and 3.9 (mathematics). For the Higher Ability children, '*They found the lesson interesting*', was rated much lower than for the other children (e.g., English, higher ability: 3.4; others: 4.3). They were, however, quietly compliant, and the teacher could safely give them less attention than the rest of the class.

6.5.6 Description of observation of Engagement Pedagogy Type 3 Rewards System Teacher 3(b)

6.5.6.1 Contextual information

The second Type 3 (Rewards System) teacher to be observed was a female teacher with over 20 years' experience. She described her job satisfaction as neutral. The teacher said the class were quite well behaved but lacking in motivation.

The school was smaller than average and situated in a semi-rural area of North West England. The percentage of children entitled to Free School Meals was similar to the national average, this was also the case with children entitled to Free School Meals. There was a lower than average percentage of children with English as an Additional Language.

6.5.6.2 Description of observed English lesson

Due to sports day practice having taken place the day before, children continued with the work they had started two days before so there was only a brief review by the teacher at the start of the lesson, as opposed to a structured starter activity. Children worked independently, completing a reading comprehension activity. Each Ability group has a different comprehension passage.

6.5.6.3 Description of observed Mathematics lesson

The lesson began with what the teacher described as 'table challenges'. Each ability group was based on a different table (one Lower Ability Table, two Middle Ability tables and one Higher Ability table). The table that completed their worksheets first won table points (the Rewards System was based on individual and table points). The main activity was aimed at consolidating children's knowledge of adding fractions, with children completing equations in their exercise books.

6.5.6.4 Findings of Teacher 3(b) lesson observations

The Rewards System approach used by this teacher was clear, with children's names being laminated and pegged to an achievement chart. The higher up the chart a child's name was by the end of the day the more raffle tickets they would get at the end of the day for a weekly draw to win a small prize. Children were frequently reminded of the reward incentive throughout both lessons. Some of the children appeared to be more motivated than others by the system. Middle Ability children, seemed pleased to be rewarded, and worked well throughout the lesson. Some of the Lower Ability children were heard to ask the Teaching Assistant several times about when they would get a reward.

6.5.7 Description of observation of Engagement Pedagogy Type 4- Practical, hands on Teacher 4(a)

6.5.7.1 Contextual information

The first Type 4 teacher to be observed was a female with 20 years teaching experience. She described her job satisfaction level as very high. Due to the school being much smaller than average, some of the pupils in her class were Year 3 pupils. She felt the overall behaviour of the class was very good.

The school, situated in North East England, had a lower than average number of children receiving Free School Meals and a lower than average number of children with English as an Additional Language and Special Education Needs.

6.5.7.2 Description of observed English lesson

The lesson had a starter activity using a video from Kung Fu Punctuation on YouTube, a channel designed for children refresh their knowledge of punctuation by using martial arts inspired movements. The main activity was to write a conversation between two characters based on an illustration shown by the teacher.

6.5.7.3 Description of observed Mathematics lesson

The observed lesson saw children refresh their knowledge of symmetry by making shapes with their bodies and their partner taking a photograph of them. The children had to make both symmetric and asymmetric shapes. Children then drew lines of symmetry on the photographs they felt showed symmetrical shapes. The main activity saw children work in ability groups investigating how many lines of symmetry 2-D shapes had.

6.5.7.4 Findings of Teacher 4(a) lesson observations

This teacher's practices most reflected her expressed engagement category. Practical activities were clearly paramount in the teacher's mind and planning. Active participation formed three out four of the class activities. Engagement levels in the class remained high

throughout both lessons although there were periods in the main activity where the higher ability group seemed bored and started chatting about subjects unrelated to the lesson.

On average, engagement levels were rated as: emotional, 4.3 (English) and 4.5 (mathematics); intellectual, 3.9 (English) and 4.0 (mathematics). There were times when the higher ability group seemed to be bored and inclined to find interest off-task. (Hands-on or practical activities were also used by other teachers, but they were incidental to the approach, not central to it.)

6.5.8 Description of observation of Engagement Pedagogy Type 4- Practical, hands on Teacher 4(b)

6.5.8.1 Contextual information

The second of the two Type 4 teachers was a female with four years teaching experience. She described her job satisfaction level as quite high and said the children were the most well-behaved class she had taught since joining the profession.

The school was an average sized Voluntary Aided Catholic school in North Yorkshire. There was an average number of children eligible for Free School Meals and a slightly lower than average number of children with Special Educational Needs and English as an Additional Language.

6.5.8.2 Description of observed English lesson

The lesson was linked to the Shang Dynasty topic the children were studying in History. The children had to write a poem about the era and the teacher provided them with some ‘artefacts’ to inspire their writing. These included Tupperware boxes with scents inside, pieces of silk cloth and some replica archaeological finds.

6.5.8.3 Description of observed Mathematics lesson

The observed lesson saw children try and recreate 3D shapes using lollypop sticks and hot glue guns. The teacher told me this lesson was designed to consolidate their learning and encourage them in using mathematical langue, such as ‘verticies’ and ‘edges’. Due to the resources being laid on tables prior to the start of the lesson when the children were on break, there was no starter activity.

6.5.8.4 Findings of Teacher 4(b) lesson observations

This teacher’s approach certainly incorporated a ‘practical/hands on approach, particularly in the mathematics lessons. In the English lesson artefacts were used as initial stimulus for writing, whereas the mathematics lesson involved practical work throughout.

Overall, engagement levels in both lessons were quite high with only one child (LAM2) scoring some 2 and 3s in English against several indicators.

6.5.9. Description of observation of Engagement Pedagogy Type 5 (a) - Independent, child-led

6.5.9.1 Contextual information

The first of the Type 5 teachers to be observed was a female teacher with approximately 20 years’ teaching experience. She described her job satisfaction as quite high. The average sized school was based in a sub-urban area of North East England. There was an average percentage of children entitled to Free School Meals and with Special Education Needs and a lower than average percentage of children with English as an Additional Language

6.5.9.2 Description of observed English Lesson

The observed lesson was one in a series that week in which children were researching a sportsperson of their choice in order to produce a biography. The start of the lesson was a whole-class review of features of a biography. The main activity involved pupils using laptops to research facts independently and makes notes to inform the biography which they would write later in the week.

6.5.9.3 Description of observed Mathematics lesson

The teacher said the children had been introduced to adding fractions the previous day, and therefore the observed lesson saw children work on numerous additions using fractions after a brief starter reminding children of the procedure. An extension activity was then provided involving a series of word problems which the teacher said had come from the nrich website[3].

6.5.9.4 Findings of Teacher 5 (a) lesson observations

There was certainly a sense in the English lesson that the teacher was facilitating independent, child-led research. Engagement levels were high, particularly high among the Higher Ability children, during the English lesson, but fell overall in the mathematics lessons, especially among the Lower and Middle ability children. It appeared the level of challenge was too high for many of the children leading to them becoming bored and distracted whilst waiting for help from the teacher.

Engagement levels were rated as: emotional, 4.3 (English) and 4.5 (mathematics); intellectual, 4.2 (English) and 4.7 (mathematics). Generally, Higher Ability children responded well to this approach with uniform scores of 5.0.

6.5.10 Description of observation of Engagement Pedagogy Type 5 (b) - Independent, child-led

6.5.10.1 Contextual information

The second observed Type 5 teacher was a male teacher with eight years' experience. He described the class as quite well behaved and felt this may be due to the relatively small class size (seventeen children) and said he had a high level of job satisfaction. The school was

[3] Nrich is a website constructed by Cambridge University and is part of a several initiatives stemming from The Millennium Mathematics Project (MMP).

located in the South West of England and was a smaller than average faith school. There was an average percentage of children entitled to Free School Meals and with Special Education Needs and a lower than average percentage of children with English as an additional Language.

6.5.10.2 English

The teacher explained that the English lesson was linked to a history re-enactment the children had been part of the previous week, when an external company had staged an 'Ancient Greek Day'. The children were writing a diary based on one of the Greek characters; they were able to choose a character of their choice.

6.5.10.3 Description of observed Mathematics lesson

The mathematics began with a whole class quiz (differentiated by Ability) on multiplication and division. The children then worked in pairs making a marble-run from craft materials. They had to investigate which angles worked well for the marble to roll down the various parts of the run.

6.5.10.4 Findings of Teacher 5 (b) lesson observations

Engagement levels were rated as: emotional, 4.7 (English) and 5.0 (mathematics); intellectual, 4.2 (English) and 5.0 (mathematics)[4]. Generally, Higher Ability children responded well to this approach with uniform scores of 5.0.

6.6 Discussion

[4] Due to the high engagement levels in Mathematics there are no Low engagement Vignettes for Teacher 5b's mathematics lesson in Appendix 4.

Here, the findings from Stage Three are discussed in relation to each of the Research Questions which this stage of research sought to answer. Further discussion takes place in Chapter Seven: Overall discussion.

6.6.1 What are teachers' practices regarding pedagogies of engagement?

Teachers' practised engagement pedagogies reflected their expressed pedagogies. Teachers who used a Fun and Exciting approach tended to focus on using resources to induce these emotions in learners; teacher adopting a Problem Solving approach were observed to use tasks in mathematics that encouraged divergent thinking and encourage a 'trial and error approach; teachers who used a Rewards System approach referred to the incentive throughout the lesson to encourage learners to stay on task; practical hands on teachers appeared to use activities where children were physically active or physically interacting with resources; teachers using an Independent, child-led approach were seen to give children the greatest choice in how they achieved the learning objective. On occasions, one type of teacher might use a different resource, strategy, or approach in addition, but this was not for the purpose of inducing engagement.

As expected, there were some overlaps between approaches, for instance, the mathematics lesson delivered by the Type 1 (Fun and exciting) teachers involved a collaborative problem solving activity. In addition to specific Engagement Pedagogies, teachers also used what could be called 'non-Type specific strategies'. These are displayed below in Table 6.6 Non-Type specific strategies. Periods of questioning often saw engaging levels rise. Humour was used effectively by half of the teachers and raised emotional engagement levels. Seating plans i.e. teachers grouping or re-grouping children, and teacher or teaching assistant positioning seemed to be used to primarily support behavioural engagement, but was also observed on occasions to increase cognitive engagement (see Appendix 5 Vignettes 1(a)) .

Table 6.6 Non-Type specific strategies

	Non-Type Specific Strategy			
Teacher	Questioning	Teacher/ Teaching Assistant positioning	Humour	Seating plan
1 (a)	✓			✓
1(b)	✓	✓	✓	
2 (a)	✓	✓	✓	✓
2(b)	✓			
3(a)		✓		✓
3(b)	✓		✓	✓
4(a)	✓		✓	
4(b)				✓
5(a)	✓	✓		
5(b)	✓		✓	

6.6.2 Match or Mismatch – links between rhetoric and practice?

Previous research has pointed to teachers' beliefs being influenced how they teach (see e.g., Richardson *et al*., 1991; Stipek *et al*., 2001). As far as the planning and delivery of a lesson is concerned for those teaching in state maintained primary schools in England, such as those observed, the content is generally prescribed, but there is some freedom in how it is taught. . One of the aims of Stage Three was to carry out lesson observations was to explore whether there was a match or mismatch between the type of engagement pedagogy teachers said they used, and the type of engagement pedagogy they did use. Given that student engagement is commonly seen as promoting learning and attainment, teachers' beliefs about it were reflected in their practices.

6.6.3 Does the practiced pedagogy of engagement change with subject (mathematics/ English)?

Results of Stage Two, the online questionnaire revealed that teachers felt that certain subjects were more engaging than other subjects. Whilst there was general consensus that Science, Physical Education and Art were engaging teachers were more polarised regarding mathematics and English. However, none of the surveyed teachers mentioned in the open text box whether they varied their pedagogy depending on curriculum subject. An aim of observing teachers was to explore whether teachers' practised engagement pedagogy changed depending on whether they were teaching mathematics or English. Broadly speaking, engagement pedagogies did not change between lessons, however, teachers who subscribed to the Type 2 Problem Solving Engagement Pedagogy found it harder to incorporate problem solving into their English lessons, whereas their mathematics lessons were underpinned by their approach.

6.6.4. Does the practiced pedagogy of engagement change with children's ability?

Teachers' Engagement Pedagogies did not change with ability. For instance there were no teachers who changed their predominant strategy for each ability, such as, adopting a Type 5, Independent, child-led approach for giving Higher Ability children; a Fun and Exciting, Type 1 approach for Middle Ability children and a Type 3 Rewards System for Lower Ability children. Changing engagement pedagogy was not expected for the initial, teacher-led, whole class input which typify most primary school lessons. However, it was hypothesised that activities may be quite distinct between ability groups. In the observed lessons, however, although there was differentiation in difficulty between ability groups, and the predominant engagement approach remained the same. Half of the observed teachers appeared to focus more on the behavioural engagement of Lower Ability children than Middle and Higher Ability children (Vignettes 1(a), 2(a), 4(b)).

6.6.5 Does the practiced pedagogy of engagement change with children's gender?

The practised pedagogy of engagement did not appear to change with children's gender and was aligned with teachers' expressed engagement pedagogies. The only observed

difference between teachers' approach to boys and girls was that three of the teachers appeared to focus more on boys' behavioural engagement than girls' (Vignettes TT 2 (a) Mathematics, 3 (b)). In these cases, the teacher did not change their predominant Engagement Pedagogy Type but were more likely to discipline a male pupil for low-level disruption than a female pupil displaying the same behaviour.

6.6.5 Can teachers gauge engagement?

Teachers appeared to be able to gauge engagement levels better amongst some groups of learners, than others, and, in English lessons more than mathematics lessons. Teachers' whole class scores tended to be closest to the scores given by the researcher for Middle Ability children. Teachers' measurement scores and the researcher's measurement scores were averaged for each indicator and correlations between the two calculated. The higher the correlation coefficient, the more agreement with the judgement of the teacher, as shown below in Table 6.7. Correlation coefficients between 0.5 and 0.7 are considered to be moderate (these are highlighted in yellow on the table). Correlation coefficients between 0.7 and 0.9 are highly correlated (these are also highlighted). (Given the nature of the data (e.g. sample size), great weight should not be attached to any statistical significance of these figures. The coefficients serve only as pointers to agreement.)

Table 6.7 Correlations between average teacher score and average researcher score for each ability group

		Mathematics			English		
		LA	MA	HA	LA	MA	HA
Emotional engagement indicators	They enjoyed today's lesson	-0,02	0.02	0.18	0.07	0.76	0.36
	They respected the teacher	0.27	-0.07	0.4	0.08	-0.13	0.03
	They worked well with peers	0.42	-0.63	0.12	0.08	0.13	-0.19
	They found the lesson exciting	0.63	0.34	-0.26	0.62	0.75	0.62
	The interaction between child & teacher was positive	0.23	0.27	0	0.39	0.44	0.49
Intellectual Engagement Indicators	They asked relevant questions	0.03	0.63	0.05	0.85	0.76	0.74
	They found the lesson interesting	0.51	-0.41	0.34	0.56	-0.04	0.31
	They checked their work for mistakes	0.62	-0.15	0.26	0.8	0.81	0.85
	They achieved the learning objective	0.46	0.04	0.61	0.61	0.09	0.23
	They tried their hardest	0.31	0.43	0.1	0.61	0.56	0.74

Overall, there was a higher correlation between the researcher's and teachers' scores when measuring cognitive, as opposed to emotional engagement levels as illustrated in *Table 6.8* (above). Pupils asking relevant questions and checking their work for mistakes were the indicators with significantly high correlations, particularly in English lessons, with high correlation between the researcher and teachers for Lower, Middle and Higher ability groups. Indeed, correlations between researcher and teacher scores were higher for English lessons than mathematics lessons. One explanation for this is that during mathematics lessons teachers tended to assign one or more teaching assistants to work with a particular ability group of children, making their whole class score more likely to be based on the groups that they worked with and therefore lacking in accuracy for the class as a whole. Another explanation is that the

lack of high correlations, particularly with regards to emotional engagement, between the researcher and teacher in mathematics lessons, suggests the teachers are not seeking these particular indicators of engagement. Interestingly, the only indicator with high correlations for two of the three ability groups in mathematics was '*They achieved the learning objective'* which suggests teachers see succeeding in this subject as simply getting through the work without a particular need for pupils to be emotionally or cognitively engaged. Results also indicate that teachers appear to be seeking different indicators of engagement depending on whether they are teaching English or mathematics. Emotional engagement seemed to be sought more by teachers in English lessons, with teachers' scores aligning more closely with the researcher's scores in this subject.

In some incidences, there was a negative correlation between the researcher's score and the teachers' scores. There are two possible explanations for this. Firstly, teachers had a tendency to underscore whole class engagement levels if the behaviour of one pupil, or a small number of pupils was poor. The indicator, *'They worked well with peers'*, for instance, had low levels of correlations, in this incidence it seemed teachers gave a low score overall if just one pair of children misbehaved. This was also found with the indicator, '*They respected the teacher/ me'* which yielded low or negative correlations. Teachers appear to underestimate general levels of how engaged pupils are if only one pupil, or a small number of pupils, respond negatively. This would suggest that for some teachers, behavioural engagement is sought more than emotional and cognitive engagement.

6.7 Summing up

Lesson observations were carried out to determine whether teachers' expressed Engagement Pedagogy matched their practiced Engagement Pedagogy, and to test the classroom engagement measuring tool. Overall, children were observed to be engaged in the ten English lessons and ten mathematics lessons. It was assumed that teachers who volunteered to take part in observations may be those who are not working in particularly disruptive classes, so the engagement levels in the observed classes may be higher than would have been found in a random sample. However, the range of teachers and schools selected ensured that, overall,

the schools were representative in terms of socio-economic demographical and teacher experience. Although, we must allow that teachers who felt they engaged children in learning would be more likely to participate.

It was found that the Pedagogy Type to which teachers subscribed was evident in many of the observed lessons. Teachers' Engagement Pedagogies did not change with children's ability or gender. Certain approaches seemed more effective with certain ability groups than others. Type 2 teachers who used a Problem solving approach and Type 5 teacher who used an Independent, child-led approach seemed to be particularly effective in engaging Higher Ability learners. The Type 3 Rewards System approach seemed to engage Middle Ability learners, but Lower Ability learners though incentivised by the rewards were distracted by whether or not the teacher had rewarded them, who was being rewarded and when they would get the reward. Meanwhile, Higher Ability children in both Type 3 classes did not seem to show any interest in the rewards.

Whilst the predominant Engagement Pedagogy did not vary depending on ability, teachers seemed to focus more on the behavioural engagement of Lower Ability children and male pupils, with Lower Ability boys being most admonished for low-level disruption indicating that some teachers are seeking behavioural engagement, or at least compliance, more than emotional and cognitive engagement. In some cases (see Appendix 5 - Vignettes) the emphasis placed on behavioural engagement seemed to be detrimental to both cognitive and emotional engagement. For instance, in the observation of Teacher Type 2(a) a Lower Ability boy was repeatedly told off for playing with blu-tac or his pen and rule, whilst a Higher Ability girl who was displaying similar behaviour was ignored. The boy, who had been attempting to answer questions and showing signs of interesting before the admonishments then began to lose interest and showed signs of disrespecting the teacher before ultimately being sent out of the classroom.

All teachers were able to use the measuring tool to give an overall score of 1-5 for the whole class. Two of the teachers were initially unsure as to whether 1 meant strongly agree or strongly disagree, despite a key provided on the sheet. This confusion raised the issue of

whether the scale could be adapted slightly for future use (see Appendix 6). Half of the observed teachers commented that just seeing the engagement tool led them to consider whether they were planning for opportunities for children to check their work and for collaboration. As discussed, overall, teachers seemed to give more accurate score for Middle Ability pupils, this could be due that lessons are aimed at engaging the average learner. Engagement scores were also more accurate for English lessons, rather than mathematics lessons, indicating that mathematics may be viewed as a subject where children needed to get the right answer.

The observations suggest that each identified Engagement Type pedagogy can be effective, but more for some children than others. At the same time, some areas of the curriculum and some kinds of learning may not lend themselves readily to these strategies, as was the case with using a problem solving approach, which fostered high engagement in mathematics but was less conducive to high engagement in English lessons. For instance, hands-on experience is not always feasible, and generating excitement can hinder analytical thought (Newton, 2014). Observations identified a need for teachers to be supported in varying their approaches rather than relying on a particular Engagement Pedagogy to appeal to the needs of all learners. The lesson observations, however, suggested that some popular strategies can induce greater emotional engagement than intellectual engagement (in the extreme, children may have fun yet learn little.) The optimum balance is unclear, but teachers need to be aware of the distinction. In the online survey of 600 teachers described in Stage Two, only about 10% of the teachers in the survey thought that their knowledge of engagement came from teacher training, and only 4% thought it came from on-the-job training. Usefully, there is evidence, although indirect, that teachers' engagement strategies can be enhanced through training (e.g. Devlin, 2005). There is clearly a need for programmes which include this crucial aspect of a teacher's work and which focus on:

1. What engagement and associated terms, like motivation, pedagogy of engagement, emotional and intellectual engagement, mean.
2. What can attract engagement in learning; personal relevance, need satisfaction and goal achievement, creative activity, and the role of teacher enthusiasm.

3. A recognition that perceived relevance can change with student, age, ability, and curriculum context, and that these need to be allowed for.
4. A range of strategies that exploit these attractions, and an avoidance of over-use of any one.
5. Understanding that some pedagogies are extrinsic (i.e. the attraction is attached to the topic, e.g. 'Fun', 'Rewards'); others are intrinsic (i.e. the attraction is within the approach, e.g. 'Problem-solving', 'Practical/hands-on', 'Independent' activity), and that they are not mutually exclusive.
6. Practice in selecting, developing, differentiating and applying strategies aimed at inducing engagement.

Chapter Seven:
Overall Discussion

7.1 Introduction

A comprehensive literature review revealed that teachers' notions of pupil engagement had been under researched. In addition, engagement in the primary phase was largely unexplored compared to other phases of education. From the literature reviewed, it was clear that there is little or no research into:

(i) What teachers think and do in terms of engagement in primary schools;
(ii) Where primary teachers' notions of engagement originate;
(iii) How flexible or variable teachers' notions and strategies are; and,
(iv) Whether teachers' notions and pedagogies of engagement vary depending variables, such as curriculum subject, pupils' gender and/or ability level.

Yet, with primary teachers having to teach a range of subjects, they provided the possibility to explore whether teachers' notions of engagement and classroom engagement strategies varied depending on subject area. To inform thought about such matters, two stages of data collection were carried out: namely, (i) teacher interviews and (ii) an online questionnaire. Following these two Stages, lesson observations were carried out to see teachers' strategies in action and explore whether a simple classroom tool to monitor engagement could be used to support teachers to reflect on their strategies. Additionally, a CPD

package was designed and tested, the details which can be found in Appendix 6. This supplementary step was taken to see if teachers' notions and strategies could be strengthened through a training event. Overall, data collection was designed to answer three key research questions:

1. What are teachers' notions of engagement?
2. What informs these notions of engagement?
3. How do they affect the strategies they use in the classroom?

This chapter brings together the findings, and relates and integrates them, and, where possible, triangulates findings from previous stages, and discusses them in relation to the three research questions.

7.2 Section One: The research questions

This section discusses findings in relation to the three main research questions by answering a series of sub questions.

7.2.1 What do teachers consider to be engagement?

Face-to-face interviews revealed that teachers found it hard to define engagement (Chapter Four). However, what they considered to be engagement became clear as interviews progressed, and they gave examples of lessons which they felt engaged learners. Such lessons were characterised by the children being on task, participating in the classroom activity and showing interest and/or enjoyment. None of the interviewed teachers used the terms 'emotional engagement' or 'cognitive engagement', yet implicitly it was clear that teachers appeared to consider engagement as predominantly either a cognitive or an emotional concept. For instance, while some teachers described lessons which focused more on cognitive needs, others spoke more about ways in which they planned lessons to meet the children's emotional needs. Comments regarding cognitive engagement could be grouped into two broad categories, reflecting the importance of:

1. An appropriate level of challenge for all children; and,
2. The ability of topics/activities to stimulate further enquiry.

Regarding emotional engagement, teachers' comments formed three categories reflecting the perceived importance of:

1. The general emotional wellbeing of children as influenced by home life;
2. Transient emotions of children influenced by physical factors, such as hunger, illness and fatigue; and,
3. Transient emotions of children triggered by events in school.

Other categories of engagement were also discussed in interviews. Teachers seemed to find it hard to separate behavioural engagement from other forms of engagement; children who conformed to classroom routines were often considered as therefore achieving the goal of cognitive or emotional engagement, depending on which type the teacher considered to be 'engagement'. Only three of the sixteen teachers discussed how relying on behavioural indicators to measure engagement can be unreliable as some pupils are compliant and know how to appear engaged but are not genuinely invested in the learning process. A small number of teachers discussed examples of what could be considered social engagement (Interviews 3, 4 and 12) and thought of engagement as partly the child's social interaction in various aspects of school life, such as after-school clubs, forming relationships with peers and adoption of the school's ethos. Although social interaction, in the form of collaboration with peers during lessons, was considered as conducive to engagement by several teachers, it was less discussed than expected. Six teachers considered physical engagement as important. These teachers viewed engagement partly as something which occurred when children had to physically move during lessons, such as during Physical Education or Art.

Despite various previous studies asking teachers to measure engagement (for example, Fredricks *et al*., 2005), no studies were found exploring what teachers consider as engagement in this phase of education. It is therefore not possible to make direct comparisons between the teachers who participated in this study with teachers who participated in previous studies. However, it is possible to discuss findings in relation to existing literature. Most of the interviewed teachers shared Kandel's view that constructing understandings needs a lot of mental engagement (Kandel, 2006), but they tended to consider that either emotional or cognitive, rather than both types of engagement as advocated by Kandel, would lead to this

focused mental effort. This subtle, but significant, difference was a characteristic of teachers' rather narrow and vague considerations. For instance, while various categories of engagement featured in the interviews when viewed collectively, teachers themselves seemed not to recognise that they were discussing various types of engagement. Indeed, none of the teachers interviewed spoke using terms which are frequently used in the engagement literature. The 'multidimensional' concept, as it is increasingly referred in the literature (Reschly & Christenson, 2012), neither used as a term, nor was it expressed in other ways.

That is not to say that teachers' considerations did not reflect the literature in some ways. Teachers who considered engagement as a cognitive concept saw planning an appropriate level of challenge for all children as important. Challenge, as discussed in the literature review, has been seen as an important factor in promoting successful learning amongst older learners and younger pupils (NSSE, 2006; Fredricks, 2004). Meanwhile, using particular topics/activities to stimulate further enquiry demonstrates how some teachers have considered the importance of making lessons relevant to the learners (Collins *et al*., 1988; Ainley & Patrick, 2006). Teachers who considered the association between factors such as wellbeing, transient emotions of the children influenced by physical factors or events in school were also considering factors which feature in the literature (Pietarinen, Soini, & Pyhältö, 2014; Roffey, 2015).

7.2.2 What are teachers' expressed pedagogies of engagement (what they say)?

Teachers described a variety of strategies during the face-to-face interviews conducting in Stage One (see Chapter Four). Some of the most commonly discussed broad strategies were:

- trying to interest the children (12 of 16 teachers discussed this)
- generating a sense of fun in the classroom (10 of 16 teachers discussed this)
- challenging children (discussed by nine of 16 teachers)

How these strategies were implemented varied; some teachers tried to choose activities, resources or scenarios which they knew the children had a prior interest in or would find relevant. Some talked about introducing a sense of novelty through staging an event in the classroom at the beginning of a new topic or using a game. Other teachers spoke less of activities and more of behaviour systems to engage learners. These ranged from raffle tickets,

star of the week certificates or points systems to reward children for behaving in a way that the teachers felt was conducive to engagement. An iterative, phenomenographic sift of the interview transcripts allowed for teachers' expressed engagement strategies to be categorised into the following groups (in order of prevalence in the online survey):

1. Generating fun and excitement;
2. Challenging children with problems;
3. Providing practical activity and hands-on experience;
4. Providing autonomy;
5. Rewarding engagement.

These strategies have individually a theoretical basis in the psychological literature, although have not be noted collectively amongst teachers' beliefs in this context, nor in terms of their prevalence of use. Pedagogies which focus on generating fun and excitement for instance can lead to emotional engagement which draws on the idea of appeal (Connell, 1990; Finn, 1989 in Fredricks *et al*., 2005). Also linked to emotional engagement, is use of rewards systems, as they can extrinsically motivate pupils to react positively to 'teachers, classmates, academics, or school and is presumed to create ties to the institution and influence willingness to do the work' (Connell, 1990; Finn, 1989 in Fredricks, 2005, p.305). Meanwhile, some strategies have been linked to stimulating cognitive engagement in the classroom; both challenging children using problems (Jerzembek & Murphy, 2013), and providing autonomy offers satisfaction of the need for self-determination (Ryan & Deci, 2000). Similarly, providing practical activity and hands-on experience often involves children being active and can involve collaborative learning. This approach has been seen as effective in encouraging pupils to be more intensely involved in educational process and can encourage them to apply their knowledge in a range of situations (Smith *et al*., 2005)

Other potential strategies, however, were not mentioned. For example, it was somewhat surprising that none of the teachers used their relationship with the children as an engagement strategy, as the importance of teacher-pupil relationships has been well-documented (Ryan, Connell & Deci, 1985; Connell & Wellborn, 1991). Observations showed in this study that strong relationships between teachers and particular pupils, either positive or negative, affected engagement levels, particularly against the, 'They enjoyed today's lesson', indicator. However,

as teacher-pupil interaction takes place in all classes, it is likely that teachers do not view it as a conscious strategy and therefore do not see it as a part of their engagement pedagogy.

Teachers may also have engagement strategies which they did not discuss. They did, however, have the opportunity and were encouraged to do so. Some teachers may have notions regarding engagement strategies which they did not wish to express, such as using harsh class management, like raising their voice or making a negative example of pupils who did not engage. However, teachers spoke candidly during the interviews as they were assured that their comments would be reported anonymously, so it seems unlikely that teachers who strongly held such notions would not mention them during the course of the interviews. The absence of alternative pedagogies is discussed further later in this chapter.

7.2.3 What are teachers' practices regarding pedagogies of engagement (what they do)?

The collation of data found that teachers' practices of engagement fell into two main categories. The first category, Set 1 Teachers, focused upon creating an environment in the classroom that the teachers felt would be conducive to engagement. This category was composed of teachers whose pedagogy relied on either generating an atmosphere of fun and excitement to motivate children to participate in the class activity or teachers who aimed to engage children through offering a reward scheme. The second category, Set 2 teachers, comprised teachers whose practices focused upon the lesson activity itself. These teachers' pedagogies were based on either using problem solving activities; hands on activities, or activities based on children's own interests and independent investigation. Lesson observations found that generally, such practices were apparent during English and mathematics lessons, as described in Chapter Five, and reflected findings from teacher interviews and the online survey in as much as teachers did not say their practices changed depending on subject. In addition to these distinct pedagogies, further strategies were observed during lessons (see Chapter Five, Table 5.5).The most frequently used of these strategies were; teacher (or teaching assistant) positioning, the use of humour and questioning. These strategies were prevalent across types and could therefore be considered non-Type specific strategies.

7.2.4 Match and mismatch- links between rhetoric and practice?

While it cannot be claimed that this study has identified all practices of engagement, the lessons observed, although limited in number, did show that the teachers' conceptions of engagement are not simply private thoughts, detached from action, but are reflected in their practices, as discussed in Chapter Five. These findings align with previous studies which have concluded that broadly speaking, teachers' beliefs influence how they teach (Richardson *et al*., 1996; Stipek *et al*., 2001). Of course, it must be acknowledged that teachers' preferred practices may have to be adapted to respond to the expectations of school managers and parents, and are constrained by for, instance, resources. However, none of the teachers mentioned these factors when interviewed and neither did the observed teachers, before or after lesson observations.

Overall, there appeared to be a match between teachers' rhetoric and their practices. Those who said they used a rewards system, Type 3 teachers, did so in both English and mathematics lessons; as this approach relied on a concrete reward and sanction process it was most easily identifiable and measurable. While Type 1 (Fun & Exciting), 4 (Practical/Hands on) and 5 (Independent/ child led) teachers' practices tended to match their expressed notions, their approaches were less easy to define than using concrete rewards. There was a slight mismatch between rhetoric and practice with regards to Type 2 (Problem solving) English lessons, where there was less evidence of this approach. However, in one of these teacher's lessons there was an open-endedness to the drama activity the children were involved in, which required them to devise and perform a street scene from the 17th century, which had certain elements of problem solving in terms of providing opportunities for creative thinking and possibility thinking (Cooper, 1995; Bage, 2000).

In terms of teachers' attitudes to ability, there was evidence of consistency between the results of the online survey and the observed lessons. The survey, for instance, found that Type 2 (Problem solving) teachers were the least likely to disagree or strongly disagree with the statement, 'high ability children have to be engaged to attain' (19.21 % compared to an average score of 24.56 %). In the observed lessons, these teachers were the ones who had planned suitable extension activities which engaged the more able children (see Appendix 4, Vignettes TT2 (a) and TT2(b)). Meanwhile, Type 3 (Rewards systems) teachers, were most likely to believe high ability children did not need to be engaged to attain, and provided the least

stimulation for higher ability children in practice. Although there appear to be no previous studies exploring whether there is a match or mismatch between rhetoric and practice specifically relating to engagement, findings here align with other studies that suggest teachers' general beliefs profoundly impact on their practice (for example, Richardson *et al*., 1991; Stipek *et al*., Kuzborska, 2011).

Classroom observations were undertaken to provide an overall picture of whether there was a match or mismatch between teachers' rhetoric and their practice, but, of course, observations would need to be carried out on a larger scale to make precise conclusions relating to all survey questions.

7.2.5 Are there patterns/ types of teacher who prefer particular pedagogies of engagement?

This study found there were patterns in teachers' notions and practices regarding engagement. Phenomenography revealed five beliefs about how engagement was generated in teachers' lessons. These beliefs, were categorised into five Teacher Types, which were tested through a wide-scale online questionnaire, widening the number of teacher involved from 16 to over 600 (see Chapter Five).

These patterns, or pedagogies, initially identified from initial face-to-face interviews, and confirmed by the questionnaire were:

Pedagogy 1- Fun and Exciting
Pedagogy 2 – Problem solving
Pedagogy 3 – Rewards systems
Pedagogy 4 – Practical/ Hands on
Pedagogy 5 – Independent/ child- led

The online survey also allowed for patterns within and between these pedagogies to be tested. Based on responses to the guidance questions, and additional areas discussed by teachers during the semi-structured interviews, areas were identified for further exploration; such as the potential influence of degree subject, job satisfaction level, and the ability level of the children.

These areas were then incorporated into the design of the questionnaire. The tool, Survey Monkey, then allowed for responses to each question to be categorised by each of the five pedagogies allowing for analysis of similarities and differences between these pedagogies. This analysis revealed that each of the five pedagogies could be classed as distinct types which, together, could be said to form a 'typology' of engagement practices in this primary school context. It was anticipated that of the 600 questionnaire respondents, some may use the open text box to offer a further teacher type. None did so, nor did any of the ten teachers who were observed during the exploratory study described in Chapter Six suggest an additional Teacher Type (the implications for the engagement of pupils are discussed in detail later).

7.2.6 Where does the teacher see the responsibility for engagement lying?

Generally, teachers wanted to engage their pupils. During interviews many were enthusiastic when describing lessons which they felt had engaged children and the steps they had taken to make the lesson engaging. Such enthusiasm indicated that that they saw, at least in part, the onus of responsibility as lying with themselves. Certain teachers spoke specifically of how they had thought about ways of engaging 'hard to reach' children, by incorporating games, or basing topics around children's pre-existing interests, although the latter was mainly used as an engagement strategy by teachers in Key Stage One. Teachers' willingness to participate in the *Engaging Lessons* CPD and positive responses to this package(see Appendices 6 and 7), including requesting additional resources, also demonstrate a belief that responsibility for engaging learners lies with them by actively taking steps to improve their understanding and knowledge of engagement strategies when offered support. However, interviews also revealed that some teachers did not feel that all children needed to be engaged to attain. This belief was also expressed by a significant percentage of respondents to the online questionnaire with a quarter of teachers said they did not believe higher ability children needed to be engaged to attain, indicating that a significant proportion of teachers only see engagement as their responsibility if they feel it is needed for the pupils to attain. Broadly speaking, teachers do seem to be stretching higher ability children, but, instead, are satisfied with a placid compliance, when engagement could further the children's learning and outcomes.

During face-to-face interviews, some teachers also spoke about the influence of parental attitude on children's engagement levels (as discussed in Chapter Four). These teachers felt

that parents who did not value school passed on these attitudes to their children, resulting in them being less engaged. Teachers also mentioned that pupils who had emotional or physical issues stemming from their home environment could also be less engaged. Such teachers inferred that some responsibility for how engaged children were in class, or school more widely, lay with parents and carers. However, in terms of addressing emotional and physical factors, teachers described how they tried to mitigate these potential barriers to engagement by making sure their classroom was seen as a safe environment and providing some children with a free breakfast or snacks. Teachers who encountered attitudinal barriers to engagement through parental influence did not appear to try to mitigate these factors and seemed to believe that the responsibility for these children's lack of engagement lay with the parents.

Some teachers described how certain children were more engaged than others according to their personality. However, teachers did not indicate that engagement was the responsibility of the pupil, simply that some were more naturally inclined to be engaged than others. Here, teachers' acknowledgement that a child's natural traits, demeanour and existing interests can affect engagement is aligned with the findings of various researchers (Ainley, 2012; Bakker, Vergel & Kuntze, 2015; Wang & Degol, 2014).

Existing literature reveals very little about where teachers see the responsibility of engagement as lying. The literature review found that when engagement levels are measured by attendance in the USA, schools often take whole-school measures to help mitigate truancy (Lehr, Sinclair & Christenson, 2004). Such action implies that schools themselves see ensuring children engage with school on the most basic level, simply attending, as at least partly their responsibility. However, in terms of responsibly for the emotional and cognitive engagement with which this study is concerned there appear to be no academic studies exploring teachers' notions. There are, however publications aimed at teachers which stipulate that responsibility for engaging lies with them. It is likely, for instance, all the teachers in this study will be aware of the Department for Education's Teaching Standards which make specific reference in Teaching Standard 4 to planning and delivering well-structured lessons through, contributing 'to the design and provision of an engaging curriculum within the relevant subject area(s)' (DfE, 2011, p.11) What this means in practice, of course, is another matter.

Of course, there may be teachers who feel the balance of responsibility lies less with themselves and more with parents, children, or even more widely, such as with the Department for Education or society in general. However, this notion was not expressed by the interviewed or surveyed teachers in this study.

7. 3 Teachers' Strategies regarding adaptions/ differentiation of a Pedagogy of engagement

7.3.1 Does the expressed pedagogy of engagement change with subject (Mathematics/ English)?

Significantly, none of the teachers involved in any stage of the data collection commented that curriculum subject influenced their choice of pedagogy. Equally, when teachers were asked to be observed (Chapter 5), none of the ten teachers commented that they felt they engaged children differently depending on the subject. Although not specifically asked whether their engagement pedagogy~~,~~ teachers who completed the online survey were given an open text box at the end but only 5 of the 600 teachers left a comment, and none related to variation with subject.

That teachers do not to vary their engagement pedagogy is somewhat surprising as teachers did feel that some subjects, were by their nature, more engaging than others. Certain teachers discussed during the face-to-face interviews that they felt children found certain subjects more engaging than others, in particular subjects which required physical interaction with the main lesson activity, such as Art and Physical Education. Meanwhile, responses to the online survey found teachers were divided over which subjects were the most engaging and which were the least engaging, although again, Art and Physical Education featured only in the most engaging selection and not in the least engaging selection (see Chapter Five). There was some bi-polarisation of views regarding mathematics. Four of the five Types felt mathematics was an engaging subject, with it featuring as a top three choice for 'most engaging' subject. Yet approximately a quarter of teachers (25.99%)[5] felt mathematics was one of the least

[5] Mathematics was chosen as a least engaging subject by 12.89% 1st choice, 6.08% 2nd choice and 7.02% 3rd choice.

engagement subjects. English, was chosen more frequently as a 'least engaging' subject than it was as a 'most engaging' subject. Considering the disparity between how engaging mathematics was felt to be as opposed to English, it could have been predicted that teachers may feel the need to vary their engagement pedagogy according to the subject. However, of the approximately 650 teachers who were either interviewed, surveyed, observed or took part in the CPD event, only one teacher who participated in the first iteration of the *Engaging Lessons* session, said they used all five pedagogies (it was not possible to check the veracity of this in the CPD session). The teacher did not state whether their approach changed depending on which subject they were teaching.

Despite an extensive search of the literature, there was limited research discovered exploring whether engagement varied by subject (see Chapter Two). Specifically, no research was discovered on whether teachers' practised pedagogies of engagement varied between subjects. For this reason, English and mathematics lessons were chosen to be observed, with the engagement measuring tool being used to measure pupil engagement levels in both subjects. Observations found that generally, practised pedagogies of engagement did not vary between subject, the exception to this was found in the lessons of teachers who claimed to engage pupils through problem solving activities (Type 2); these teachers' expressed pedagogy matched the their practised pedagogy in mathematics lessons, but there was little evidence of problem solving in their English lessons. The omission may be due to perceived constraints of the subject, or, at least, expectations regarding goals in the subject. Of course, the limited sample size means that it cannot conclusively be claimed that all Type 2 teachers do not use problem solving activities in English lessons, nor, can it be concluded that the two observed Type 2 teacher never use problem solving activities English. However, it is likely that their preferred strategy would also be more visible in mathematics lessons due to the fact problem solving is an integral part of the mathematics primary curriculum (the word 'problem' is mentioned 87 times in the Key Stage One and Two programme of study, yet is absent from the same document for the English National Curriculum, DfE, 2015).

Teachers who were identified as Type 1 (Fun and exciting) or Type 3 (Rewards systems) used pedagogies aimed at creating a particular atmosphere in the classroom. The rather generic nature of this approach could be used not only in mathematics and English, but across the curriculum. Although Type 4 (Practical/ Hands on) and Type 5 (Independent/ child led)

teachers used approaches which were more focused upon lesson activities, they were also able to be expressed in the observed mathematic and English lessons (see Appendix 5 - Vignettes 4(a), 4(b), 5(a) and 5(b)).

In addition to teachers' practised engagement pedagogy, lesson observations found that teachers also used additional, interactional strategies to engage pupils. These strategies, including the use of humour, questioning, and teacher positioning did not vary significantly between subjects. These could be classed as non-Type specific strategies (as described in Chapter Six).

Although there appears to be no existing research on whether teachers' pedagogies vary depending on which subject they are teaching, findings of this study can be discussed in the context of the National Curriculum, where there are clear distinctions between the demands of the English and the mathematics curriculum. It is, therefore, surprising that generally teachers' practised pedagogies did not vary demonstrating the tendency for teachers to have rather narrow strategies (Davies, Newton & Newton, 2018 – Appendix 1).

7.3.2 Does the expressed pedagogy of engagement change with children's ability?

None of the teachers in the interviewed or surveyed stated that their pedagogy changed depending on ability, despite beliefs that engagement was more necessary for Lower and Middle Ability children. The view that the most able children did not need to be engaged emerged during Stage One interviews with teachers (see Chapter Four). In order to explore whether this notion was held more widely, the online survey included two statements for teachers to respond to using a Likert scale, these were:

Question 12: Children need to be engaged to attain
Question 13: Higher ability children have to be engaged to attain

Overall, more teachers strongly agreed or agreed with the first statement, compared to the second, reflecting the views expressed by some of the interviewed teachers, that higher ability children do not need to be engaged, or at least *as* engaged as their less able peers.

Particular pedagogies (1, 4, and 5) in particular were more inclined to take this view. Nearly a third of Type 1 teachers(29.95%) and a quarter of Type 3 (25.49%) and Type 5 (25.73) teachers strongly disagreed or disagreed that Higher ability children needed to be engage to attain. It was particularly evident in the 'rewarding engagement' pedagogy where the strategy was observed to be of little interest to such children (Vignettes TT3 (a) and TT3 (b)). Either they were intrinsically self-motivated, or they could complete the tasks with only light engagement, or both. Oakley *et al.* (2002) pointed out that such learners can be quietly disengaged and in need of mental stimulation. In this event, the High Ability children's learning is neglected, as the approach risks offering little personal relevance, and does little to optimise such children's learning. A theoretical distinction between maximal intellectual performance (i.e. the level of performance achieved by persons when they devote all available effort to an intellectual task) and typical intellectual performance (i.e. the average level of performance achieved by persons across a wide range of situations) (Goff and Ackerman, 1994).

No research was found exploring the variation in teachers expressed pedagogies of engagement in relation to ability, it is possible that some teachers who participated in this study are considering the terms 'engagement' and 'effort' as synonymous. Although effort is associated with engagement (as discussed in Chapter Two), the two concepts are distinct entities, yet did not seem to be considered as such by many teachers.

Observed lessons showed that, generally, teachers' practised pedagogy of engagement was most suited to Middle Ability children (see Chapter Six). These children tended to be the most engaged group of children during observed lessons, according to researcher scores. Higher Ability children responded well to problem solving and independent tasks, with engagement levels for this group being highest in lessons delivered by Type 2 and Type 5 teachers. Teachers' scores for whole class also most closely aligned with the researcher's measurement scores for Middle Ability children in English lessons and Lower Ability children in mathematics lessons, indicating that when measuring engagement they most closely paid attention to the Middle and Lower Ability children. The higher correlations between researcher and teacher in these groups may also be explained by the teachers tending to spend more time with children who were not in the Higher Ability group.

Practised pedagogy also seemed to vary with behaviour management; teachers tended to focus on the behavioural engagement of the lower ability children, sometimes to the detriment of their emotional engagement. For instance, small-scale behavioural incidents, such as playing with a pencil were often noticed by teachers and acted upon if the child was of Lower Ability, but were ignored if the child was of higher ability. This led to the quality of the relationship between some teachers and certain children varying depending on the teachers' response to such incidences. Such incidences also tended to impact upon the children's cognitive engagement scores (see Appendix 5, Vignettes TT2 (a), TT3 (a), TT3 (b) and TT4 (b)).

Higher Ability children were given less teacher support than other pupils and spent more time working independently, however, this is not to say that Teacher Types 1-4 adopted the independent enquiry style of pedagogy as preferred by Type 5 teachers. Rather, Higher Ability children were left to do similar tasks to that of their less able peers, simply without as much teacher guidance (the exception to this was Teacher Type 2 (a) who incorporated independent enquiry with problem solving for his most able children in the observed mathematics lesson).

7.4 Teachers' Strategies regarding the recognition of engagement

7.4.1 Can teachers recognise engagement?

Teachers appeared to find it hard to gauge engagement during lessons, and, their ability varied in terms of gauging both emotional and cognitive engagement, as demonstrated by verbal feedback after the lesson observations, where several teachers commented they found it hard to mark some of the indicators (see Chapter Six). This difficulty was also reflected in the discrepancy between some of the researchers' and teachers' engagement scores. The majority of interviewed teachers reported using children's body language to measure engagement levels; surveyed teachers too also tended to use children's body language (87.3%). However, a reliance on body language alone has weaknesses, as shown in the lesson observations. Generally teachers tended to give too much emphasis to perceived negative body language if it was displayed by lower ability children (see Vignettes TT2 (a), TT3 (a), TT4 (b). Equally, positive body language, such as eye contact with the teacher during lesson inputs, tended to be given too much emphasis, so behaviourally compliant children were viewed by teachers as

cognitively and emotionally engaged when researcher observations, supported by the measuring tool indicators found they were not meaningfully engaged (see Vignettes TT1 (a) and TT4 (a)).

There was a significantly high correlation between the researcher's engagement scores and particular teachers' scores, although the ability level of the children appeared to be a factor in determining the correlation. For instance, in mathematics lessons there was a high correlation between teacher and researcher score for 'They achieved the learning object ($r = 0.61$) for High Ability children. For the Lower Ability group, however, correlations where high among three indicators; 'They found the lesson exciting' ($r=0.63$), 'They found the lesson interesting' ($r=0.52$) and, 'They checked their work for mistakes' ($r=0.62$) . The more frequent high correlations for the Lower Ability children may be a reflection of the increased time teachers spent supervising this group. In English lessons, meanwhile, correlations between teacher and researcher scores tended to be higher for emotional, rather than cognitive engagement indicators, as discussed in Chapter Five, and the following section.

7.4.2 What kind are they gauging or seeking?

Responses to the online questionnaire demonstrated that the majority of teachers used body language to gauge engagement. Overall, 87.3% of teachers who responded to the online survey either strongly agreed or agreed that they used body language to assess pupil engagement. This high proportion paralleled the responses of the with many of the teachers who were interviewed in Stage One, where a frequent responses to the question, 'How do you know pupils are engaged' was 'body language' and 'being on task'.

While some of the indicators depend upon the teacher interpreting body language in order to score the child on that aspect, they should not be seen as encouraging teachers to simply gauge behavioural engagement. Of course, behavioural indicators of engagement on which the measurement tool is reliant are not the same as indicators of behavioural engagement. Yet, there was a general tendency for all teachers, regardless of Type, to be predominantly gauging and seeking behavioural engagement. This was demonstrated in the observed lessons where teachers tended to give the whole class lower scores if a small number or even just one child was disruptive. The priority given to behavioural engagement was also evident when

teachers focused upon very low-level disruption to the extent that their reaction then impacted on the child's emotional and subsequently cognitive engagement (see Appendix 5, Vignettes TT2 (a), TT3 (a), TT4 (a), Appendix 5). In Type 3 (Rewards system) teachers' classrooms, extrinsically rewarding 'good behaviour' or penalizing 'bad behaviour' it seemed more emphasis on behavioural engagement this was particularly evident. Similarly, teachers who believed generating a sense of fun and excitement engaged pupils, Type 1, tended to seek emotional engagement indicators showing the child was enjoying and interested in the lesson. When one or several children misbehaved during the session and showed signs they were not finding the lesson fun or exciting the teachers gave the whole class a low score in these indicators (Chapter Six).

All teachers seemed to be seeking and gauging behavioural engagement primarily, but there was variation between the Types in terms of indicators they sought and on how they gauged engagement levels depending on which subject they were teaching. Although teachers' expressed pedagogies of engagement did not change depending on subject, there was evidence that subconsciously they sought different indicators of engagement depending on subject. Analysis of teachers' whole class scores and the researcher's averaged scores found that significant correlations of certain indicators varied between mathematics and English lessons (also discussed above). There were more incidences of high correlations between teacher and researcher scores for cognitive engagement indicators in mathematics engagement, whereas in English lessons, correlations were higher for emotional indicators.

In summary, teachers' recognition of engagement depends on their notions of engagement and subsequently the type of engagement they seek and gauge and may vary depending on curriculum subject and child behaviour.

7.5 Section 2 - Overall findings

The overall findings of teachers' notions and strategies are now presented. A synthesis of these findings allows an exploration of each Engagement Type in terms of distinguishing characteristics, their strengths and limitations, and implications for pupil engagement.

7.5.1 Characteristics of each Type

Analysis of the online survey found each Engagement Pedagogy Type had certain characteristics, which are discussed in this section and a summary of these characteristics is shown in Table 12.1. Teachers in all categories were also generally of the view that the teacher's demeanour was relevant, often seeing 'seriousness' as not being conducive to children's engagement in learning. They also tended to agree that children have to be engaged to achieve, but felt that this was less so for High Ability children. Most teachers, regardless of their Engagement Pedagogy Type, felt their knowledge of engagement originated from their 'on the job' experience, yet it appears that undergraduate degree, experience level and job satisfaction may influence Type, too.

Type 1 – Fun and Exciting

More teachers subscribed to this pedagogy of engagement than any other single group (35% of those surveyed). These teachers believed that fun may be an important characteristic for engaging children, which has indeed to been shown to be effective in raising engagement levels. These teachers viewed lessons that were 'exciting' as more important than any other Type, with half strongly agreeing or agreeing with statement, 'Activities have to be exciting to engage. They were also characterised by high job satisfaction levels, indicating that an approach which focuses on generating a positive and appealing environment is more likely when teachers themselves are enjoying their work.

Type 2 – Problem Solving

Overall, about 26% of those surveyed of teachers subscribed to this pedagogy. These teachers were characterised by higher levels of experience, with many (approximately 47%) having 11 or more years' experience. Of all the Types, they were the least likely to have studied Education at undergraduate level and were more likely to work in Upper Key Stage Two. Perhaps unsurprisingly, given their pedagogy is associated with cognitive challenge, they were the least likely to disagree with statement, 'Higher Ability children have to be engaged to attain'.

Type 3 – Rewards Systems

Of all the teachers who responded to the online survey rewards systems teachers had the lowest levels of jobs satisfaction, with almost 26% stating they had low or very low job satisfaction, which was significantly lower than for the other teachers. They were also more likely to teach in Lower Key Stage Two (Years 3 and 4) and were more likely to have five years or fewer teaching experience than any other Type. These teachers were the least likely to agree that engagement was needed for higher attainment. Perhaps significantly, these teachers were the most likely to have Education or mathematics at degree level and the least likely to have studied Psychology. It may be that an emphasis of behaviour management during an Education related undergraduate degree, influenced their engagement strategy.

Table 7.1 Characteristics of each Engagement Pedagogy Type

Engagement Pedagogy Type	Characteristics
Type 1 - Fun & Exciting	Most likely to have quite high to very high job satisfaction level (34.4%). Viewed 'excitement' in lessons as more important than any other Type (46.54%). Most likely to change their view of whether engagement is needed to attain based on ability level (28.61% drop).
Type 2 - Problem solving	More likely to work in Upper Key Stage Two (72.78%) More likely to have eleven years or more experience (47.02%). Least likely to have studied Education at undergraduate lesson (23.84%).
Type 3 – Rewards systems	More likely to work in Lower Key Stage Two (60.6%). More likely to have five or fewer years teaching experience than any other Type (48.56). Most likely to have neutral to very low levels of job satisfaction (54.28). Least likely to believe engagement was needed to attain.

	Most likely to have studied Education (42.86%) or Mathematics (11.43%) at undergraduate degree level and least likely to have studied Psychology (2.86%).
Type 4 – Practical/ Hands on	More likely to have 6-20 years' experience. More likely to disagree or strongly disagree that activities need to be exciting to engage children (39.21%). Most likely to have studied Education at undergraduate level (37.25%)
Type 5 – Independent/ child led	More likely to say their knowledge of engagement is from on the job experience (72.79%) More likely to choose Science as the most engaging subject (38.24%) Average job satisfaction levels.

Type 5 – Independent/ child led

Less than 9% of teachers in the survey were of this Type, making it the second least common. Of the teachers who used independent/ child led activities, approximately 70% had 10 years or fewer teaching experience. This was relatively surprising as it was hypothesized that more experienced teachers may feel more comfortable allowing children more ownership over their learning. Teachers who used this approach were more likely to have an undergraduate degree in Psychology. A significant number of Type 5 teachers chose Science as the most engaging. These teachers seemed to be the least influenced by job satisfaction, with levels being spread evenly from high to low.

Generally, teachers used practices, approaches and strategies which they believed would attract students and induce their willing engagement. These approaches seemed to stem from their training, other teachers, trial and error, experience (both of students and as students themselves), and teaching resources. Their beliefs, both unconscious and conscious, seemed to be influenced by largely serendipitous events and experiences, such as what they had previously studied, how they were feeling about their jobs and their experience level. Existing research has found that 'teachers' personal histories, school experiences, and social identities significantly shape their pedagogical decisions' (Chen, Horn & Nolen, 2018, p.85) and

combine to produce ones 'professional identity' (Danielewicz, 2014). While none of these factors appear to have been previously identified in the engagement literature, these underpin personal pedagogies of engagement (Mestre, 2005). This is perhaps best illustrated, by Type 3 teachers, whose pedagogy seemed to be underpinned a belief that learners are inherently reluctant to engage, and have to be coerced by unpleasant consequences for not engaging, and by tangible rewards should they engage. That these teachers had the lowest levels of job satisfaction demonstrates the subconscious influence of teachers' emotions on their beliefs and pedagogies. Additionally, these teachers were observed to deal with the most disruption in their lessons (see Appendix 5 – Vignettes TT3 (a) and (b)). Although previous research has found that teacher goals may be associated with job satisfaction, specifically that low job satisfaction is linked to teachers with strong performance goals (Papaioannou & Christodoulidis, 2007) it has not been previously associated with engagement strategies. Olsen has observed that, in general, 'Teacher development is circular even as it is also forward-moving: a teacher is always collapsing the past, present, and future into a complex mélange of professional beliefs, goals, memories, and predictions while enacting practice' (Olsen, 2008, p.24). The development of engagement pedagogies is also complex, and no less dependent on the individual beliefs, goals, memories and predictions of the teacher, however results of this study show that once a pedagogy has evolved it may not continue to develop.

Meanwhile, teachers' attitudes regarding the relationship between engagement and attainment revealed as much about the latter as the former. Some teachers' beliefs that engagement was not necessary for High Ability children indicating they viewed attainment as the ability to reach end of year targets set by the Department for Education. The benchmark of 'achieving the expected standard' (DfE, 2016) may have limited the view of what it means to attain. For these teachers, it would also seem that engagement is synonymous with effort; the most able children can attain with little limited or no effort therefore no engagement is needed (Types 3 and 4, in particular, held this notion). However, new education frameworks currently being introduced in England, mean such misconceptions need to be urgently addressed. The governmental school's inspectorate, Ofsted, will now assess quality of education through curriculum intent, implementation and impact, or '3 I's'[6]. Part of assessing these 3 I's involves

[6] Although grammatically the '3 I's' is (incorrectly) possessive punctuation, this is how intent, implementation and impact are being referred to in the education system, as opposed to, 'the 3 Is'.

determining whether planned learning is ambitious (Ofsted, 2018). It is likely that teachers who believe that High Ability learners can achieve without engaging, like those interviewed and surveyed, will be unable to show impact and/or ambition in this group of children.

7.5.2 Engagement Pedagogy Type and kinds of thought

During classroom observations it appeared the majority of lesson had learning goals associated with lower-order thinking (this was explored further by looking at online lesson plans - see Appendix 6). This finding aligned with the view of Gini-Newman and Case (2015) that rigorous thinking seldom permeates practices in many classrooms. Yet certain kinds of thinking can be more engaging than others. Therefore, by ensuring that these are present, it increases the likelihood that a lesson will be engaging. Here, kinds of learning, and the thought they are linked to, are categorised into five groups, align with Newton's study on productive thought (Newton, 2017). These levels are:

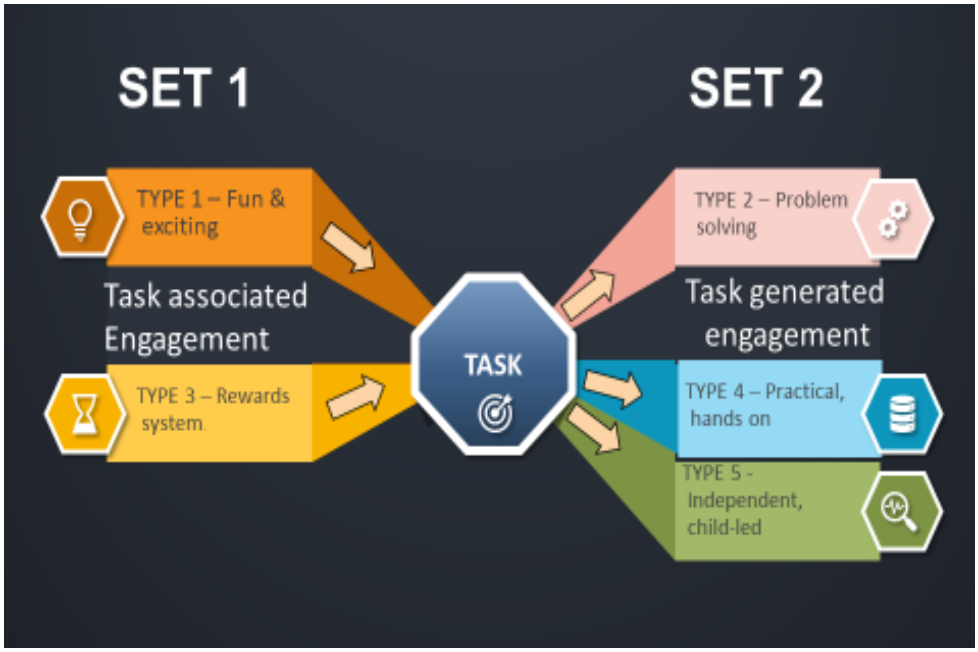
1. Memorisation – Reproductive thought
2. Understanding and causal reasoning – Productive thought
3. Creative thinking and problem solving – Productive thought
4. Critical and evaluative thinking - Productive thought
5. Wise thinking and decision making – Productive thought

Of course, while these levels may be described separately in relation to each Type, they exist interdependently. They are also within the grasp of learners of all ages working in various curricular contexts, therefore it is possible to generate these levels in English and mathematics levels, as well in other curriculum subjects. Although it is unlikely that young children will be able to engage in wise thinking in its entirety (Newton, L., 2017, p,32) they able to participate in this kind of productive thought on some level. With research linking activities which require wise thinking to high engagement levels, this type of thinking must therefore be considered.

However this exercise has illuminated some important factors relating to pupil engagement with both philosophical and practical implications. In terms of pedagogies of engagement, the word clouds exposed that there are two distinct sets of teachers; Set 1, consisting of Types 1 and 3, and, Set 2, comprising Types 2, 4 and 5. Teachers in Set 1 believe in approaches which are unlikely to be reflected in the learning objectives because their pedagogy is based on generating an atmosphere conducive to engaging with the task. Alternatively, Set 2 teachers' pedagogies are aligned with lesson objectives or tasks themselves. This distinction, between teachers who use approaches which generate engagement to complete the tasks and those that generate engagement through the task, is illustrated in Figure 7.1.

The emergence of these two Sets of teachers underlines the overly simplistic view teachers can have of engagement, and, perhaps, of the way some researchers have viewed engagement. Whereas, engagement has been found to be multifaceted by academics (Jimerson, Campos and Greif, 2003), it seems that teachers have a rather fixed or, at least, singular idea as to what engagement is and therefore base their engagement strategy on a somewhat simplistic interpretation; focusing on either emotional (Type 1), behavioural (Type 3) or intellectual (Types 2, 4 & 5) responses from children.

Figure 7.1 Distinct Sets of Teachers by engagement practices



Each Type is discussed in relation to the types of thought it is likely to promote.

Type 1 – Fun and Exciting teachers adopted an approach aimed at generating a positive classroom environment, reflecting their own high job satisfaction levels and optimistic attitude to learning. Fostering positive emotions has been linked to heightening children's interest levels and intrinsic motivation, which in turn may aid memorisation. Equally, it has been widely acknowledged that positive moods can promote creative thought and problem solving (Fredrickson, 2004, Hirt *et al*., 2008, Isen *et al*., 1987, Isen *et al*., 1985, Kaufman, 2003, Vosberg, 1998 in Newton, 2013). However, research concluding that positive moods may have a negative effect on learning in certain subjects, particularly mathematics, suggest that this approach may not be conducive to deductive, critical thinking.

By its very nature, an approach which focuses on problem solving is likely to induce productive thought in the category of creative thinking and problem solving. Type 2 teachers who adopted this approach seemed to have an understanding that providing children with challenging activates would require at least a moderate level of cognitive engagement. Problem

solving activities also allow opportunities for critical thinking, by providing activities that demand reasoning and reflection, and in turn make decisions about how to solve the particular problem most efficiently (Ennis, 1987).

The Type 3 Engagement Pedagogy which used Rewards systems was driven by teachers wanting to incentivise leaners to stay on task. There appeared to be more of a focus on behaviour for learning, than on the type of thought the lesson activity may generate. This pedagogy was therefore conducive to reproductive thought, providing extrinsic motivation which may lead to children being able to focus on the lesson activity, thus aiding memorisation.

It is unlikely that an extrinsic reward system itself would encourage understanding and may negatively affect overall skill acquisition associated with higher order thinking. For instance, for several decades now, children's work outcomes, when influenced by rewards systems, has been judged as less creative (Amabile & Gitomer, 1984; Condry, 1977; Ryan and Grolnick, 1986). Fostering intrinsic motivation meanwhile is likely to be generated by genuine interest in the activity and therefore lead to higher order thinking (Corno & Mandinach, 1983).

Teachers who favoured a practical/ hands on approach, Type 4, recognised, either consciously or subconsciously, that giving children the opportunity to physically interact with objects can lead to knowledge and understanding through experience (Csizmadia, Standl, Waite, 2019, p.41). Indeed, Ackerman goes as far as claiming that 'hands-on activities are the best for the classroom applications of constructivism, critical thinking and learning' (Ackermann, 2001, p.2). Understanding in mathematics, especially, has been found to significantly improve by giving children practical, hands-on experiences (NCTEM). This is, of course, in line with Piaget's stages of development which points to the need for concrete learning experiences for Key Stage One and Key Stage Two children.

Type 5 teachers adopted the child-led approach which has been found to offer satisfaction and acknowledge the need for self-determination (Ryan & Deci, 2000). When students have a sense of control and choice, and are challenged just above their level of

competence, they have increased intrinsic motivation, persistence, and belief that they can be successful (Wilson & Corpus, 2001). A recent study, albeit with older children, found that an Autonomy-Supportive Intervention Program (ASIP) was not only effective in boosting pupils' autonomy, but also competence, need satisfaction (Cheon & Reeve, 2015) and there seems little reason as to why this approach could not be adopted for Key Stage Two lessons. 'The highest form of cognitive engagement is self-regulated learning' (Corno & Mandinach, 1983), where learners plan and manage their own learning and have a high degree of personal control and autonomy. Such an approach has rather open-ended goals, allowing for various types of thought to be experienced depending on the competency and intrinsic motivation of the child. Although this independent way of learning may result in simply aiding memorisation and understanding for some pupils, it can also provide opportunities for children to think both creativity and critically, as well as providing decision making opportunities.

As, Table 7.2 illustrates, some pedagogies of engagement are more likely to generate certain types of thought than others. Yet, certain types of thought, for instance, understanding, may be achieved through all five pedagogies. A range of pedagogical approaches, rather than one narrow approach, is more likely to appeal to all learners in a class. Equally, fostering both emotional and cognitive engagement is more likely to generate higher order thinking, as Elder & Paul observed, 'emotions are deeply interconnected with students' higher order thinking' Elder & Paul, in Bruce Williams, p.19). So, while Newton argues that all children can benefit from instruction within a broader framework of productive thinking (Newton, 2014) it is also likely that broader engagement pedagogies could help achieve this framework.

Table 7.2 Types of thought likely to be generated from Engagement Pedagogy Approach

		Type of Thought				
		Memorisation	Understanding	Creative Thinking	Critical Thinking	Wise thinking
Engagement Pedagogies	1 Fun and exciting	✓		✓		
	2 Problem solving		✓	✓	✓	✓
	3 Rewards systems	✓				
	4 Practical/ hands on	✓	✓		✓	
	5 Independent/ child led	✓	✓	✓	✓	✓

7.5.3 Year group and engagement pedagogy

The online survey allowed for the frequencies of different pedagogies in each Key Stage Two year group to be measured. Results showed that certain pedagogies were more prevalent in Lower Key 2 than in Upper Key Stage Two, most notably the Type 3 – Rewards System. Of these teachers, about 61% taught in lower Key Stage Two. A practical, hands on approach, as typified in Type 4 pedagogies, was found to be rather evenly distributed between Lower and Upper Key Stage Two, with some 50% teaching in Year 3, 4 or a mixed 3 and 4 class. Perhaps surprisingly, Type 1 teachers were far more likely to teach in Upper Key Stage Two. Although, it could be argued that teachers subconsciously try to induce a sense of fun and excitement into lessons as end of primary school assessment or SATS approach, further research would be needed to determine whether this interpretation is accurate. Type 2 - Problem solving and Type 5 – Child led/ independent activities, were more prevalent amongst teachers in Upper Key

Stage Two, suggesting that teachers are willing to give more ownership of learning tasks to older children.

It is unclear whether teachers who are naturally inclined to use certain pedagogies are also naturally inclined to work with pupils of a certain age, or, whether pedagogies are adapted to suit the year group a teacher is responsible for. As other characteristics associated with Types, discussed previously, seem to stem from the unconscious, it seems that natural inclination is more likely. This conclusion is also supported by the fact that no teachers said they changed their approach to suit the age of the children they were teaching.

7.5.4 Pupils' responses to engagement pedagogies

Overall, average engagement levels in the observed mathematics and English lessons were quite high, indicating that generally, all five pedagogies were engaging to some extent. Certain pedagogies were likely to promote purposeful thought more than others, and it was in these lessons that all learners, including the higher ability learners seemed to be most engaged in the class activity. The problem solving approaching, for instance, led to high levels of intellectual engagement in mathematics in both observed lessons (see Appendix 5 – TT2(a) & TT2(b)). Meanwhile, Type 5 teachers, provided the most opportunities for higher order thinking across both subjects (see Appendix 5 – Vignettes TT5(a) and TT5(b)) providing conditions for high levels of cognitive engagement across the five indicators (see Appendix 4-Researcher Scores for English and Mathematics TT5(a) and (b)). Children in these lessons were not only on task and focused, but were also more deeply, emotionally engaged than children whose emotional engagement was somewhat transient and superficial, having been triggered simply through a fun and exciting task. Observations noted that in these lessons, and in Type 2 – Problem solving lessons, positive emotions were triggered by cognitive problems. Pekrun calls these emotions, 'epistemic emotions' and explains that they can be generated by surprise about a new task; curiosity, confusion and frustration about obstacles; and delight when the problem is solved (Pekrun, 2014, p. 8). Type 3 teachers, meanwhile, who used an engagement pedagogy which focused on rewards, saw a positive response from Middle Ability learners, yet Lower and Higher Ability children did not appear to be positively affected. In the four observed lessons, Higher Ability children did not appear to need the extrinsic motivation of reward,

lower ability children were found to be distracted by the rewards; as described in Chapter Six, they were found to spend a considerable amount of time asking about when they were getting a reward and what the rewards would be (e.g. would they be given 1 table point or 5 table points).

As, acknowledged previously, at this point correlations between the effectiveness of particular pedagogies for particular ability groups would be speculative and more observations would need to draw more certain conclusions. Yet recent research by Fredricks, Ye, Wang and Brauert (2019) supports the view that different groups of children are likely to respond differently to different engagement pedagogies. Their research concludes that not all disengaged students are alike and identify three different engagement learner profiles; the behaviourally disengaged, the emotionally disengaged, and the cognitively disengaged (Fredricks *et al*., 2019, p. 31).This study also acknowledges that different pupils may be more suited to particular types of disengagement than others, whilst also finding that different children respond differently to different engagement pedagogies. Lesson observations showed that there do appear to be children who are at risk from particular type or disengagement, as Fredricks *et al.* suggest. While particular strategies may induce positive responses from some pupils more than others, all classrooms have a range of children with varying interests, backgrounds and ability so if teachers were to have more nuanced pedagogies of engagement the breadth of positive responses would be wider.

7.6 Towards a more nuanced notions of engagement

Teachers' repertoires of engagement strategies tended to be narrow. The five identified pedagogies focused on one particular need or goal. Some areas of the curriculum and some kinds of learning do not lend themselves readily to these pedagogies, and lessons can become contrived or counterproductive. For instance, hands-on experience is not always feasible, and generating excitement can hinder analytical thought (Newton, 2014). It might also be argued that an over-reliance on material or token rewards risks encouraging learning inclinations that are only activated by them. Narrow pedagogies of engagement, applied continually, also risk satiation and boredom in the children. Considering the part personality and interest of the individual learner plays in engagement levels (Rotgans & Schmidt, 2011), relying on one

strategy may exclude those learners who are not naturally inclined to that kind of stimulation. Meanwhile, children are not the same as adults, their motivations are different, and they have different desires and expectations (Read, MacFarlane & Casey, 2002, p. 2), so teachers need to consider what may motivate and may not motivate their pupils. It appears opportunities are being missed to use a varied approach which could engage more children more of the time. Autonomy in learning (Type 5) is an approach with the potential to satisfy a wider range of needs and goals, but less than 10% of the teachers in the survey favoured it. Where the curriculum is tightly prescribed, teachers may be less likely to use an approach which leaves a lot to the children, however, autonomy need not be an all-or-nothing approach and, as observed lessons indicated, teachers who planned for autonomous learning opportunities for their most able pupils often had the highest engagement levels amongst higher ability pupils. A more nuanced approach by teachers would allow them to more readily adapt engagement pedagogies depending on the lesson and pupils.

Meanwhile, characteristics of particular pedagogies are shared with other pedagogies. For instance, part of problem based learning involves learners engaging in self-directed learning (SDL) (Hmelo-Silver, 2004) which by its very nature is integral to the pedagogical approach used by Type 5 – Independent / Child- led investigation teachers. There was evidence of this overlap in some of the lesson activities but an awareness of overlaps may encourage teachers to think more broadly about strategies and the suitability of particular strategies depending on variables such as, curriculum subject, position of the activity within the lesson and ability of the learners. Existing research points to teachers' identity as sometimes shifting throughout their career as a result of interactions within schools and in broader communities (Beauchamp & Thomas, 2008). Yet, interestingly, teachers involved in this study did not state their notions of engagement, nor that engagement strategies had changed over time. Teachers' responses conflicted with existing research on teacher identity which points to teachers' self-identity as being dynamic, changing under the influence of a range of factors internal to the individual, such as emotion (Rogers & Scott, 2008; Van Veen & Sleegers, 2006; Zembylas, 2003). None of the teachers interviewed or observed mentioned that their engagement strategy had evolved over time, e.g. they used to be a Type 1 teacher but are now a Type 2 teacher. This suggests that once teachers develop a particular engagement pedagogy this identity remains static. There are two possible explanations for this: one is that the teacher has decided upon a pedagogy of engagement either consciously or unconsciously and upon reflection decided to

continue with that pedagogy, or, that they had simply never reflected on their engagement pedagogy. This study points to the latter because none of the teachers said they had adapted their pedagogy over the years. Although experience level varied between teacher Types, it seems this may be due to subconscious influences on the teachers (such as the once popular Kolb learning styles, as previously discussed) rather than a change from one Type to another.

Nevertheless, it cannot be assumed teachers pedagogies had not evolved, but it seems significant that out of the nearly 700 teachers involved over the three stages of data collection, none commented that their pedagogy had changed over the course of their training and career, which points to teachers having never reflected on their pedagogy. Equally, no teachers commented on whether their engagement strategies changed over the course of the lesson itself by, for instance, immediately capturing the children's interest and curiosity through a fun and exciting starter activity, before moving on to a problem solving activity. With most primary school lessons following a three part structure of a starter activity, main activity and a plenary, it somewhat surprising that no teachers said their approach changed depending on the stage of the lesson. This aspect was introduced in the *Engaging Lessons* CPD training, detailed in Appendix 6, to encourage a more varied approach within a lesson with the aim of raising engagement levels for all learners and help mitigate factors which lead to the 'downward spiral' and disengagement. Taking the view that teachers' Engagement Type forms part of their teaching identity, existing research points to these identities being malleable (Beauchamp & Thomas, 2008) and open to development. Teachers in this study appeared amenable to CPD, and, initial responses (see Appendix 6) suggested their engagement pedagogies could be enhanced by adopting a more nuanced approach.

Chapter Eight:
Conclusions and Recommendations.

8.1 Introduction

This study was undertaken in order to explore teachers' notions of engagement and their engagement strategies, motivated by the challenge of trying to identify what teachers do in practice consciously and/ or unconsciously. The context of the study was complex; with the term 'engagement' seemingly ubiquitous in primary education, yet lacking definition and in danger of becoming a 'fuzz' word (Vuori, 2014). A wide-scale literature review found that a variety of notions, such as motivation, effort and interest, was associated with engagement, yet should not be used as synonymous with engagement. Despite the difficulty in attempting to define meaningful engagement in the classroom, the review pointed to a strong link between engagement and attainment. Further reading enabled particular facets of engagement to be revealed as the most important in terms of supporting children to attain academically; cognitively and emotionally. Using Hattie's rigorous meta-analysis of affective interventions, these types of engagement were identified as underpinning a significant number of successful classroom strategies. However, despite a review of over 700 publications, none explored

teachers' notions of engagement or their engagement strategies. This deficit suggested a clear need to collect data directly from teachers. As detailed in previous chapters, interviews, a large-scale online survey, and subsequent classroom observations were conducted to gather teachers' engagement notions and view teachers' engagement strategies as practised. Data was then gathered in the form of online lesson plans and learning objectives to explore: (a) what material were already available for teachers in planning engaging lessons, and (b) whether teachers were limiting engagement by choosing particular learning objectives.

Thus far, this study has presented findings relating to the following:

- Teachers' notions of engagement
- Teachers' expressed and practised pedagogies of engagement
- Influences on teachers' pedagogies of engagement
- Teachers' ability to measure engagement
- Resources to support teachers' planning and delivery of engaging lessons

This chapter presents conclusions relating to these findings, before making a series of recommendations for practice and further research.

8.2 Conclusions

The previous chapter presented the research findings, based on; interviewing teachers, surveying teachers using an online questionnaire and observing teachers. Results from these stages, (as well as analysis of learning objectives and the trialling of a CPD package – see Appendix 6), allowed each research question to be answered. Having answered these initial research questions, conclusions are able to be drawn in relation to the following themes:

1. What hat does engagement mean to teachers?
2. How can engagement levels be raised in the classroom?
3. How can teachers be supported in raising engagement levels?

8.2.1 What does engagement mean to teachers?

The fact that engagement has different meanings has been previously reported (Ashwin & McVitty, 2015), however, this study is the first to explore these meanings as they are conceptualised by primary teachers themselves, rather than simply taking from theoretical perspectives and making assumptions of practice. Teachers generally seem to value what they call engagement but have vague notions as to what it means. Five engagement pedagogies to which teachers subscribe (and confine themselves) were found. Teachers reported that they subscribed to one or another of these, but very rarely to more than one. For some teachers, engagement meant:

- children enjoying the lesson,
- for others it meant the children being physically occupied or mentally challenged,
- for others it meant children being incentivised to stay on task
- or simply not be a nuisance.

Although teachers seemed to feel some children were naturally more inclined to be engaged than others, they also tended to see engagement levels in individual learners as fluctuating depending on the curriculum subject and pupil wellbeing, such as tiredness or hunger. Whilst there is some evidence that some learners may have personality traits which make them more naturally inclined to engage (Stodd, 2012; Hodge, Wright & Bennett, 2018), it is the acknowledgment that all learners' engagement levels can be supported and even increased by the teacher.

For many of the interviewed teachers, engagement was associated with the word 'effort': both words being used almost synonymously at times. This would explain why a significant proportion of teachers felt that low and middle ability children needed to be engaged to attain academically, yet high ability learners did not. If teachers had a better understanding of engagement, underpinned by theory, they would be more likely to provide for all children's engagement, including those of higher ability.

8.2.2 Can engagement levels be raised in the classroom?

This study found that particular classroom strategies can raise engagement levels. Each pedagogy of engagement was able to generate a level of engagement in most learners at certain times during lessons, as demonstrated by the classroom observations. However, adopting a more varied approach and using multiple strategies within a lesson would broaden its appeal and satisfy the different needs of particular students. For instance, an engagement pedagogy reliant upon a rewards system is likely only to appeal to the children who: a) need to be extrinsically motivated, and/or b) value the reward. It also inculcates habits of mind in which children will openly engage in learning if they receive an extrinsic reward, when what is needed is engagement stimulated by a love of learning and intrinsic interest. Therefore, addressing teachers' notions of engagement and supporting them in reflecting upon what engagement means to them and what types of engagement have been identified in the literature, is vital.

Classroom observations found that engagement levels often increased when teachers facilitated particular activities, such as those which appealed to children's existing interests, required problem solving or creative outcomes. In addition, children appeared to be more emotionally engaged when opportunities were given to collaborate with peers or when teachers generated a positive emotional climate through humour or the use of resources which relate to children's prior interests or act as a novel stimulus.

Knowledge of these effective pedagogical strategies is likely to support teachers in delivering multifaceted lessons which induce engagement in all learners. However, engagement levels could also be increased through more informed planning with targeted learning objectives challenging children to think productively. The majority of lesson plans available for teachers to use online are largely designed with learning objectives which are limited to generating reproductive thought. Yet, observed lessons found that children were often most engaged when more productive thinking was needed. Although ad hoc questioning from the teacher was sometimes able to generate productive thought, pre-planned activities which demanded higher order thinking did so more consistently. Pre-planned opportunities for independent learning engaged learners of varying ability, were found to raise engagement

levels, yet fewer teachers identified as using this strategy as their predominate approach than to any other of the four identified engagement pedagogies.

In conclusion, opportunities exist for raising engagement levels through both the planning and delivery of lesson and a number of recommendations are therefore made below.

8.2.3 How can teachers be supported in raising engagement levels?

This study found that little existing support exists to enable teachers to raise their engagement levels. Yet, opportunities to support teachers lie in theory-guided training which addresses teachers' notions, strategies and ways of measuring and tracking engagement levels. These theories rest on the need for cognitive and emotional engagement focus on psychological need satisfaction (Ryan & Deci, 2000) and goal achievement (Anderman & Patrick, 2012), with some overlap when the goal is to satisfy a need. For practical purposes, these can be subsumed under an umbrella notion of personal relevance theory (Newton, 1988).

This study has demonstrated that engagement is a multifaceted concept which is commonly categorised into six components; physical, social, cultural, behavioural, cognitive/intellectual and emotional. None of the teachers who participated in the study spoke of engagement in ways which implied an understanding of engagement as being multidimensional. Without a basic understanding of engagement it is unlikely that teachers' notions are likely to become any less vague. Supporting teachers in developing their notions of the emotional and intellectual dimensions in particular, is a necessary first step to increasing meaningful engagement in the classroom. The initial iteration of the CPD programme, *Engaging Lessons*, found that teachers welcomed training which helped them develop their notions of engagement, and confirmed that their prior training and classroom experience had not given them the opportunity to do so. There are opportunities here for other iterations which tailor the package to particular school contexts.

Whilst elements of all five identified engagement pedagogies appealed to some learners overall, a more varied approach, combining strategies from all five pedagogies, and perhaps adding others is likely to be the most effective in appealing to the varied needs of all learners.

As previously discussed, in addition to fostering a positive classroom environment through close peer-to-peer and teacher/student interactions, emotional engagement can be furthered through approaches which excite and interest the children. Teachers need a knowledge of strategies that were found to be particularly effective in raising intellectual engagement levels, such as providing children with the opportunity to solve problems, or enable child-led inquiries, in order for them to adapt and extend their existing strategies, as needed. For instance, a relational strategy might be a useful addition (Frisby & Martin, 2010). This entails teachers building positive, trusting relationships with pupils. Similarly, an area-based learning approach, involving using the local environment which is relevant to the children could add to the repertoire.

Teachers could be supported in raising engagement levels through the use of an uncomplicated measuring tool which incorporates both emotional and intellectual engagement indicators. The Practical Classroom Tool or PCT was devised to allow teachers to track both emotional and intellectual engagement, and was positively received by teachers. Although there is scope for the PCT to be further development, in its existing form it allows teachers to identify which lessons their learners were particularly engaged by. Its format also allows for teachers to rate the engagement levels of learners depending on ability level, thus supporting teachers in reflecting on whether particularly activities are engage some learners more than others, and point to deficits in their provision.

8.3 Summary

This study found that despite the increasing demand for teachers to engage learners, the literature offers little insight regarding what engagement means to teachers. It was also found that while generally teachers value engagement they have to rely on personal experiences to formulate their notions and strategies. However, this study has found that there are opportunities to raise engagement levels in the classroom. To realise these opportunities, teachers need to be supported in furthering their understanding of what is meant by engagement which will in turn help them plan and deliver lessons which engage learners emotionally and intellectually regardless of a learner's ability.

8.4 Recommendations for further research

There are several areas worthy of further research in this context. These could be summarised as:

(i) Expanding the study to include teachers working in different phases of education.

(ii) Expanding the study to include and compare more curriculum subjects.

(iii) Further development of the CPD package.

(iv) Further development of materials for teachers.

Each of the four recommendations for further research are described.

(i) Expanding the study to include teachers working in different phases of education

A review of the literature revealed engagement research was predominantly focused on learners in secondary schools, and even more so, those in higher education. However, none of these numerous studies related to teachers' notions and strategies. It seems the reliance on these older learners' abilities to complete self-report questionnaires has led to these phases of education being much researched, but predominantly from the viewpoint of the learner. As in the primary phase, secondary teachers, college teachers and university lecturers' notions of engagement and their engagement strategies have been largely neglected. When teachers have been included in studies, it has simply to measure engagement levels without participating in any sort of discourse about their conceptions. Conducting research at each phase of education would not only be beneficial to understanding engagement within each phase, it would also allow for an exploration of whether teachers' notions and strategies change as learners progress through education, and if they do change, how they change. Expanding the study would also allow for further, as yet identified pedagogies of engagement to emerge should they exist.

(ii) Expanding the study to include more curriculum subjects

A review of the literature found variation in academic interest depending on subject area. For instance, whilst engagement in learning science, has attracted attention, engagement in other areas, such as literacy and mathematics, has consistently attracted much less attention (Davies,

Newton & Newton, 2018, see Appendix 1). This study has begun to redress the imbalance by focusing upon English and mathematics. Nevertheless, in order to explore what engagement looks like across the curriculum, it is recommended that further observations are conducted in a wider array of subjects. Expanding research to include older learners would subsequently enable more curriculum subjects to be explored. Secondary school, college and university educators tend to deliver one curriculum subject to learners so in order to provide a cohesive view of engagement in these phases, teachers of various subjects will need to take part. Certain subjects, usually non-academic subjects, have repeatedly been viewed as more enjoyable than others but no studies were found relating to engagement. Sampling a broad range of teachers to include both academic and non-academic subjects would test the extent to which enjoyment and engagement are related, and also provide an insight regarding teachers' conceptions of engagement and engagement pedagogies vary with teachers' subject specialism.

Meanwhile, observing a broader range of subjects within the primary phase is also recommended. For practical reasons, mathematics and English were sampled in this study with findings suggesting that teachers look for different indicators of engagement depending on which of the two they are teaching. Expanding the samples of National Curriculum subject, to include science, the humanities and arts subjects, would allow for further investigation into the relationship between engagement indicators and curriculum area. Meanwhile, due to primary teachers being required to teach all subjects, broadening the subject sample would allow for possible influences on teachers' classrooms from factors such as their own degree and/ or A level subjects. The broadening of this study's research design in shown in two diagrams, below. The first (Figure 8.1) shows the current design relating to classroom observation conducted in Stage Two. Gender and three ability groups are shown as variables, along with English and Mathematics lessons. Ten teachers, two of each Type were included, but only one school type – state run schools. The second diagram (Figure 8.2) shows how the model could be expanded to include a broader range of subjects and school type, allowing for independent, international and free schools to be included, for example.

Figure 8.1 Research design conducted in Stage Three

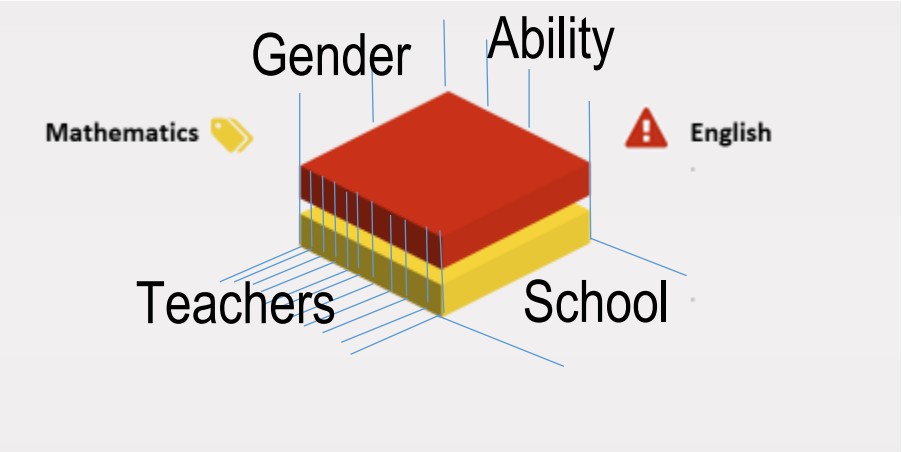
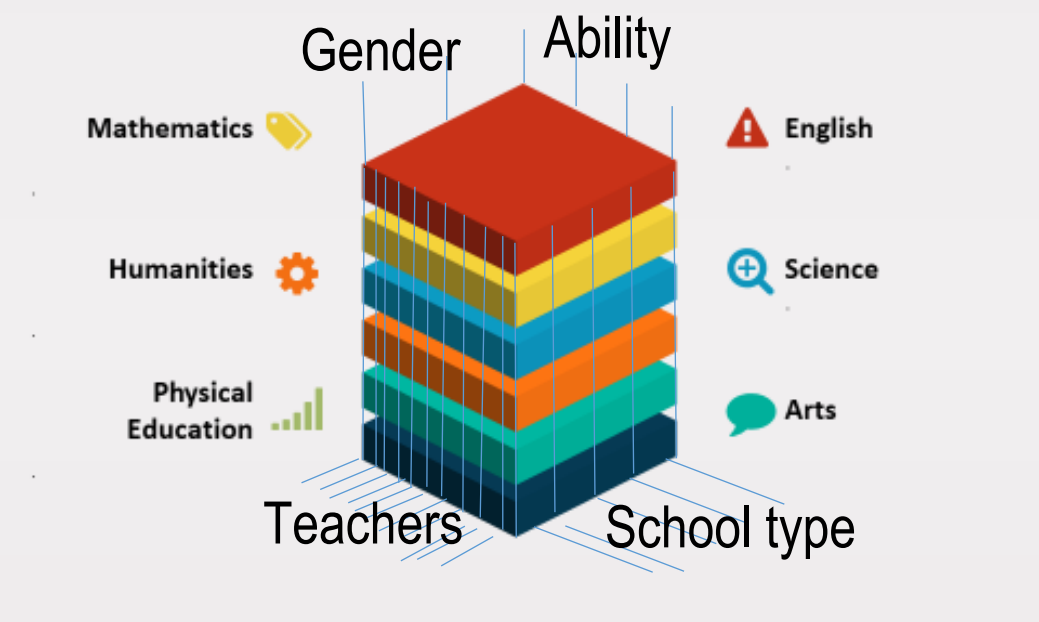


Figure 8.2 Research design for future research



(iii) Further development of the CPD package

Astin (1984, p. 519) argued that 'the quantity and quality of physical and psychological energy that students invest' produces learning in direct proportion to that involvement. In short, engagement is central to learning and achievement across all phases of education, with positive outcomes that stretch beyond formal education (Rumberger & Lamb, 2003). Yet, this study found primary teachers' notions of pupil engagement did not always recognise the importance of engagement for all learners regardless of ability level. Meanwhile, those teachers who did recognise the importance of engagement, had vague notions as to what engagement was hindering the success of some classroom strategies. Usefully, teachers' engagement strategies can be enhanced through training (Whitehouse, 2011). Only about 10% of the teachers in the survey thought that their knowledge of engagement came from teacher training, and only 4% thought it came from on-the-job training. There is a clear need for, and an opportunity to develop, programmes which develop teachers' understanding of engagement which is why the *Engaging Lessons* CPD package was developed and trialled (Appendix 6). Although further iterations and development of supplementary materials, in particular an online application, are needed to maximise the effectiveness of this package, it is suggested that future iterations focus on:

1. What engagement and associated terms, like motivation and a pedagogy of engagement, mean.
2. What can attract engagement in learning; perceptions of personal relevance (e.g. need satisfaction and goal achievement).
3. A recognition that relevance changes with student, with age, ability, and curriculum context, and such differences should be accommodated to maximise learning for all.
4. A range of strategies that exploit these attractions, and the avoidance of over-reliance on one pedagogy of engagement.
5. Practice in selecting, developing, differentiating and applying strategies aimed at inducing engagement.

Whilst teachers may feel more naturally inclined towards one of the five identified pedagogies, or other, as yet unidentified pedagogies, there is scope for teacher to vary not only their predominant pedagogy between lessens but also within lessons.

Based on the initial delivery of the package, it is recommended that the CPD event is extended so that more content can be delivered, and teachers can be shown examples of activities where engagement levels are high. The package might also be delivered in a workshop style format, with increased opportunities for teacher participation, including opportunities for them to practise using the measuring tool using sample clips of lessons.

As well as recommending that research be extended to include lesson observations of a broader range of primary school subjects it is also recommended that future CPD iterations evolve to include the findings of this future research. Due to Ofsted's recent shift in focus from primary schools' core Curriculum to schools' foundation curriculum (DfE, 2019), it is likely that a CPD package covering the whole curriculum is likely to be welcomed as well as needed by schools.

(iv) Development of an online application (app)

This study recommends the development of an online application (app) for teachers and head teachers. An app, or online resource, was the most requested form of support materials by the teachers who participated in the CPD programme, and the increasing use of online resources in education makes it a form of support with which the teaching profession are already familiar. An app would allow for various interactive functions to be used by teachers privately, but also provides the ability for teachers to collaborate should they wish to. Interactive functions would include an online versions of the Practical Classroom Tool (PCT) which would allow ~~for~~ teachers to track engagement levels for the whole class and particular groups of learners (for instance, ability groups), and individual learners. This data would be stored and could be tracked to help teachers analyse their classroom engagement levels. Teachers could also 'label' each lesson to include their learning objective and match the objective to Anderson and Krathwohl's revised version of Bloom's Taxonomy so they could see if lessons which aimed at producing a particular type of learning outcome/ thought type resulted in higher or lower engagement levels. Teachers may then choose to share this data with other app users, such as colleagues within their school or external users. The potential growth of an online 'Engagement

Hub' allowing teachers to collaborate and share examples of their most engaging lessons would allow for practical examples of 'tried and tested' lesson plans to be available.

8.5 Other recommendations

A number of recommendations for educational practitioners have emerged. These recommendations are set out below, by practitioner type, namely; Head Teachers, Teachers, and for Initial Teacher Education.

8.5.1 Recommendations for primary phase Head Teachers

This study recognises the numerous challenges facing Head Teachers including; performativity pressures, funding cuts and daily challenges associated with the running of a primary school. However, making time to discuss a whole school approach to engagement would be beneficial in helping head teachers create a more efficient, pleasant and happier learning environment. If Head Teachers are willing to adopt the indicators used here for the Practical Classroom Tool (PCT) when observing lessons, teachers would have a clear idea of how to plan, structure and deliver their lessons. Rather than predominantly focusing upon behavioural engagement, the emotional and intellectual indicators included in the PCT support head teachers in making an informed judgment on how engaging a lesson is in meaningful ways that can affect attainment.

Currently, there appears to be no guidelines underpinned by research to help support head teachers and teachers reach a consensus within schools as to what an engaging lesson looks like.

8.5.2 Recommendations for Qualified Teachers

An additional recommendation of this study is that qualified teachers should receive support in enhancing their notions of engagement as well as providing them with information

on strategies which can raise engagement levels in lessons and factors which were observed to decrease engagement levels. The willingness of teachers to take part in this study at every stage of the data collection process suggests that the profession would welcome this support. Equally, the expectation on teachers to deliver engaging lessons without engagement specific training seems unlikely to be successful.

This study recommends that qualified teachers participate in an engagement specific CPD program, particularly as increasing attention is being paid to the professional development of teachers as they are seen as having the greatest influence on student outcomes (Barber & Mourshed, 2007). Whilst it is acknowledged that the *Engaging Lessons* CPD package has scope for further development, initial data found it to be successful in developing teachers' notions of engagement. For those teachers unable to participate in the full CPD programme, an online app including an e-learning version of the *Engaging Lessons* training given in schools could be used.

Overall, it is recommended that teachers consider both emotional and cognitive dimensions of engagement when planning, delivering and reflecting upon lessons. To foster emotional engagement teachers should seek to promote a classroom climate which supports collaboration between pupils and include activities that are enjoyable and exciting. To stimulate cognitive engagement teachers should also consider activities which are likely to be mentally challenging, prompt curiosity and interest and offer children the chance to ask as well as answer questions. This study suggests teachers consider both the planning and delivery of such activities.

8.5.3 Planning

This study recommends that teachers use a range of learning objectives when planning lessons, rather than only those with outcomes that generate reproductive rather productive thought. The use of learning objectives that include verbs such as 'create', 'analyse' and 'argue' are more likely to lead to children achieving outcomes associated with productive thought and in turn support cognitive engagement. Meanwhile, some of the most effective approaches

observed were to give children some autonomy in learning, and therein lies the potential for encompassing creative activities which need and reward it. Planning for such activities is often needed and it is therefore recommended that teachers consider autonomous activities prior to the delivery of lessons, rather using them as unplanned extension tasks if the children complete their work ahead of time. Indeed, rather than autonomous tasks being used as extension tasks, it is recommended that teachers incorporate more independent work in~~to~~ main class activities.

8.5.4 Delivery

A key finding of this study was that teachers' engagement pedagogies tend to be narrow. Once an engagement pedagogy is subconsciously adopted or develops, teachers appear to plan and deliver lessons with a particular purpose in mind, depending on their engagement pedagogy, five of which were identified in this study. It is recommended that teachers widen their engagement pedagogies in order to deliver a broader range of classroom activities. Specifically, teachers should look for opportunities to deliver lessons which incorporate opportunities to challenge children of all abilities, including the most able learners.

8.5.5 Recommendations for Initial Teacher Education

Providing support on how to engage learners for those entering the teaching professions is essential. Whilst many successful initial teacher education (ITE) courses may offer advice which may increase trainees' ability to plan and deliver engaging lessons, an explicit approach is needed. It is recommended that ITE courses address the notion of engagement directly, in addition to explaining why how particular strategies may be particularly useful. It is also vital that those about to enter the profession understand that engagement is necessary for all learners, including the most able, to prevent certain children's interest, motivation and enjoyment not being considered. Introducing the PCT early in an ITE course would support trainees' awareness of emotional and intellectual engagement indicators as they begin their teaching practice and begin establishing their own notions and practices. Meanwhile, establishing the link between planning for productive thought and planning engaging lessons during the training process is likely to mean that using a range of learning objectives becomes natural and

automatic for the next generation of teachers. With research pointing to teachers' identities being most malleable during their initial experience (Morrison, 2013), this study suggests trainees may be most likely to incorporate a range of engagement pedagogies rather than identifying with one particular Engagement Pedagogy Type.

8.6 Recommendations Summary

For several decades now in the United Kingdom, since the passing of the Teaching and Higher Education Act of 1998, there has been a push to move teaching from an occupation to a profession (Villegas-Reimers, 2003, p. 33). Prior to this study, however, even teachers who follow the General Teaching Council's (GTC) core principle to, 'take responsibility for maintaining the quality of their teaching practice… actively seek out opportunities to develop their knowledge, understanding, skills and practice' (GTC Code of Conduct, 2009, pp. 7 & 9) would have difficulty in finding studies which help them gain a sense of what meaningful engagement in the primary phase is, or strategies for achieving it. Existing studies, such as McMahon & Portelli accurately observe, 'rarely focus on student engagement from a philosophical perspective, and consequently the term has become a popular, but at times, an empty and superficial, catch-phrase or slogan' (McMahon & Portelli, 2004, p.60). Recommendations outlined in this chapter have been made with the aim of providing teachers with a better understanding of the notion of engagement as well supporting teachers in the use of practical pedagogical strategies, including recognising engagement levels in their lessons.

Looking to the future, increased use of digital technology may make it possible to provide individual, personalised learning, tailored to the needs of particular learners. However, this would only work if there is an understanding of terms, theory and practice relating to engagement.

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