

# IMPLEMENTING GROWTH MINDSET (PRACTICE) IN SCHOOLS: AN EXPLORATION OF TEACHERS' VIEWS USING A GROUNDED THEORY APPROACH

A thesis submitted in partial fulfilment of the requirements  
of the University of East London for the degree of Doctor  
of Applied Educational and Child Psychology

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## **Abstract**

Growth mindset has become a highly popularised term within education and wider fields. An initial literature review highlighted that Carol Dweck and colleagues are a dominant presence within the research and little research has been undertaken within the UK. This doctoral thesis aimed to address this shortcoming, through exploring how schools have implemented mindset theory, and what they perceived to be most useful, from the perspectives of teachers.

Using critical realism as an ontological and epistemological underpinning, this research adopted grounded theory methodology to gain an understanding of the lived experiences of growth mindset practice. Semi-structured interviews were conducted with five participants from different mainstream schools, all of whom were directly responsible for mindset application. Interviews were recorded, transcribed and analysed following the principles of Strauss and Corbin's (1998) approach to grounded theory.

Findings from this study suggest schools' interpretation of growth mindset varies, but key mechanisms were highlighted, depicting the ideal conditions for which to influence the beliefs of children and young people. A theory, grounded from the data is proposed, providing a framework for which to base future mindset initiatives in school.

## **Declaration**

This thesis has not already been accepted for any degree and it is not being submitted for any other degree.

This work is being submitted in partial fulfilment of the requirements of the University of East London for the degree of Professional Doctorate in Educational and Child Psychology.

The research is the result of my own work and investigation, except where otherwise stated. Additional sources are acknowledged by explicit references in the text and references are listed in full, in the appendix.

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Hayley Vingerhoets

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## **List of Abbreviations**

BME – Black and minority ethnic

BPS – British Psychological Society

CPD – Continued professional development

CYP – Children and young people

ELAI – Emotional Literacy Assessment and Intervention

EP – Educational Psychologist

EPS – Educational Psychology Service

GCSE's – General certificate of secondary education

IQ – Intelligence quotient

LA – Local authority

NGN – Nurture Group Network

PATHS – Promoting alternative thinking strategies

PEP – Principal Educational Psychologist

SAT – Statutory assessment test

SDT – Self-Determination Theory

SEAL – Social emotional aspects of learning

SENCo – Special Educational Co-ordinator

TAAS - Texas Assessment of Academic Skills

UK – United Kingdom

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## 1. Introduction

“We like to think of our champions and idols as superheroes who were born different from us. We don’t like to think of them as relatively ordinary people who made themselves extraordinary” (Dweck, 2008, p. 90).

### 1.1 Chapter Overview

This chapter will provide the background to the present research, exploring both the national and local context within which it was conducted. Theories of intelligence will be detailed to provide a foundation to understanding the origins and rise of growth mindset. The underpinning psychological theory will then be explored. The rationale for and relevance of this piece of research will also be discussed.

### 1.2 Terminology

The history of research into human intelligence, ability and skill has operationalised terms such as ‘implicit theories’ or ‘entity and incremental’ to understand the beliefs we hold regarding our capabilities. It is important to note, the more recent use of popularised terminology such as ‘mindset’ coined by psychologist Carol Dweck, is increasingly used to reflect one’s beliefs regarding their intelligence. Furthermore, the terms ‘fixed’ and ‘growth’ are used to recognise the difference in nature between such beliefs. It is the assumption of this research that Dweck’s work on mindsets has a far wider mainstream use within education. Therefore, this phrase will continue to be used throughout the present study.

### 1.3 Background

This research is an investigation into growth mindset practices within a Local Authority (LA) in the United Kingdom (UK). By exploring how schools within one LA are implementing and encouraging the adoption of a growth mindset, the researcher aimed to gain a greater understanding of what practices were perceived by teachers as having the greatest impact. More specifically, the

researcher aimed to find out teachers' views on what aspects of these practices influenced pupils' effort and resilience in response to failure or challenge.

### 1.3.1 National Context

Within education, the contextually relevant constructs for this research relate to attainment and well-being (see Chapter 2 for more information). Attainment is typically an objective measure of achievement within education. In the UK, the General Certificate of Secondary Education (GCSE) and Statutory Assessment Tests (SAT) results are commonly used as measures of children and young people's (CYP) attainment in school. However, 'well-being' is a much harder construct to define and measure. Psychologists have tended to focus their research on 'subjective well-being' (Diener, Suh, Lucas, & Smith, 1999). This refers to "a person's cognitive and affective evaluations of his or her life" (Diener, Oishi & Lucas, 2002, p. 63).

The UK education system has been subject to much criticism in recent years, with reports consistently showing that our educational system is lagging behind in global school rankings (OECD Report, 2015). With countries of much lower socio-economic status outperforming UK schools (e.g. Vietnam, Poland and Estonia) this provides a clear rationale for intervention and new ways of thinking. Furthermore, the existing attainment gaps between children from differing socio-economic backgrounds remain a contentious issue within education (The Centre for Social Justice, 2014). Children and young people (CYP) from disadvantaged backgrounds continue to be five times more likely to experience academic failure than their peers. This is particularly salient for disadvantaged white boys, who experience the poorest academic success with just 28% achieving five good GCSEs compared to 60%, the national average (The Centre for Social Justice, 2014). Furthermore, looked after CYP are four times less likely to experience academic success (The Centre for Social Justice, 2014). There are also differences between the attainment of CYP of different ethnic backgrounds within UK schools. Chinese girls were amongst the highest achievers whilst black Caribbean boys had the poorest academic attainment

with only thirty-nine percent achieving five good GCSEs (Social Mobility and Child Poverty Commission, 2015).

A report published by The Children's Society (2015) surveyed over 53,000 children from a diverse range of countries and cultures. Their findings revealed that England was ranked 14th of 15 countries for life satisfaction. The report also suggests children are unhappy in English schools, as 7.1% of twelve year olds reported low levels of well-being and happiness. The report also found that, as English children got older, their self-reports of unhappiness at school also increased. In the most recent wave of research from the survey, children in the UK reported 'school' as an aspect of their life they were unhappiest about. Despite the large survey size, the results published in this report should be reviewed with caution. Firstly, 'subjective well-being' is a complex social construct, therefore, a simple survey may not be sufficient in eliciting rich, detailed data needed to understand participant responses. Also, the subjective nature of self-report surveys makes them vulnerable to bias and one could argue that they may not be a valid and reliable way of collating data from CYP. This is particularly true for the concept of 'subjective well-being'; an abstract construct which may be difficult for CYP to fully understand.

Schools are often described as "engines of social mobility" (Social Mobility and Child Poverty Commission, 2015, p. vii). It is recognised that they are the ideal place to intervene and promote positive outcomes for all CYP regardless of their background, ethnicity, socio-economic status or gender (Social Mobility and Child Poverty Commission, 2015). Although some strides have been made to reduce the attainment gaps, inequalities within our education system remain. Although government policy and funding aim to narrow these gaps within our schools, the State of the Nation (Social Mobility and Child Poverty Commission, 2015) report argues that "despite many welcome initiatives, the current policy response – by educators and employers as much as governments – falls well short of the political ambition" (p. vi). Such 'top-down' approaches take time and resources to implement and have impact, therefore alternative interventions may provide a more practical solution.

### 1.3.2 Local Context

This research was conducted within the county of Suffolk; a rural county in the East of England. The county has a population of 735,000 residents, 95.2% are of white ethnicity, whilst 4.8% are of black and minority ethnic groups. In 2014, 51% of young people in Suffolk schools achieved five A\*-C grade GCSEs compared to the national average of 53%. In addition to this, statistics show that the educational performance was also below the national average for 11-year olds at the end of Key Stage 2 (Suffolk County Council, 2015). At the end of the 2013-2014 academic year, the attainment gap between disadvantaged CYP and their peers in Key Stage 2 had also widened (Suffolk County Council). As a result of these statistics, Suffolk issued a School Improvement Strategy called 'Raising the Bar'. Within the document, it states that "raising educational attainment is its number one priority" (Suffolk County Council, 2015, p. 2).

Prior to the onset of this study, the researcher conducted a simple internet search to explore whether any local schools made reference to 'growth mindset' on their websites. A large number of schools, both LA, private, primary and secondary all claimed to apply growth mindset theory within their schools. Consequently, a follow-up internet search highlighted that the LA of Suffolk offered training on growth mindset practices through external providers only. This implied that the LA recognised the potential benefits of this theory, but did not have the resources to offer training internally.

### 1.4 History of Mindset and Psychological Underpinning

As highlighted within both a national and local context, the UK education system requires intervention which improves both educational attainment as well as the well-being and overall happiness of its pupils. An existing body of literature claims growth mindset interventions can not only address these issues, but can even reduce attainment gaps or buffer against factors such as ethnicity or socio-economic status (Aronson, Fried, and Good, 2002). This will be explored further in section 2.3. In this section, the theoretical underpinning of growth mindset will be explored, highlighting the psychological basis of such interventions.

### 1.4.1 Background of Understanding and Measuring Intelligence

Alfred Binet pioneered the development of standardised assessments, the tools to measure a person's intelligence (Siegler, 1992). The idea behind such assessments suggests that intelligence is a static entity, something that can be measured in a systematic way. Therefore, one would assume that an intelligence measurement (Intelligence quotient, IQ) taken on two different occasions should elicit the same result, as intelligence is not subject to change. However, even Binet himself held an alternative view of intelligence, stating that:

A few modern philosophers assert that an individual's intelligence is a fixed quantity, a quantity which cannot be increased. We must protest and react against this brutal pessimism... With practice, training, and above all, method, we manage to increase our attention, our memory, our judgment and literally become more intelligent than we were before. (Binet & Heisler, 1975, p. 107)

Cattell (1940, 1943) was one of the first to separate the general concept of intelligence into two distinct entities. He proposed the notion of fluid and crystallised intelligence to account for differences elicited from mental ability testing. Although he claimed these were different entities, they worked together and interacted to form an overall 'general' intelligence. Within the theory, Cattell (1940, 1943) described fluid intelligence as the ability to solve novel or abstract tasks. It reflects one's problem solving capability and is believed to have a physiological basis. According to Cattell, this notion of intelligence is conceptualized as 'fluid' as it is "directable to almost any problem" (1987, p. 97). Conversely, crystallised intelligence refers to the skills and expertise that result from a life time of learning. This type of intelligence is accumulated knowledge rooted from one's experiences, which typically gets stronger over time. Cattell (1963) provided research supporting his theory using a sample of school-aged children, results which have been widely replicated and endorsed. The idea of crystallised intelligence, and one acquiring new skills as a result of learning experiences, lends itself well to the present study.

### 1.4.2 Implicit Theories of Intelligence

Two converging views emerged from research related to differences in the beliefs held regarding intelligence. Entity beliefs, or entity theorists, believe that intelligence is pre-determined and fixed over time. Alternatively, incremental beliefs or theorists view intelligence as a malleable trait, and something that can be cultivated over time. Those who pertain to an incremental belief, claim new skills can be acquired through learning and effort. Dweck and Leggett (1988) suggest the two beliefs can impact both behaviour and motivation. Those who endorse entity theory, are more likely to strive towards performance related goals. That is, they are motivated by success and achievement in order to be viewed favourably in comparison to peers. In contrast, incremental theorists are more likely to endorse learning or task-related goals. The focus shifts towards increasing competence and mastery-oriented goals (Dweck & Leggett, 1988).

Whilst scholars and psychologists explicitly debate theories regarding intelligence, Hong, Chiu, & Dweck (1995) suggest, for the layperson, beliefs about intelligence are far more implicit. Therefore, their views regarding their own intelligence may take the form of background assumptions, not readily voiced or expressed. Hong, Chiu and Dweck (1995) claim from their research, that these implicit theories of intelligence typically take two forms; the belief that intelligence is fixed and pre-determined (entity theorists) or the belief that intelligence can improve and is malleable (incremental theorists). These two theories of intelligence “appear to create different psychological worlds for students: one that promotes resilience and one that does not” (Yeager & Dweck, 2012, p. 304). These implicit theories form the basis of Dweck’s work, with growth mindset being consistent with the incremental theory of intelligence (Reynolds & Birdwell, 2015).

Carol Dweck began her career at university studying motivation. Initially, experimenting with animals, she was particularly interested in the concept of ‘learned helplessness’. Seligman (1975) described how the behaviour of animals who were repeatedly exposed to negative stimuli of which they were unable to escape or avoid, was typically impacted by such experiences. He



found that the animals were unlikely to try to avoid similar adversities in the future, even in new situations where escaping or avoidance was possible. This is described as the process of learned helplessness. The animals lost all sense of control and typically became withdrawn and unreactive (Long, Wood, Littleton, Passenger & Sheehy, 2011). Dweck observed this phenomenon which prompted her to investigate how CYP respond to challenges and failure. Her work revealed a disparity in the way CYP responded to failure; some thrived at the challenge thus remaining motivated, whilst others gave up.

Dweck (2006) proposed that differences between the children that maintained their motivation to learn in response to failure, and those that gave up, was a result of their mindset. The belief that intelligence is fixed or predetermined denotes a 'fixed mindset'. People who possess a fixed mindset believe qualities such as talent or creativity are finite and cannot be changed. Therefore, a fixed mindset is congruent with entity theory of intelligence. Dweck harnessed these ideas by promoting the idea of a 'growth mindset'. This is the belief that intelligence can change as a result of effort. A growth mindset allows one to believe that basic abilities can be improved through perseverance and learning, hence the idea that intelligence is malleable. The notion of a 'growth mindset' is consistent with incremental beliefs regarding intelligence.

#### 1.4.3 Locus of Control and Attribution Theory

People generally try and make sense of the world by looking for causes or reasons particular phenomena occur (Long et al., 2011). More specifically, we tend to look for attributions to help explain our own actions and the effects it has on our subsequent motivation and behaviour. Rotter (1966) proposed a scale that helped explain the differences in people's attributions. If one believes that have control over their lives and what happens to them, they are said to have an internal locus of control. Conversely, an external locus of control means that what happens is the result of external variables outside of one's control.

Weiner (1985) developed this idea further, proposing three dimensions that link attribution theory to educational settings. He suggested that within a school

environment, success or failure can be attributed to one's locus of control (internal or external), how stable the cause is (stable or unstable) and the perceived controllability of the cause (high or low controllability). If a pupil believes their success is due to intelligence they were born with, this would be an internal, stable and uncontrollable cause. If, on the other hand, success was attributed to effort, this would be viewed as an internal, unstable and highly controllable cause. The difference in attributions influence a person's motivation and future behaviour as you would expect those with an external locus of control and low perception of controllability to exert less effort than those with an internal locus of control and high perception of controllability.

Implicit theories of intelligence, or mindsets, too influence the meaning of effort and failure (Dweck, 2006). Those who subscribe to an entity theory or a 'fixed mindset' view effort negatively as tasks should be easy. Being successful at a task reinforces the idea that you are intelligent. If effort is needed to be successful, it poses a threat to the fixed mindset that you are an intelligent person. Possessing a fixed mindset prevents one from attempting challenging or difficult tasks, as if you do not succeed easily, it is probably because you do not have the skills or ability to do so. According to this view, this ability is pre-determined and innate, with little value placed on effort or the process of learning. Conversely, those who possess an incremental theory of intelligence or a 'growth mindset' view challenges or difficult tasks positively, as opportunities to learn. Dweck (2006) found evidence of these differences amongst four and five year olds who were given the choice of redoing an age-appropriate jigsaw puzzle, or trying to solve an insoluble puzzle. Children with a fixed mindset preferred the age-appropriate tasks, whilst those adopting a growth mindset chose to continue attempting the impossible puzzle. Furthermore, the children choosing the harder puzzle, went on to question why they would even want to do the same puzzle again. Although this research provides clear support for mindsets influence on motivation, the study failed to control for the children's confidence prior to starting the task, a construct which may influence their likelihood to persevere. Similarly, the children's attachment to their care givers were not considered, despite research demonstrating the significance of attachment on any child and adult interaction (Cassidy, 1988).

#### 1.4.4 Neuropsychology and Brain Plasticity

Integral to the theory of growth mindset is the notion that the brain can grow and adapt following new learning experiences. This idea has gained momentum over the last decade with new and exciting research providing scientific evidence of such phenomena (Maguire, Woollett, & Spiers, 2006; Mechelli et al., 2004; Gaser & Schlaug, 2003). This research supports the claim that the brain is plastic; with practice and directed effort, the brain can change and new cells form. This is referred to as neuroplasticity or brain plasticity.

Neuroplasticity refers to the brain's ability to reorganise itself and form new neural pathways and connections as a direct result of learning. Therefore, the brain is rewiring itself in response to the stimulation of a learning experience. These experiences cause cells to form new, strong connections, with unused connections being replaced (Ponti, Peretto, & Bonfanti, 2008). This process, referred to as 'pruning', is "largely determined by environmental influences and represents learning" (Craika & Bialystokb, 2006).

#### 1.5 Growth Mindset within an Educational Context

The idea of a growth mindset has direct implications for schools and education. According to Diener and Dweck (1978), CYP's beliefs about their own intelligence will influence how they approach their learning, motivation, effort and resilience. CYP who attribute their failures to lack of ability are likely to demonstrate a decrease in performance when they experience failure (learned helplessness). In contrast, CYP who attribute failure to lack of effort, often show improvement in performance in response to failure (Diener & Dweck, 1978). Therefore, direct teaching of growth mindsets could promote positive characteristics, such as resilience and perseverance within CYP.

Dweck (2006) argues that the messages and feedback we give children are integral to enhancing a growth mindset. Praise is common practice for both parents and teachers, but the type of praise you give can relay inhibiting messages. To instill a growth mindset, praise should be focused on the effort the child has made at a particular task, as opposed to praising success or achievement. For example, when a child does well at a school test, feedback

like ‘well done, you are such a clever girl’ suggests that success in the task was down to intelligence and not effort or practice. This type of praise enhances a fixed mindset, and leads CYP to neglect effort as their ability is innate. Alternatively, praise such as ‘you did really well on that test, you must have worked really hard’, reinforces the effort it takes to succeed and encourages a growth mindset.

## 1.6 Relevance and Rationale

### 1.6.1 Overview

The theory of growth mindset has existed for decades. However, the popularity and uptake of the theory has only more recently gained momentum in the UK, but with little research or theory on how growth mindset practices are best implemented within schools. Thus the theory proposed within this research should be of great interest. Within a national context, the theory may be of interest to EPs in different local authorities, whereby further research and investigation could be undertaken following the findings reported in this study. Locally, this research will be of interest to EPs, Head Teachers and Special Educational Needs Coordinators (SENCOs) who are well positioned to deliver educational initiatives. This research is also relevant to leaders within the LA, as the proposed theory provides a resource which could be cultivated and utilised within a traded service to schools.

The development of a model or framework for implementing growth mindset in schools has clear relevance for the profession of Educational Psychology due to the psychological underpinning behind the theory. Additionally, EPs are ideally positioned to support educational provisions in developing growth mindset practices due to their level of training, understanding of psychological theory and their role, which enables them to work both systemically with schools as well as directly with CYP.

### 1.6.2 Within a Local Context

As described in section 1.2.2, Suffolk County Council recognises the need for areas of improvement within their schools. Their ‘Raising the Bar’ initiative

details how pupil attainment must be improved in line with national averages. This provides clear rationale for the investigation of growth mindset practice in Suffolk schools. The current literature claims that growth mindset interventions can not only raise educational achievement, but can also reduce the attainment gap for disadvantaged CYP too (see section 2.3 for more information). Additionally, the literature shows that little formal research has been conducted in the UK and presently, there is no theory or framework for how growth mindset should be implemented in to school practice. This research aimed to address these shortcomings.

By adopting a grounded theory approach, the researcher will formulate a framework that can be used to support the implementation of growth mindset in educational settings. This will not only be useful for practitioners in schools, but also for the Educational Psychology Service (EPS) in making recommendations of best practice. It will provide an evidence base on which to inform work in this area. It is hoped, this will be a valuable contribution to both Suffolk's Psychology and Therapeutic Services, but also the Educational Psychology profession.

## 1.7 Research Questions

The current study had two main aims. Firstly, to identify how schools are implementing and encouraging CYP and staff to adopt a growth mindset. Secondly, the researcher's intention was to gain a greater understanding of the views of teachers in the implementation of growth mindset interventions to identify what they perceived to be the most useful practices in influencing change.

The research questions were designed to provide rich, detailed data that would highlight the mechanisms that encouraged both school staff and pupils to adopt a growth mindset. This informed the basis of a theory for the implementation of growth mindset in schools, providing school staff and EPs with a useful tool that could be used to support their practice. Additionally, it is hoped that this theory is only the beginning of future research in to growth mindset interventions within the UK.

Accordingly, two main research questions were identified:

- How are schools currently implementing growth mindset theory into everyday practice?
- What aspects of this practice are perceived as most useful?

## 2. Literature Review

### 2.1 Chapter Overview

This chapter will provide an in-depth exploration of the literature associated with the present study. First, the approach to reviewing literature will be explained, in relation to grounded theory methodology. Then, the work of Carol Dweck will be highlighted to provide a background in to the existing evidence base regarding growth mindset application in schools. Finally, the systematic literature review undertaken will be presented, followed by a summary of the strengths and limitations of the current body of mindset research.

### 2.2 Grounded Theory and Literature Reviews

Glaser and Strauss (1967), the pioneers of grounded theory, argue that a review of existing literature should only be conducted post data collection and analysis to minimise bias and potential contamination of theory. Original grounded theorists, therefore, only refer to literature in order to confirm or challenge the emerging theory. This allows researchers to remain impartial, and explore new areas which may not have been explored before, thus not placing any restraints on theory development (Sutcliffe, 2016). However, more recent researchers such as Thornberg (2012) propose that this is not always possible for social science researchers, such as those within educational fields. There are practical implications, such as having to provide justification to research boards for the relevance of the chosen topic of study (Thornberg, 2012; Strauss & Corbin, 1998). Furthermore, it is naive for one to suggest that they can enter research free from pre-existing knowledge.

This research supports the stance taken towards literature within grounded theory proposed by Strauss and Corbin (1998). They recognise that, although a full and thorough literature review prior to data collection is not necessary, an awareness of pre-existing research can be useful. They argue that research can be used to “enhance rather than constrain theory development” (p. 49). For example, literature can be used to ascertain conceptual areas of interest as well as the overall objective of the research. It also allows researchers to formulate

initial questions for the first phase of data collection and identify areas for theoretical sampling (Strauss & Corbin, 1998).

Once emerged within data collection and analysis, Strauss and Corbin (1998) proposed that if literature is “used as an analytic tool then it can foster conceptualisation” (p. 53). This permits the use of literature to confirm the researcher’s own theory, or it can be used to explore discrepancies in concepts between pre-existing and emerging theory.

Congruent with Strauss and Corbin’s (1998) approach, existing literature was explored in this research prior to data collection. The aim was to highlight the key areas to be explored and provide justification of the significance of this research within educational psychology. Furthermore, the researcher acknowledges some awareness of growth mindset theory and chose to report the initial literature review to highlight existing knowledge to contribute to the reflexivity of this research.

### 2.3 Research Conducted by Carol Dweck

Dweck has devoted the majority of her professional career to conceptualising and promoting growth mindset. She, along with multiple colleagues, have conducted a plethora of research to provide a strong evidence base for the applications of her work. Dweck claims that a growth mindset can substantially improve educational attainment even reducing attainment gaps (Blackwell, Trzesniewski & Dweck, 2007; Grant & Dweck, 2003; Dweck & Molden, 2013; Paunesku et al., 2015). Dweck’s body of research also shows additional benefits of growth mindset in the areas of well-being and health. Multiple studies consistently show increased resilience in children and young people who have a growth mindset (Yeager & Dweck, 2012; Mueller & Dweck, 1998). These will now be explored in more detail.

Direct teaching of growth mindset principles provides a powerful intervention that is not only applicable to education, but has a much wider relevance too. An abundance of research has been conducted to explore the effects a growth mindset has on CYP in education. Yeager and Dweck (2012) state that “if



students can be redirected to see intellectual ability as something that can be developed over time with effort, good strategies, help from others, then they are more resilient when they encounter the rigorous learning opportunities presented to them” (p. 306).

This review has included research which has identified, measured or manipulated a CYP’s or teachers’ mindset. The intervention included within the research had to be based on growth or fixed mindset, incremental or entity theories of intelligence, or more generally, the malleability of intelligence. The interventions included were based in educational settings and aimed to measure a CYPs’ effort, attainment or well-being.

### 2.3.1 Mindset and Attainment

Blackwell et al. (2007) conducted two studies to explore the effects a growth mindset had on mathematics attainment. In the first study, Blackwell et al. (2007) administered a motivational questionnaire in order to identify student beliefs about mindset and intelligence. Multiple self report measures were used to assess the students’ motivation and beliefs within the classroom, compared to the control group. Each measure consisted of a Likert type scale and was subject to test-retest reliability across a two-week period. Over 370 seventh-grade (age 12-13 year olds) students of different ethnicity, ability and socio-economic status participated in the study. The students’ mathematics achievement was then monitored over a two-year period, using the academic grades given to students at each term.

Based on the initial questionnaires, findings showed that students who believed their intelligence was a malleable quality linked effort and hard work with success. Furthermore, these students were less likely to attribute failure to lack of ability, and instead, they would explain that more effort or an alternative method was necessary, to overcome the challenge. In contrast, students who possessed a fixed mindset, or entity theory of intelligence were preoccupied with appearing intelligent, thus tended to avoid challenges and give up more easily. Moreover, despite similar mathematics attainment initially, students who

endorsed a growth mindset were outperforming their fixed mindset peers in mathematics two years later.

These results from study one led Blackwell et al. (2007) to hypothesise that if they were to teach students to view their intelligence as a malleable quality, then they, too, should improve their motivation to learn and their academic attainment. Students were split into two groups; one group received eight weeks of study skills training (control group), the other were taught study skills as well as the principles of growth mindset (experimental group). Prior to intervention, both groups demonstrated a declining math ability. However, the researchers used the same measures detailed in their first study, and found that those who received growth mindset teaching, significantly improved their grades, compared with the control group, who continued to decline. However, the pre and post intervention spanned across one term, so conclusions regarding the longevity of change cannot be drawn. Each of the studies conducted by Blackwell et al. (2007) were undertaken in one school, make cross school comparisons and further generalization of results challenging. Furthermore, in addition to the subjective nature of self-report measures, the test-retest reliability measure was undertaken across a two-week period, not the two-year phase in which the study was conducted and self-report measures used, posing further doubt over the reliability of the results.

Further research to support growth mindset interventions improving academic attainment were conducted by Grant and Dweck (2003). They examined college students studying chemistry and not only found that an orientation towards a growth mindset predicted higher levels of achievement, but students with initially poor grades, were more likely to progress quickly and catch up with their peers.

Research suggests that even short-term growth mindset interventions in the form of workshops or classes can promote significant academic gains (Dweck & Molden, 2013). A large-scale study provided 1,594 students from 15 diverse schools with online growth mindset training (Paunesku et al., 2015). The online course lasted 45 minutes and was found to raise achievement in a large group

of underperforming students over one academic term. The intervention also increased the number of CYP achieving satisfactory grades in core subjects by 6.4%. The scale and replicability of this study demonstrates how short-term interventions can be scaled across numerous schools at a limited cost. However, this study does not explore the long-term effects the online intervention has on academic attainment.

These studies present evidence for how growth mindset interventions can improve attainment of CYP in education. The study conducted by Paunesku et al. (2015) even suggests that such interventions may be effective in bridging gaps in attainment for underachieving groups of CYP. Aronson, Fried, and Good (2002) were interested in whether black African American students exposed to incremental theories of intelligence would not only adopt the change in mindset, but also achieve greater academic success. African American students who were asked to act as a pen pal and advocate a growth mindset position demonstrated greater academic enjoyment and engagement. Additionally, they obtained higher grades than the two control groups. Although white students who participated in the study also saw an increase in academic attainment, their enjoyment and engagement in college remained the same. Although these results appear to support the benefits of mindset intervention, the researchers recognise the limitations of their analysis, stating they “cannot conclude that the positive effects of the malleability training on GPA were mediated by malleability beliefs” (Aronson, Fried & Good, 2002, p. 121). The researchers explained this finding may be due to sample sizes resulting in unstable correlations, or reliability issues with the self-report malleability of intelligence scale. Consequently, readers may be unable to confidently conclude it was the change in beliefs regarding intellect that improved participant’s academic attainment.

Another study not only found the growth mindset interventions can narrow the achievement gap for minority groups, but they actually had a disproportionately positive effect on such students. This was found after African American students received mindset workshops, compared to a control group who received no intervention (Dweck & Molden, 2013).

As highlighted, CYP from low socio economic backgrounds continue to fall behind their peers academically, with white disadvantaged boys being the most adversely affected (The Centre for Social Justice, 2014). Good, Aronson and Inzlicht (2003) explored the gaps in achievement that continue to be generated while using standardised assessment tools. They predicted that growth mindset interventions would enable 12-13 year-old female, minority and low-income adolescents to improve their tests scores and overcome the negative effect of stereotypes. Older students mentored the participants to view intelligence as malleable. Students who were mentored in the malleability of intelligence, outperformed their counterparts in the control group. Additionally, large effect sizes for females demonstrate the gains in mindset intervention for reading and mathematics attainment.

The scores in this study were obtained at the start and end of an academic school year using the Texas Assessment of Academic Skills (TAAS) test, a statewide standardised achievement test. Although Good, Aronson and Inzlicht (2003) set out to highlight the bias in such assessment tools, they failed to control for the ethnicity of participants, meaning comparisons in achievement between different minority groups could not be obtained. The study also failed to make pre and post comparisons of students scores, only administering the test post intervention. Therefore, it may be that the female participants in this research were outperforming male students to begin with. Although these results cast doubt over the use of standardised assessments, it is encouraging to see research that suggests that test scores significantly increase in response to a growth mindset intervention.

### 2.3.2 Mindset and Well-Being

A key issue highlighted by The Good Childhood Report (The Children's Society, 2015) related to the well-being and unhappiness of CYP in UK schools. As growth mindset interventions modify the beliefs one possesses towards learning and ability, it seems plausible to propose that such interventions could also promote the well-being and enjoyment of learning in schools. Promoting well-being, including enhancing one's resilience, has been at the forefront of social

mobility initiatives. In a report for the all-party parliamentary group on social mobility, Paterson, Tyler and Lexmonds' (2014) highlight the importance of character development. Their report recognises that "personal resilience and emotional well-being are the missing link in the chain". Furthermore, they acknowledge that "social and emotional 'skills' underpin academic and other success – and can be taught" (p. 10). They describe character and resilience as an umbrella term consisting of a combination of personal attributes. Attributes such as perseverance, the ability to bounce back from adversity, self-control and self-direction considered crucial to character development, all of which are congruent with a growth mindset.

Yeager and Dweck (2012) reviewed research and found that redirecting CYP's mindset towards an incremental theory of intelligence promoted their resilience. This was demonstrated in the CYPs' ability to cope with challenging school transitions and higher levels of completion rates in difficult mathematics courses. Yeager et al. (2014) measured the implicit theories of pupils aged 14-15 years old, alongside measures of stress and self-reported physical health. Participants then completed a computer programme designed to elicit feelings of social exclusions and on completion, measures of attitude toward social exclusion were taken. Eight months after the initial assessment, the participants who held incremental beliefs reported less stress and physical illness compared to pupils with entity beliefs. However, the researchers themselves state that they cannot control for, or even identify, the contextual factors that may have supported these results over the eight-month period. Also, findings may be explained in terms of the experiences of students in the treatment group. For example, it may be plausible that participants that demonstrated less stress initially in response to induced social exclusion, were more resilient in making new friends, thus having greater social support and stability. It may have been these factors which led to successful outcomes over time.

### 2.3.3 Mindset and Teacher Interventions

Research has been conducted that examines the impact of implementing growth mindset interventions with teachers and staff to induce more systemic change within schools. For example, one study explored the role which

teachers had in the delivery of mindset interventions (Shumow & Schmidt, 2015). Within this study, two groups of students participated in an online mindset intervention supervised by the researchers themselves. The two groups were taught by different teachers. The researchers found that the teacher of the students who reported greater improvement in outcomes, more readily adopted and modelled the growth mindset stance themselves, compared to the other teacher.

Dweck and Mueller (1998) went further in exploring teacher effects of practising growth mindset by looking specifically at the use of praise. They conducted two studies with over 400 children aged between 9-12 years old. In the first experiment, students were given an easy puzzle and praised for either their intelligence or their effort. It was found that those who were praised for their effort then chose to attempt a much harder puzzle. In the second experiment, Dweck and Mueller (1998) gave the participants an extremely difficult puzzle to test their fear of failure. Those who previously received praise for their effort, demonstrated far more persistence than their counterparts, who were reported to have exerted far less effort.

The studies cited thus far were all conducted in America. One of the few studies to be conducted in the UK presented less conclusive findings. Rienzo, Rolfe and Wilkinson (2015) conducted research into mindset interventions in the UK on behalf of the Education Endowment Foundation. They looked at interventions directed at both teachers and students across thirty-six schools. However, contrary to the research conducted in America, Rienzo et al. (2015) found that interventions aimed directly at teachers had no impact on the English and mathematics attainment of their students. Interventions that involved direct teaching of growth mindsets through six-week workshops, delivered by specially trained undergraduate students, had a small impact on the students' learning and achievement. Although the improvement equated to two months' additional progress in English and mathematics, this was not a statistically significant difference (mathematics effect size of .24 and .07 effect size for English,  $N = 1134$ ). Therefore, it is possible to say that this progress was a result of chance.

Despite this, the progress made in English was close to being statistically significant, which could indicate potential for future interventions.

## 2.4 Strengths and Limitations of Literature

The research presented thus far provides a large evidence base for the use of growth mindset interventions for CYP in educational settings. The research clearly shows that teaching CYP about the malleability of intelligence not only improves their academic attainment (Blackwell et al., 2007; Grant & Dweck, 2003; Paunesku et al., 2015) but also promotes their well-being and health outcomes (Yeager & Dweck, 2012; Yeager et al., 2014). Longitudinal studies also show that these positive outcomes are not short-lived (Blackwell et al., 2007).

One strength highlighted by the research suggests that growth mindset interventions are particularly beneficial for reducing attainment gaps between disadvantaged groups in education. For example, African American boys at risk of stereotype threat (Aronson et al., 2002; Dweck & Molden, 2013) as well as minority groups or those from low socio-economic backgrounds (Good et al., 2003) were able to make significant gains in their educational progress. Furthermore, these interventions went as far as to demonstrate that they had a disproportionately positive effect on disadvantaged groups. The interventions implemented within the research presented differing models in their method of delivery. However, whether participants received direct teaching, completed online learning modules, or acted as advocates for growth mindsets in mentoring programmes, all methods gave rise to positive outcomes, although not all were statistically significant. This suggests the core messages of adopting a growth mindset have the power to influence change, regardless of the method employed. Additionally, these interventions appear to be easy to deliver as they are not resource heavy, as well as relatively low in cost to administer.

Despite the strength and depth of the research presented here, there are some limitations which are important to highlight. Firstly, an overwhelming proportion

of the existing research into growth mindset interventions are conducted by Dweck and her colleagues. Therefore, the findings may have been influenced by experimenter bias. Dweck has devoted her professional career to this particular domain of psychology, and may be motivated to draw conclusions that support her work. Consequently, an extremely large proportion of the research was conducted in America, meaning the evidence base for the application of mindset interventions within the UK, although promising, remains weak (Rienzo et al., 2015). The evidence base for mindset interventions may be more credible if a broader range of literature existed that was carried out by those not directly invested in the development of mindset interventions.

Although one of the key benefits of growth mindset interventions is the positive effect they can have on specific groups of disadvantaged CYP, the research fails to explore if these findings would be consistent with CYP with special educational needs. CYP with special educational needs in Britain are significantly less likely to be successful academically than their peers (Andrews, Robertson & Hutchinson, 2017), yet the lack of studies into this remains a huge gap in the existing literature. In addition, the majority of the research is conducted with older students of mainly secondary and college age. It would be difficult to know if similar results could be replicated with younger students.

Finally, one of the main limitations of the existing research is that there is very little evidence of what works best in order to inform future interventions. Despite the depth of the evidence, there is no clear method which has shown to be more effective than alternative means of intervention delivery. We know a variety of methods have proven successful, but the research fails to directly compare different delivery methods in order to see which is the most effective. This shortcoming provides difficulties for schools and professionals wanting to replicate interventions.

## 2.5 Researcher's Worldview

Reflexivity is “about understanding how research is affected, in terms of outcomes and process, by one’s own position as a researcher” (Fox et al.,



2007, p. 186). This involves holding an awareness that the researcher influences the researched and vice versa. They are engaged in an interactive process whereby the researcher's beliefs impact the research process in addition to the real world research influencing the beliefs, thoughts and feelings of the researcher. Fox et al. (2007) argue that reflexivity is integral to interpretive qualitative research. Ahern (1999) acknowledges that achieving total objectivity through reflexivity is unrealistic for qualitative research. Additionally, she argues that true objectivity is unnecessary. Instead, Ahern (1999) advocates for explicitly noting researcher assumptions. Through this process, the researcher is attempting to use reflexivity to ensure participants' true perspectives are reflected in the data. Engward and Davis (2015) suggest that disclosure of the researcher's perspectives and position contribute to reflexivity and thus identification of potential bias. The assumptions the present researcher held prior to, and throughout this study, were noted using a research diary (see Appendix 7). These are detailed in Table 2.1 below:

	Assumption
1.	Growth mindset was a theory that was essentially positive and aimed to support CYP.
2.	It was an intervention to improve academic attainment and well-being of CYP.
3.	It was a simple, yet effective theory that could be easily applied.
4.	It was something teachers could do to positively impact the effort CYP exerted.
5.	It would be well-received by teachers and staff in the same way it was for me as a psychologist
6.	Schools would adopt 'growth mindset' and interpret it in many ways, with a wide variety of practice and some model drift.
7.	It was the work of Carol Dweck that school staff would have heard of, and were using to embed in their schools.
8.	Growth mindset would be taught explicitly, using the terminology associated with Dweck's work.

*Table 2. 1. Assumptions held by the researcher prior to data collection and analysis.*

To further contribute to the reflexivity of this research, the researcher acknowledges that it is naïve to think we can undertake research with little or no prior knowledge or awareness of the topic under investigation. As grounded theory researchers, we recognise that we cannot start off as a blank slate with no preconceived ideas about the research topic. Thornberg (2012) refers to this as 'naïve empiricism'. This contributed to the justification of the initial literature review. However, the researcher recognised the risk of pre-existing knowledge potentially finding its way in to the data (Strauss & Corbin, 1998; Thornberg, 2012). Familiarisation of concepts may result in the researcher looking for confirmation within the data instead of ensuring the concepts are truly emerging from the analysis. The process of constant comparison helped avoid the risk of ideas from the initial literature review, being forced in to the emerging theory.

## 2.6 Chapter Summary

This chapter aimed to provide a background to the current study by presenting an overview of existing mindset literature. In summarising the strengths and limitations of the studies, gaps in research were highlighted, providing additional rationale and relevance of the present study. The issues around reflexivity has also been explored. The next chapter will describe the methods utilised to conduct this research, and address the gaps in knowledge.

## 3. Methodology

### 3.1 Chapter Overview

This chapter details the purpose of this research, outlining the conceptual theoretical and epistemology framework that underpins both the research area and the researcher's own positioning. Justification for the choice of employing a qualitative design will be explored with a detailed exploration of different approaches within grounded theory methodology. The chapter goes on to describe the process of data collection including the sampling techniques, participants, measures taken and analysis. It concludes with looking at the strengths and limitations of the chosen methodology, specifically highlighting issues surrounding validity and ethics.

### 3.2 Purpose of Enquiry

It is important to carefully consider how research is framed. Fox, Martin and Green (2007) recognise that "research has different purposes that are best served by different research designs" (p. 21). Consequently, the purpose of a study will heavily influence how the research is undertaken.

Typically, research within social sciences is distinguished according to a tripartite classification (Robson, 2002). However, Robson (2002) added a fourth purpose of research enquiry to account for the growing interest in conducting real world research. Robson (2002) describes how one research study may have one or multiple purposes, depending on the topic being researched. However, it is more typical for one purpose to take precedence.

The four categories are summarised as:

- **Exploratory** – to gain a greater understanding of little known or under-researched phenomena.
- **Descriptive** – to provide an accurate, detailed reflection of people, events or phenomena.
- **Explanatory** – seek to explain a problem or situation, highlighting the relationships or patterns between the researched phenomena.

- **Emancipatory** – to create opportunities to empower or promote change within a real world context.

As discussed in the initial literature review (see Chapter 2), growth mindset has been well researched in America but there is very limited knowledge regarding its application in the UK. As the researcher aims to gain a greater understanding of an area which is relatively unknown and under researched, the purpose of this current study is therefore exploratory. Both research questions are exploratory in nature; however, the researcher was aware that as the research proceeds, the purpose may evolve.

It was hoped that the exploratory disposition of the research questions would elicit rich, detailed data that would enable the development of a theory of growth mindset implementation and practice. Consistent with exploratory methods of enquiry, it was an attempt to form the basis of future research.

### 3.3 Conceptual framework

#### 3.3.1 Ontology and Epistemology

Mertens (2015) quite simply defines one's ontological position, or sometimes known as research paradigm, as how one views the world. It reflects how a person views reality. The issue of ontology has been of great debate within social sciences research. Moore (2005) argues that the profession of educational psychology should give greater attention to ontology and epistemology. Moore (2005) suggests that greater consideration should be given to the theoretical foundations of EP practice given the ever changing society and complex context within which professionals both practice within and research.

Two paradigms or worldviews have dominated social science research: positivism and social constructivism. The former assumes that one objective reality exists and that it is the job of the researcher to discover it. Consequently, positivism assumes the same scientific method can be adopted to research both the natural and social world (Mertens, 2015). The positivist approach is

typically synonymous with quantitative research. Moore (2005) argues that the tendency for educational psychologists to adopt a positivist position has limited and even hindered their work.

Social constructivists hold an ontological stance that views reality as being socially constructed. As Mertens (2015) describes, the basic assumptions of this paradigm are that “researchers should attempt to understand the complex world of lived experience from the point of view of those who live it” (p. 16-17). From this perspective, each person has their own constructed view of the world and research will never be truly independent from the researcher’s own values.

### 3.3.2 Critical Realism

The ontological position adopted by this research is ‘critical realism’. Sayer (2000) argues that critical realism provides “a third way between” (p. 3) the reductionist stance of positivism and constructionists’ multiple interpretations of meaning. Critical realists accept the notion that one reality exists, but acknowledge that the understanding of this reality is inevitably distorted by human limitations and biases (Mertens, 2015). Therefore, research can only seek to highlight or explain reality within varying degrees of probability. Maxwell (2012) states that critical realists:

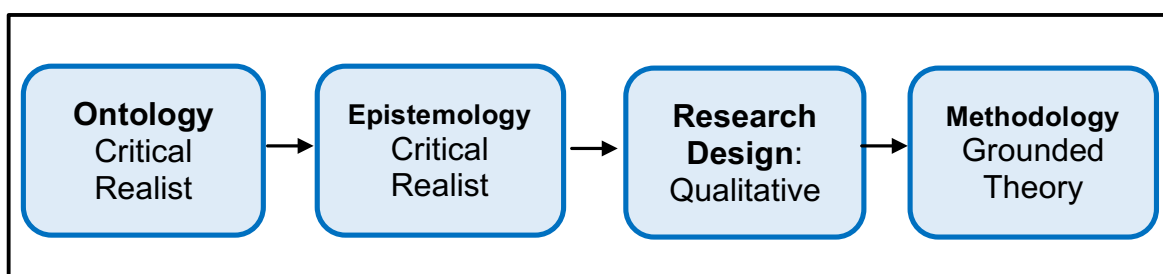
Deny that we can have any “objective” or certain knowledge of the world, and accept the possibility of alternative valid accounts of any phenomenon. All theories about the world are seen as grounded in a particular perspective and worldview, and all knowledge is partial, incomplete, and fallible (p. 5).

The recognition that knowledge cannot be viewed as unbiased or factual, reflects the critical realist epistemological position adopted by this research. Although positivists hold the belief that researchers can maintain neutrality and not influence or bias their research, critical realists take an alternative view. Critical realists accept that knowledge can only be viewed and understood from an individual’s perspective and that human interaction with knowledge is always open to bias and imperfection. It is important for researchers holding critical

realist epistemologies to have an awareness of their own cultural beliefs and personal values and remain reflexive in considering how these may impact the interpretation of data and theory. Thus, the values of the observer can influence the observed (Robson, 2011). The researcher and the research findings are, therefore, entwined in an interactive process.

### 3.3.3 Critical Realism and the Current Study

A research epistemology is highly influenced by the perception of the relationship between the researcher and the researched. When epistemology and ontology are combined together in research, they provide the theoretical basis of the research that defines how knowledge is viewed within an understanding of reality. These positions steer a researcher towards methodology best suited for the researcher and their study. This is often depicted as a conceptual framework. See Figure 3.1 for the conceptual framework of this research.



*Figure 3. 1. The conceptual framework of this research.*

Anastas (1998, in Robson, 2002) proposes that critical realism is an optimal approach for value based professions such as educational psychology and is ideal for real world research. Within practice based research, critical realists seek to explain social phenomena and gain a greater understanding of varying perspectives based on the assumption that data collected from participants can uncover something about their lived reality. Underpinning this is the idea that mechanisms (or processes) exist that can trigger desired outcomes or positive

change. Robson (2011) describes how critical realist researchers aim to “develop knowledge and understanding about the mechanism through which an action causes an outcome, and about the context which provides the ideal conditions to trigger the mechanism” (p. 30). This is a useful approach when dealing with complex social phenomena (Elster, 1989).

Central to this research was the idea that some CYP persist and demonstrate resilience when faced with challenging tasks, whilst others avoid challenges and appear to give up quickly. Mindset (fixed or growth) can be viewed as a mechanism to explain this phenomenon. This research was interested in the concept of growth mindset and aimed to identify the mechanisms that trigger CYP to believe that they can acquire new skills and continue to learn as a result of hard work and strategy. Of particular interest is the context required in which to trigger the mechanisms. For example: what was it that schools and staff did that impacted a child’s mindset and what was needed for this to take place? A critical realist would therefore aim to identify multiple mechanisms through the interpretation of underlying social processes.

This research rejected a positivist position as it accepts there may not be one objective truth. Instead, the culture of school and education is far more complex, with individuals each holding their own view of reality. Furthermore, the focus of this research was not on observable, measureable behaviour, but the lived experiences and perceptions of individuals within educational settings.

Positivists’ natural alignment to quantitative research was not deemed appropriate for this research. Although historically, controlled experiments were regarded as the only true scientific approach to research, such methodology for this study would be hard to design and not conducive to the exploratory purpose of this research.

### 3.4 Research Design

Research design relates to identifying the best method for finding answers to one’s research questions. The design is often dependent on the purpose of the research, the researcher’s ontological and epistemological position and well as

practical implications such as capacity, time, capability and available support.

Robson (2002) proposed three research designs to consider when undertaking real world research. These are a fixed design (quantitative), flexible design (qualitative) or multi-strategy research (using both quantitative and qualitative methods).

Hatch (2002) proposes that qualitative research is defined by several characteristics. It is the following qualities that distinguish it from alternative research designs:

- research takes place in a naturalistic setting,
- focus is on the perspectives of participants,
- the researcher is viewed as a tool for data collection,
- the researcher engages with data collection first hand,
- there is an inductive process of data analysis, and
- the researcher takes a reflexive stance.

The exploratory nature of the research questions in this study naturally lends itself to qualitative data and a flexible research design. King, Keohane and Verba (1994) also state that qualitative research is deemed most appropriate when the focus is on individual perceptions of processes within a social context. The current study explored the experiences of participants within an educational context, and is therefore well placed to have adopted a flexible research design.

#### 3.4.1 Introduction to Grounded Theory

Grounded theory is a qualitative research method. It was first proposed by Barney Glaser and Anselm Strauss in 1967, but has since been subjected to multiple revisions. Glaser and Strauss (1967) were dissatisfied with existing methods for undertaking social research and so published 'The Discovery of Grounded Theory'. Their aim was to move away from traditional approaches to research whereby the purpose was to verify or disprove pre-existing theories. Instead, Glaser and Strauss (1967) designed a method that would allow them to develop theory grounded from data, specific to the context in which they had been developed (Willig, 2013; Walker & Myrick, 2006). This approach to



research has been widely applied within social science fields (Lawrence & Tar, 2013).

Strauss and Corbin (1998) suggest that the emphasis on generating theory makes grounded theory distinguishable from alternative qualitative research methods. Researchers adopting this method do not begin with preconceived theories but allow theory to develop throughout the process of data collection and analysis. This gives way to a contextualised theory which is more likely to represent 'reality' (Strauss & Corbin, 1998). Grounded theory was therefore an appropriate methodology for this research as little was known about the application of growth mindset within the context of UK schools. Subsequently, the researcher was not aiming to prove/disprove existing theory. Instead, grounded theory provided a framework with which to understand the phenomenon under investigation and the conditions in which supports the implementation of growth mindset (Willig, 2013).

### 3.4.2 Types of Grounded Theory

Grounded theory is regarded as one of the most disputed and debated of research methods (Walker & Myrick, 2006). However, it is generally accepted within the domain of qualitative research that three main versions of grounded theory exist (McCallin, 2004). The methodologies proposed by Glaser and Strauss (1967), Strauss and Corbin (1998) and Charmaz (2000; 2006) reflect paradigm shifts from an initial positivist stance to a social constructivist world view.

Glaser and Strauss' (1967) focus on 'discovering' theory denotes a pre-existing reality or objective truth, suggesting the role of the researcher is to simply uncover something that is already there (Willig, 2008). Additionally, their emphasis on categories 'emerging' from data fails to reflect the influence the researcher undoubtedly has on data analysis and interpretation (Willig, 2008).

Conversely, Charmaz (2000; 2006) holds a social constructionist view, stating that categories do not simply emerge, but are developed through an interactive process between the researcher and the data. Categories are therefore

constructed by the researcher, having acknowledged that the decisions made by the researcher throughout the process will have impacted the data, and thus, the findings. Within this approach, theory is merely one way of representing the findings, rather than reflecting reality (Willig, 2008).

This research aligned itself with Strauss and Corbin's (1998) approach to grounded theory as it was best suited to the critical realist ontological and epistemological orientation of this study. Strauss and Corbin (1998) assume an objective reality exists but seek to understand it through the multiple perspectives of participants. Willig (2013) elaborates further by suggesting that just because a researcher may be unaware of a reality, it does not mean it does not exist. It merely needs to be observed and documented through human interpretation. In the present study, the process of understanding how to enhance growth mindsets within educational settings is understood by using the views of participants as a tool to highlight the mechanisms involved in promoting change. The critical realist epistemological stance acknowledges the role of the researcher in interpreting the data and reaching such findings.

### 3.4.3 Characteristics of Grounded Theory (Strauss & Corbin, 1998)

Although grounded theory is widely used in real world research, it has been argued that many researchers refer to their work, or findings, as 'grounded theory' yet very few have actually adhered to the guidelines and procedures set out by the key originators (Hatch, 2002). These guidelines are regarded as flexible tools as opposed to strict rules but nevertheless have consistent approaches (Charmaz, 2006; Sutcliffe, 2016). For this purpose, key concepts that are integral to grounded theory and were utilised in the present study are briefly described (Table 3.1).

Concept within Grounded Theory	Description of Concept
Theoretical Sampling	Process of selecting participants based on the data collected thus far.
Theoretical Sensitive Coding	Non-linear process of coding data to identify categories and core concepts.

Constant Comparison	Two-way process of identifying similarities and differences between categories within the data.
Theoretical Saturation	The point in data collection whereby no new information is emerging. It marks the end point in theoretical sampling.
Memo Writing	Notes kept by the researcher throughout data collection and analysis recoding thoughts, hypothesis, emerging ideas, and possible links between codes and categories.

*Table 3. 2 Key concepts within grounded theory methodology.*

Each of the above concepts are explored in greater detail below.

#### 3.4.4 Rationale for Grounded Theory

Grounded theory was deemed a suitable methodology for the present study as the researcher was not seeking to prove pre-determined hypotheses, but aimed to gain a greater understanding of an area whereby no pre-existing theories existed. Robson (2011) supports this view stating that grounded theory is particularly useful “in applied areas of research, and novel ones, where the theoretical approach to be selected is not clear or is non-existent” (p. 192). Lawrence and Tar (2013) also state that “grounded theory makes its greatest contribution in areas in which little research has been done” (p. 35).

Additionally, the researcher acknowledged their inexperience in conducting formal research. The systematic, explicit procedures for conducting the research, analysing data, and generating theory provided a framework for working with qualitative data. It also provided the researcher with a trustworthy and transparent process whilst respecting “the messiness of real data” (Sutcliffe, 2016, p. 44). Similarly, it provided a means of dealing with data analysis and collection in interpretive research (Hughes & Howcroft, 2000). These advantages significantly outweighed the potential problems associated with this methodology, such as the difficulties the researcher had in avoiding pre-existing assumptions and bias, the labour intensive nature of the approach, and the failure to establish generalisability from small scale, subjective data.

Alternative qualitative methods of research were considered but were not conducive to the aim of the present study: to develop a contextualised theory of growth mindset implementation in mainstream schools. Thematic Analysis was discarded as a data analysis method as it is not recommended for exploring complex social phenomena and does not go beyond highlighting patterns in data (Robson, 2011). Interpretative Phenomenological Analysis (IPA), Narrative Analysis and Discourse Analysis were also considered to be inappropriate, and not conducive to the critical realist position this study adopted.

### 3.5 Data Collection

#### 3.5.1 Sampling Strategy

Schools which promote the use of growth mindset were integral to this research as they could provide a unique insight in to how theory is applied in context. The initial two participants were recruited as they could share their experiences and knowledge which were essential to the development of theory. This is known as a purposive sampling method. Purposive sampling is a non-random method whereby the goal is “to generate new theories by obtaining new insights or fresh perspectives” (Mertens, 2015, p. 319). This method of sampling was based on the researcher’s perception but also allowed them to strategically choose participants in order to elicit a depth of meaningful data.

Subsequent participants were recruited following the analysis of the initial interviews in line with the methodology of this research. Within a grounded theory approach, this method of sampling is known as theoretical sampling. Glaser and Strauss (1999) describe this method as:

The process of data collection for generating theory whereby the analyst jointly collects, codes and analyses his data, and then decides what data to collect next and where to find it, in order to develop his theory as it emerges. (p. 45)

The recruitment of further participants was therefore dependent on the concepts and categories that emerged from the initial interviews through the process of

constant comparison. Interviews continued to be conducted until the data analysis reached theoretical saturation (see section 3.4.3 for more information).

Unlike traditional research, this study did not aim to recruit participants to represent a wider population nor develop a theory which could be generalised. Flick (2014) describes sampling methods within grounded theory methodology:

People to be studied are selected according to their relevance to the research topic; they are not selected for constructing a (statistically) representative sample of a general population. (p. 137)

### 3.5.2 Process of Sampling and Recruitment

At the time this research was undertaken, there were 251 primary schools, 2 middle schools and 42 secondary schools within the LA, including LA controlled schools, academies, and free schools. To narrow the search, the first step in participant recruitment was to identify schools within the LA which claimed to promote growth mindset. To do this, two methods were utilised. Firstly, the researcher conducted a simple internet search using a well-known search engine. The search terms were 'school growth mindset'. This was completed twice, firstly, including the name of the local town and including the name of the county in the subsequent search. This yielded a list of 13 schools which referenced growth mindset on their websites. Secondly, the researcher asked colleagues within the local Educational Psychology Service for the names of any schools they were aware of that were using growth mindset. This added an additional five schools to potentially recruit.

The initial part of the recruitment involved the researcher contacting the identified schools via email with an attached information sheet (See Appendix 2). The email was addressed to head teachers, deputy head teachers and Special Educational Needs Coordinators (SENCOs). In cases whereby the researcher did not receive a response, a follow-up phone call was made to the school, with the researcher specifically requesting to speak with the member of staff in school responsible for promoting growth mindset.

Participants were invited to partake in the research if they met the inclusion criteria as depicted in Table 3.2:

Inclusion Criteria for Purposive Sampling:
Participants must be employed by an educational setting within the LA.
Participants must have worked in the same setting for a minimum of one full academic year
They must have responsibility for, or direct involvement in, implementing growth mindset in the educational setting.

*Table 3.3. Participant inclusion criteria for the present study.*

It was essential that participants were directly involved in implementing growth mindset in their setting. It was expected that participants would hold a position of leadership or responsibility that made them accountable for the continued professional development (CPD) of staff or educational initiatives in school as these typically encompassed growth mindset. As they were integral to the implementation of growth mindset practice across whole school provisions, they were considered to be the stakeholders of information required in the initial phase of this research. Participants were also required to have worked in the educational setting for a minimum of one full academic year to ensure they have experience of a full cycle of growth mindset application and were well positioned to comment on the impact it may have had.

Consistent with theoretical sampling and grounded theory methodology, the number of participants was not known in advance. Additional participants were sought after the coding of the previous interview. The choice of participant was influenced by the emerging themes and concepts from the data analysis.

### 3.5.3 Characteristics of Sample

The participants that took part in this research are described in Table 3.3 below:

	Gender	Role in School	Type of Educational Setting	Age Range of Educational Setting
1.	Female	Year Two Leader	Mainstream	Primary
2.	Female	Deputy Head Teacher	Mainstream – Academy	Secondary
3.	Male	Deputy Head Teacher	Mainstream - LA	Secondary
4.	Female	Lead Practitioner	Mainstream - Academy	Secondary
5.	Female	Assistant Head Teacher	Mainstream - LA	Secondary

*Table 3. 4. Participant characteristics.*

Consistent with theoretical sampling, the researcher decided who to interview next, based on concepts that emerged from the previous interview. Following the first interview in a primary based setting, the researcher sought a secondary setting, to make comparisons between their practice. Data analysis at this stage revealed an interesting difference in mindset application, with the primary setting demonstrating a relatively basic interpretation of mindset theory. Their practice included reframing mistakes so they are a valuable part of the learning process and adapting praise to focus much more on effort. Whereas the secondary setting revealed much more complex and interesting methods of implementation, embedding mindset theory across a whole school context where the process of learning is the focus. Consequently, the researcher followed the direction of the analysis, and continued to explore the application of growth mindset evident within secondary education. It was the implicit, whole school methods of delivery, and the desire to cultivate a school wide ethos that led to the continued investigation of mindset practice in secondary settings.

## 3.6 Data Collection

### 3.6.1 Strategy for Data Collection

Semi-structured interviews were conducted in order to elicit the rich, detailed data required for this research. This method of data collection is common within grounded theory methodology (Hallberg 2006; Robson, 2002). Charmaz (2006) explains that such in-depth interviews allow a detailed exploration of the chosen topic which goes beyond surface level conversations.

Robson (2002) describes semi-structured interviews as having the following features:

- Pre-determined questions,
- flexibility in the order in which the questions can be presented,
- the wording of questions can be changed,
- further explanations of the meaning behind the questions can be given,
- particular questions can be omitted if deemed inappropriate for the interviewee, and
- additional questions can be added if required.

The present study adopted this method of inquiry due to its flexible nature. This was advantageous for grounded theory research as it allowed for further investigation of responses given by the interviewee. Consequently, additional lines of enquiry were followed up in anticipation of eliciting more detailed and meaningful data.

A pilot interview was conducted to reduce the likelihood of problems occurring in subsequent interviews and to explore the utility of the interview questions. However, the pilot interview elicited rich detailed data which was deemed to answer the research questions. Consequently, the pilot interview data was included within the data analysis of this research and the interview schedule was not amended.



All interviews took place within the educational setting in which the participant worked. The interviewer requested that a room was booked to ensure that the interviews were not interrupted or influenced by the presence of other individuals. It was hoped that conducting the interviews in a setting which the interviewees were familiar with enabled them to feel comfortable and be more open in their responses.

The data collected focused solely on the verbal content of the interview as opposed to additional analysis of non-verbal cues within the interview itself. This was to prevent potential bias that can occur as a result of interpretation of such subjective data. Additionally, the collection and analysis of non-verbal data raises reliability issues due to the lack of standardisation (Robson, 2002).

The first four interviews lasted between 34-52 minutes. This was deemed an optimal length for qualitative interviews as less than thirty minutes is unlikely to produce the detailed, rich data required for grounded theory research. Additionally, requesting more than an hour of the participants' time may be an unreasonable demand and result in difficulties recruiting (Robson, 2002). The final interview lasted 23 minutes, which led the researcher to the conclusion that saturation had been reached (see Chapter 4 for more information). The interviewer remained flexible throughout and followed the natural flow of the interview. The interviews were terminated when no new information was elicited and saturation had been reached.

All interviews were recorded using Audacity™ on an encrypted LA laptop and later used for transcription. This allowed the interviewer to fully focus on the participant and reduced the likelihood of information being lost through note-taking (Elliott, 2005; Hoepfl, 1997). The audio recordings will be retained so that the method or analysis of data within this research can be easily implemented. This process promotes the reliability of the data collection and analysis (Merriam, 1998). The recordings will be destroyed upon completion of the research.

### 3.6.2 Transcription

All interviews were fully transcribed by the researcher as it is considered good practice for the researcher to fully familiarise themselves with the data prior to analysis (Hermanowicz, 2002). Throughout the transcription process, memos (see sample in Table 3.4) were written in accordance with Strauss and Corbin (1998) who advise “when stimulated by an idea, the analyst should stop whatever he or she is doing and capture that thought on paper” (p. 220).

Each interview was transcribed on to a Word document following a verbatim style. Only the dialogue recorded in the interviews was included in the transcript. This included verbal pauses such as ‘um’ and ‘err’ but no additional non-verbal communication was transcribed due to its subjective nature. The transcripts were reviewed and checked for accuracy by the researcher prior to data analysis (see sample in Appendix 6).

### 3.7 Data Analysis

Grounded theorists aim to derive theory from data through the process of coding. Willig (2013) regarded the coding process as “the most fundamental process in grounded theory” (p. 73). Although grounded theory has a distinctive, detailed method of data analysis, a number of researchers propose slightly different methods of approaching it (Glaser, 1992; Charmaz, 2006; Strauss & Corbin, 1998). This research utilised Strauss and Corbin’s (1998) **theoretical sensitive coding**. Within this approach, the analysis of data is subjected to three levels of coding in order to produce a robust theory. These levels are described as follows:

- **Open Coding** – data is broken down into small units which could take the form of a sentence, or even paragraph. Each unit of data is then labelled with a code. These form categories about the information collected.
- **Axial Coding** – codes are linked together, connecting the themes highlighted in open coding. These begin to form over-arching categories.

- **Selective Coding** – one core category is chosen which is central to analysis. A systematic exploration of the core category is undertaken to see how it is linked to other categories.

This process of data analysis is not typically sequential, the researcher will often go back and forth between levels of coding (Sutcliffe, 2016). It is likely that in order to narrow down data and generate coherent codes and categories, open coding and axial coding will be revisited numerous times. This non-linear model of research is appropriate for understanding complex social phenomena (Robson, 2002). It allows for categories to be refined and a more robust theory to be generated. Typically, the coding system will simplify as categories emerge and become more coherent (Robson, 2002).

### 3.7.1 Constant Comparison

The common feature between data analysis approaches within grounded theory is the process of constant comparison. The repeated comparison of information from data collection involves identifying similarities and differences between categories and the emerging theory (Robson, 2002). It is therefore the role of the researcher to engage in constant comparison through axial and selective coding to verify the emerging categories.

### 3.7.2 Coding Process

The data analysis process is represented in Figure 3.2 through the following stages:

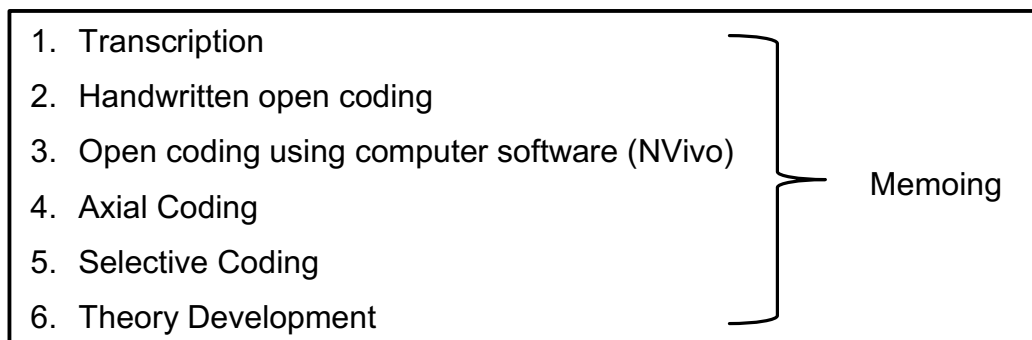


Figure 3. 2. Process of data analysis

It is important to note that this was not a linear process. As with grounded theory methodology, data collection and data analysis are entwined in an iterative process. The researcher went back and forth between interviews and analysis, revisiting the stages of coding numerous times.

### 3.7.3 Open Coding

Open coding is described as “the analytic process through which concepts are identified and their properties and dimensions are discovered in data” (Lawrence & Tar, 2013, p. 32). The first phase of open coding began by transcribing and analysing data soon after each interview was conducted. Furthermore, as it is regarded as good practice within grounded theory, each interview was coded before moving on to the next (Corbin & Holt, 2005).

Initially, transcripts were printed and read through in detail before the researcher began handwriting codes directly on the transcript. As recommended by Strauss and Corbin (1998) a line-by-line procedure was followed, whereby each line is deconstructed and interpreted for meaning and thus codes (see Table 4.1 in section 4.2.2 for an example). This process is also referred to as microanalysis, and can be applied to individual words, lines, sentences or paragraphs (Strauss & Corbin, 1998). Microanalysis allows the data to speak for itself, takes the researcher beyond mere description, and promotes analytical thinking and questioning of the data, enriching the analytical process (Strauss & Corbin, 1998). It also ensures that emerging categories are truly grounded in the data (Willig, 2013).

Through open coding, small pieces of data were interpreted and codes given. The codes varied from single words to longer descriptions of the data. At times, ‘in-vivo’ codes were used whereby the name of a code was taken directly from the words used by the participants (Glaser & Strauss, 1967). Multiple codes could also be given to one text segment, reflecting the messiness of real world, qualitative data.

This process resulted in 133 initial handwritten codes for interview one alone. The subsequent step of open coding was to look for similarities and differences

between the codes, in order to create low-level categories. However, the number of initial codes was deemed too great for the researcher to hold in mind, or begin to organise without important data at risk of being overlooked.

Therefore, the decision was made to use a computer software programme called NVivo. The transcript for interview one was uploaded in to the software and the initial codes transferred over. Codes that were similar in concept or meaning were then grouped together to form low-level categories. NVivo was utilised for all subsequent transcripts to support the iterative nature of the coding process.

#### 3.7.4 Axial coding

Through axial coding, the researcher begins to reconstruct the data that was deconstructed through open coding. During axial coding, open codes are subjected to constant comparison in order to form higher-order categories. Open coding and axial coding are engaged in an interactive process and memos were used throughout to record potential links between codes (see section 3.4 for more information).

#### 3.7.5 Selective coding

In the final phase of coding, the categories derived from axial coding are analysed further, exploring the relationships between them to achieve a higher level of abstraction. From this process, a core category emerges which is highly condensed but central to the data. Strauss and Corbin (1998) achieve this through a 'story line' whereby the analysis of data moves from mere description to a concept that allows you to fully understand the process, thus 'story line' of the data.

#### 3.7.6 Memoing

Memos are considered an integral part of grounded theory methodology (Charmaz, 2006; Strauss & Corbin, 1998; Sutcliffe, 2016). Memos can take the form of handwritten notes or recorded on specific computer software. They are devices that support the research process by detailing the relationships between data. Strauss and Corbin (1998) highlight the importance of memoing

as they “record the progress, thoughts, feelings and directions of the research and researcher” (p. 218).

Consistent with grounded theory approaches, memos were kept throughout the research process. They served multiple purposes: to ensure the emergent theory is grounded in the data, to maintain the awareness of the researcher, to refine codes, to develop key categories, and to identify links and relationships between codes contributing to the constant comparison process. Sutcliffe (2016) also claims that memoing contributes to reflexivity as well as the transparency and trustworthiness of the data analysis. Without memos, the proposed theory may lack rigour and conceptual credibility (Strauss & Corbin, 1998).

Memos were recorded any time viewed necessary by the researcher (see Appendix 7). However, the majority tended to be recorded directly following an interview, during transcription, and through the process of theoretical sensitive coding. They were handwritten and integrated as part of the research diary. Examples of memos can be found in Table 3.4 below:

Date	Stage of Research Memo was Recorded	Memo
27.03.17	Following first interview	Impact alludes to behaviour/attitude – not actual attainment
27.03.17	Following first interview	Initiative working in isolation
18.04.17	Transcribing interview one	Quite a personal experience, is that the appeal?
21.06.17	Following interview two	Viewed growth mindset as raising aspirations
22.06.17	Transcribing interview two	Use of language important
29.06.17	Open coding of interview two	Focus on GCSE results and attainment
29.06.17	Open coding of interview two – beginning of axial coding	Similarity between both interviews, started thinking of whole school approaches ended up with a narrower

		focus
05.07.17	Following interview three	Misconception of theory, some staff not understanding what it is

*Table 3. 5. Examples of memos recorded by the researcher throughout different stages of data collection and analysis.*

### 3.7.7 Saturation

The concept of saturation is a hallmark of grounded theory methodology. Saturation represents the point at which data collection should end (Lawrence & Tar, 2013; Glaser, 1992). Saturation has been reached once categories, and the relationships between them, are established and well-developed (Strauss & Corbin, 1998). This is achieved through ‘constant comparison’. The point at which no new categories emerge from data suggests saturation has been reached, and thus denotes the end of theoretical sampling.

In the present study, saturation was evident from interview four with very minimal new themes emerging through the data analysis process. The decision was made to proceed by interviewing an additional participant to explore axial themes in more detail. A new interview schedule was created to examine the theme relating to the implicit and explicit application of growth mindset theory in greater depth (see Appendix 4 for the interview schedule). From interview four onwards, coding, through the process of constant comparison, did not impact the core categories. Saturation had been fully reached by interview five. Despite the investigation of new themes, the participant did not express views that differed from the emerging themes, therefore leading to a shorter interview and subsequently a perceived saturation point.

## 3.8 Design Strengths and Limitations

### 3.8.1 Trustworthiness

Reliability, validity and generalisability are positivist traditions traditionally associated with quantitative research (Golafshani, 2003). They are evaluative

measures associated with quantitative data that seeks to identify an objective, measurable truth or reality. These concepts are deemed inappropriate for this research, as grounded theory is qualitative in nature and accepts that measures of truth are subjective and based on perceptions. Similarly, grounded theories are unlikely to have high levels of reliability or generalisability due to their specific, contextualised nature and small sample sizes. Furthermore, the aim of grounded theory researchers and the present study was not to produce a generalisable theory, but to act as a stepping stone for further research into growth mindset practices in the UK. Consequently, an alternative means of evaluation is needed which aligns itself with the epistemological position of this research.

Qualitative researchers judge the quality of studies on indicators deemed far more suitable for social research such as 'trustworthiness'. This is described as the extent to which readers believe the findings or proposed theory is worthy of attention (Lincoln & Guba, 1985). According to Guba (1981), trustworthiness involves establishing credibility (internal validity), transferability (external validity), dependability (reliability) and confirmability (objectivity). Several techniques described by Lincoln and Guba (1986) to promote trustworthiness were utilised in this research and are described below.

### 3.8.2 Credibility

Credibility is described as the confidence one has in the 'truth' of the findings. The credibility of the proposed theory is supported by:

- In-depth interviews which were conducted with all participants - the interviews were semi-structured to allow for follow-up questions to fully explore concepts that arose.
- Constant comparison applied to explore discrepancies within the data - data was collected and analysed until saturation, whereby no new information or concepts emerged.
- Checking procedures were utilised, whereby the researcher's coding was checked throughout the data analysis process by a research supervisor and



an additional psychologist. It was agreed that the choice of coding was appropriate and accurately reflected the data.

- Member checks conducted whereby all participants were asked to comment on the categories which emerged from the data following the researcher's analysis and interpretation. The response received signified a general acceptance and agreement with the final categories which resonated with their experiences they shared initially. See Appendix 11 for full description of participant responses.

### 3.8.3 Transferability

Transferability is described as the relevance the research holds to the reader in its usefulness to themselves or their context. The transferability of this research was promoted via numerous means. Devices used include the following:

- A theoretical/purposive sampling method, which is utilised to ensure the most appropriate participants were invited to partake in this research.
- A varied sample with participation of both men and women, as well as a range of mainstream educational settings.
- Research undertaken in a naturalistic setting, with interviews conducted in the school context. Subsequently, analysis and coding were undertaken in relation to the educational context.
- A 'thick description' which relates to the depth and breadth of data (Geertz, 1993).

Although some variation within the sample (gender, school type) is evident, there are limitations to the transferability of the proposed theory. The small sample size and scope of the present research could prevent wider application of the findings beyond mainstream schools in the LA. Furthermore, the demographics of the LA would vary extensively from many others across the county, again limiting the relevance the findings may have in other contexts. Despite this, the aim of the present study was not to produce a theory with the power to generalise to much wider populations, but to explore and gain a better understanding of how growth mindset is currently being applied within this area.

Therefore, the result is a highly contextualised theory which is a starting point for understanding growth mindset application and subsequent research.

#### 3.8.4 Dependability and Confirmability

Dependability is the qualitative counterpart to reliability. Research is deemed dependable if the findings are consistent and could be repeated if the same methodology was undertaken (Lincoln & Guba, 1985). The confirmability of research relates to the extent to which the researcher has successfully eliminated bias from the study. This does not mean the researcher remains truly objective, but is open and transparent throughout the process. In doing so, it is hoped the reader can judge the confirmability of the present study. As with grounded theorists, the role of the researcher is acknowledged and even celebrated (Strauss & Corbin, 1998) as they play an active part in interpreting and constructing meaning from data. However, it is vital that the emerging themes and concepts are truly grounded in the data and not influenced by the researchers pre-existing assumptions or ideas.

The method deemed suitable for promoting the dependability and confirmability of research is to provide an audit trail (Robson, 2011; Guba, 1981; Lincoln & Guba, 1985). For the present study, the researcher ensured all raw data such as initial interview recordings and transcripts of interviews have been kept and are available on request. The researcher also kept a research diary and memos have been extensively provided in Appendix 7. The process of coding and data analysis has been transparent and well documented with evidence of interpretations in section 4.2.2. Consequently, all methods of data collection and analysis used in the present study are explicated and open to public scrutiny. Furthermore, the findings were subjected to member checks, as detailed in section 3.8.2.

The process of reflexivity also contributes to the dependability and confirmability of this research. The researcher practiced reflexivity through the use of memos, presenting pre-existing knowledge via the initial literature review, and by acknowledging the assumptions held prior to the present study (see section 3.7.7 for more detail).

### 3.8.5 Threats to Validity

Robson (2011) describes research as valid if it can be regarded as “accurate, or correct, or true” (p. 170). Within qualitative research, there are a number of threats to the validity of a study. The devices employed and detailed above (section 3.7) counteract some threats to validity but additional measures were taken by the researcher to enhance the validity of the present study.

Maxwell (1992) detailed three main tenets of qualitative research: description, interpretation and theory. Describing what was seen or heard throughout the process of data collection and analysis can be subjective and therefore open to bias through misinterpretation, inaccuracies in recording, or presentation of incomplete data. To ensure a valid description of data was presented, the researcher of the present study used an audio-tape to record interviews so that all information was accurately captured and included in the study.

To ensure the interpretation of the data, and thus, the development of theory was valid, Maxwell (1992) suggested that a clear demonstration of how the final conclusions were reached. This has been well documented throughout Chapter 4 through examples of transcriptions, coding and memos. Furthermore, to ensure all explanations of data were explored the researcher engaged in the process of constant comparison. In doing so, the data was subject to questioning and the researcher actively looked for similarities and differences.

### 3.8.6 Respondent and Researcher Bias

Guba and Lincoln (1985) propose that actions which seek to address respondent and researcher bias enhance the validity of qualitative research. The responses of participants can be biased by the mere presence of the researcher (respondent bias). Robson (2011) describes how this can take many forms such as the participants withholding information or altering responses so that they are viewed positively or attempt to provide the response they believe the researcher to be seeking. Similarly, the researcher may have their own preconceived ideas that influence the research process, for example: via participant selection, questions used in interview, or through the interpretation

of data (researcher bias).

To reduce the likelihood of these biases impacting the interview process, a number of strategies were employed. The researcher reminded the interviewee prior to the interview that they would remain anonymous. To achieve anonymity, participant names, school names and any additional information that could be used to identify the interviewee was removed from the data. Secondly, the interviews were conducted in a private setting, familiar to the participant so that they felt comfortable and relaxed. Finally, participants were informed that they would have the opportunity to have the results of the research fed back to them prior to dissemination. It was hoped that these measures would contribute to the reduction of bias and encourage participants to answer freely and honestly.

### 3.9 Ethics

'Research ethics refers to "the moral principles guiding research from its inception through to completion and publication of results" (British Psychological Society (BPS), 2014, p. 5).

In order to conduct ethically sound research, the present study was compliant with the 'Code of Human Research Ethics' (BPS, 2014) and the 'Guidance on Conduct and Ethics for Students' (Health and Care Professions Council, 2016). Both documents were invaluable in ensuring careful consideration was taken when working with human participants within a real world context.

The BPS propose four principles to guide moral and ethical research (2014). These were used by the researcher to plan and conduct all aspects of the present study. As stated in the BPS Code of Ethics and Conduct "no code can replace the need for psychologists to use their professional and ethical judgment" (2009, p. 4). The following were therefore central to decision making:

- Respect for the autonomy, privacy and dignity of individuals and communities,
- scientific integrity – well-designed research should make positive and valuable contributions to communities,

- social responsibility – consideration of the welfare of the people and communities in which research is undertaken, being respectful in reducing unnecessary disruption to social structures and
- maximising benefit and minimising harm - consider all stakeholders who may be potentially affected by the research.

### 3.9.1 Gaining Ethical Approval

Ethical approval for the present study was first sought from the County Council and the local Educational Psychology Service. The researcher met with the Principal Educational Psychologist (PEP) to discuss the research proposal, clearly outlining the aims and methodology. The study complemented the ethos of the LA and psychology service which both work towards promoting the well-being and educational attainment of CYP. Therefore, the proposal was well-received and approved by the PEP. Prior to any data collection taking place, a research proposal was submitted to the School of Psychology Research Ethics Committee at the University of East London. The proposal was approved by the committee on 15<sup>th</sup> February 2017. The letter of approval is located in Appendix 1.

### 3.9.2 Consent

All participants were required to consent prior to participating in this research. Gregory (2003) details how participants can only truly provide informed consent if they are made aware of:

- The aims and purpose of the research,
- what the research will entail,
- what they are expected to do as participants,
- the time and effort required of them,
- how data is collected,
- whether or not they will be given the opportunity to comment on data and findings, and
- the final use of the research.

Any potential participants that had responded to the researcher's email or phone call were provided with a research information sheet (see Appendix 2) via email. This covered all aspects of the criteria of informed consent described by Gregory (2003). Following this, an interview day and time would be arranged at the discretion of participants who had informally agreed to partake in the research.

Prior to the interview, participants were provided with a hard copy of the research consent form (see Appendix 3) to read through. Before providing written consent, participants were given the opportunity to ask questions and were reminded of their right to withdraw from the research at any time. Only when written consent had been provided would the interviews begin.

In accordance with the BPS Code of Human Research Ethics (2014) participants were informed of their right to withdraw at any time without subsequent consequences. Participants were made aware that withdrawal from the study meant that any data collected would not be included in the research up until the point of data analysis.

Following the conclusion of each interview, participants were again given the opportunity to ask questions and were debriefed by the researcher (see Appendix 5). Additionally, school staff participating in the research will be invited to a presentation on completion of the research to disseminate the findings.

### 3.9.3 Risk of Harm

A risk assessment was conducted in line with the BPS (2014) principle of maximising benefit and doing no harm to those involved in the present study. Risk of harm is judged according to participants' exposure to risk in their day to day activities. The risk of harm posed by participating in research should be no greater than they encounter in everyday life (BPS, 2014). The assessment indicated that overall risk of harm to participants was low. The participants in the present study were not judged to be a vulnerable group and the nature of the topic under investigation was deemed not likely to evoke strong emotional responses or result in participant distress.

#### 3.9.4 Confidentiality and Anonymity

The BPS Code of Human Research Ethics (2014) states that “subject to the requirements of legislation, including the Data Protection Act, information obtained from and about a participant during an investigation is confidential unless otherwise agreed in advance” (p. 22).

Efforts were made throughout the research process to ensure the confidentiality and anonymity of the participants. This was achieved by keeping personal information including the participants’ names, school names and contact details on a password protected laptop only. Transcripts were anonymised with all details relating to the identity of the participant or school removed. This included the names of additional school staff, educational psychologists, local areas and group interventions. Consequently, the participants in the present study are not identifiable from the data, findings or the thesis itself.

#### 3.9.5 Data Storage

Interviews were recorded using Audacity™ on an encrypted and password protected LA laptop. The recordings were only used for the purpose of transcription and will not be shared with third parties. All recordings will be destroyed upon completion of the research.

### 3.10 Chapter Summary

This chapter has highlighted the researcher’s critical realist orientation and detailed the qualitative research design of this study. The participant sampling strategy, data collection and analysis methods have been explored and issues of validity and ethics explained. The following chapter presents the findings of this research within the context within which it was undertaken. It also explores the proposed theory grounded from the data for implementing growth mindset within secondary educational settings.

## 4. Findings

### 4.1 Chapter Overview

This chapter will present the findings from the data, following the methods of analysis detailed in Chapter 4. The process the researcher engaged in will be described, leading to a greater understanding of how concepts and categories were constructed and refined. Starting with a summary of the two core categories that emerged from the data, lower order categories will then be explored, using excerpts from interview transcripts to demonstrate how each has been grounded from the data.

The second section of the chapter will present the proposed grounded theory, in a visual and descriptive form. The theory encompasses the key mechanisms identified from the data analysis. This provides an insight into the processes that influenced the successful implementation of growth mindset practices in secondary schools.

### 4.2 Data Analysis

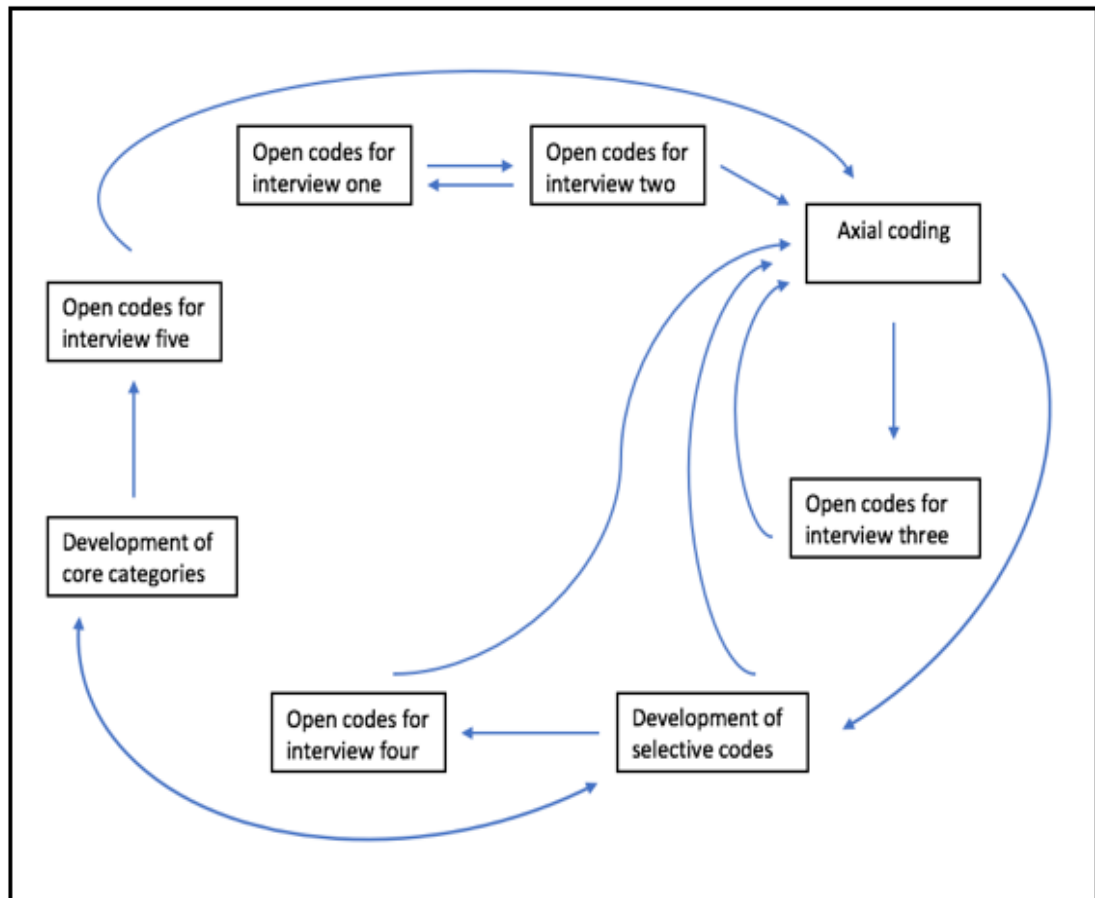
#### 4.2.1 The Process Employed

The researcher engaged in the analytical process endorsed by Strauss and Corbin (1998). This entailed the microscopic examination of data, known as line-by-line coding (Strauss & Corbin, 1998). In doing so, a plethora of codes emerged from each interview transcript. Subsequent axial and selective coding led to further abstraction and eventually the development of two core conceptual categories. The non-linear nature of this act, meant that at every stage of analysis, codes were subject to constant comparison and further refinement.

An exhaustive review of conceptual and theoretical category construction is not viable, due to the iterative methods utilised throughout data analysis. Findings were reached, and theory was developed, by repeatedly working up and down the coding hierarchy, adjusting and refining codes accordingly. Figure 4.1 endeavours to provide an insight into this process, highlighting the researcher's



efforts to go back and forth from open, axial and selective codes to the refinement and development of core categories.



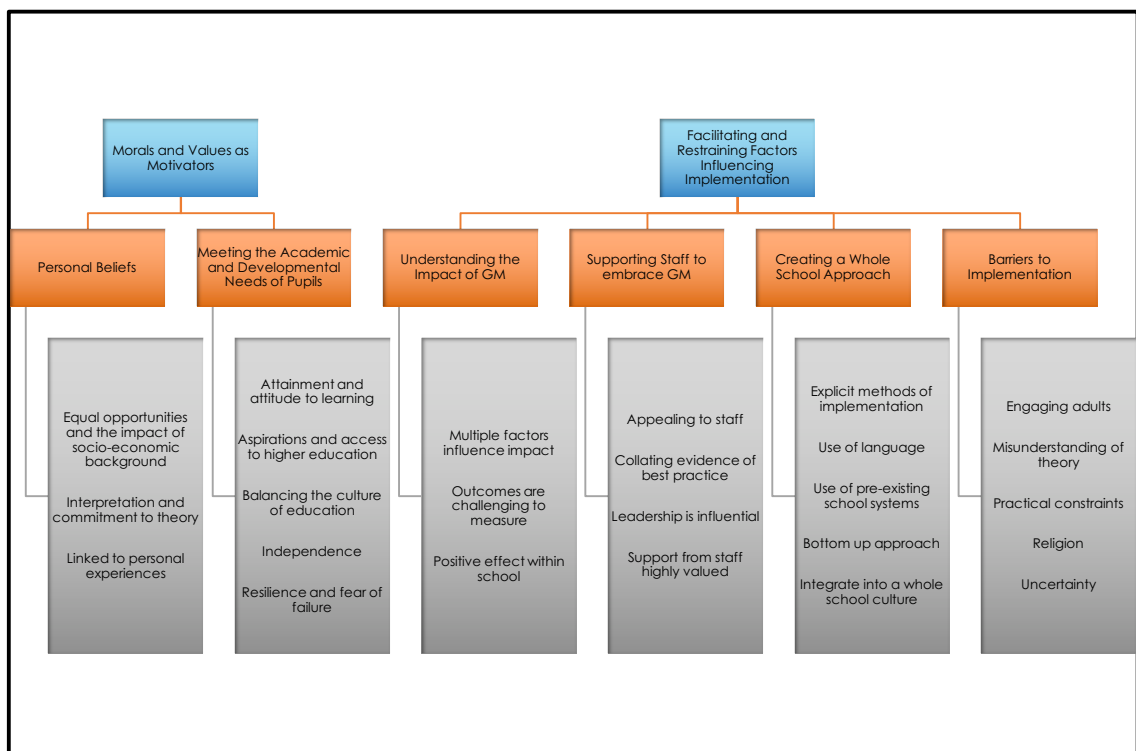
*Figure 4. 1. A visual representation of the process of data analysis.*

The arrows used in this representation reflect the direction in which the researcher moved between different coding levels. It was necessary to revisit codes multiple times to ensure codes were an accurate reflection of participants' views. Movement between different levels of the coding hierarchy was undertaken numerous times, as represented by the loop between the phases of axial and selective coding.

A full representation of all codes can be found in Appendix 8. Also, a small number of codes were considered to be 'outliers' and did emerge as part the final themes. These can also be reviewed in Appendix 10.

#### 4.2.2 Example of Coding Process

The codes and categories constructed during the analysis process (detailed in Figure 4.1) provided a wide range of views about the experiences of school staff involved in the implementation of growth mindset, as well as their perceptions of what practices are most influential in cultivating change. Consistent with a critical realist approach, they also represent the mechanisms which participants identified to encourage the adoption of a growth mindset. The full and final coding structure is presented in Figure 4.2.



*Figure 4. 2. A visual representation of the final coding structure.*

The diagram in Figure 4.2 represents the final coding structure in the form of a thematic map. The two codes at the top of the hierarchy represent the two core conceptual categories (blue); the highest level of abstraction. The next level of the coding structure depicts the selective coding system (orange) and the lower order level represents the axial codes (grey). Table 4.1 illustrates how data from interview transcripts were interpreted and assigned with open codes. Following this, Table 4.2 then details how each subsequent level of coding were linked together, contributing to a core category.

Excerpt from Interview Transcript	Open Code
I think there was some confusion at first with staff that it was just about positive mindsets but we we made it very very clear that we were focusing on growth mindsets. Also there was some scepticism I think from some staff that the message was that everyone could get an A or an A* which is, we quickly cleared that up, and said that is not what we're saying, that actually we're just saying that everyone can improve and that everyone can develop.	Staff confused about GM theory
I think the worst possible thing is to kind of do a whole school presentation and say, right everyone in the school has got to be doing growth mindsets so what we tried to do is start with a small group of people who are very keen who would trial it and who then be able develop practical examples of how it made a difference and then share it with the wider staff first. So I'm very conscious that top down CPD is not always the best thing to do, or to tell staff that this has got to be their focus. We give, we give staff the option of choosing a teaching and learning, well they have to choose a teaching and learning based performance management target but mindsets didn't have to be one of them.	Staff given autonomy Staff formed GM based groups Shared practice with colleagues Staff given autonomy Linked to performance management targets Staff given autonomy
I think that's why lots of teachers have bought into it because it's not about the teachers working harder, it's about shifting the responsibility for learning onto the students and a lot of it is what I'd call kind of quick wins, it doesn't require ornate lesson plans, it's actually being very careful about the language you use, the type of questions you ask and also what you praise and what you reward with in the classroom so it ties in quite well with our whole school values because they're respect, determination and teamwork so it tied in perfectly with determination, with the idea of determination.	Not about teachers working harder Pupils become more independent Not resource heavy Staff consider the language they use Links to whole school values

Table 4. 1. Extracts from interview transcripts illustrating microanalysis and initial open codes.

Open Code	Axial Code	Selective Coding	Core Category
Staff confused over growth mindset theory	Misunderstanding of theory	Barriers to implementation	Implementation
Staff given autonomy	Bottom up approach used	Creating a whole school approach	
Staff formed GM based groups			
Linked to performance management targets	Use of pre-existing school systems		
Staff consider the language they use	Embed through language		
Links to whole school values	Embedded as part of whole school culture		
Not about teachers working harder	Appealing to staff Appealing	Supporting staff to embrace GM	
Not resource heavy			
Shared practice with colleagues	Collating evidence of best practice		
Students become more independent	Promoting the personal development of pupils	Meeting the needs of pupils	Morals and values

*Table 4. 2 Extracts from the coding system depicting how each level of coding is linked.*

### 4.3 Category and Theme Construction

Two main themes, or core categories, emerged from the data; morals and values as motivators and facilitating and restraining factors influencing implementation. The first, relates to one of the biggest driving forces in motivating participants to delve into growth mindset; their underlying morals and values. The second theme represents the practices schools adopted to implement growth mindset, specifically referencing the associated facilitating and restraining factors. These two core categories have a reciprocal relationship, as they are interconnected and influence each other. The two core

conceptual categories and their associated subthemes (selective and axial codes) will be outlined below and described in turn.

#### 4.3.1 Conceptual Category One: Morals and Values as Motivators

This core category captures the motivating factors that drove participants to embark on trying to change the habitual thinking habits within their schools. Participants' own morals and values underpinned their decision making and justification for promoting Dweck's body of work. Of note, was how frequently participants' morals and values were referenced across all interview transcripts. Within this core category, two main themes emerged:

- Meeting the academic and
- developmental need of pupils and personal beliefs.

##### 4.3.1.2 Meeting the Academic and Developmental Needs of Pupils

Participants were driven by their own personal morals and values to do what they believed was best for the CYP in their schools. It was clear from participant accounts and throughout data analysis, that they were highly motivated to support pupils in a way that would lead to the best possible outcomes for them. This main theme encapsulates the needs identified in pupils, but also participants' aims, hopes and desires for deciding to pursue growth mindset. The outcomes they aspired to were varied, but essentially, fell into five main themes; **attainment and attitude to learning, aspirations and access to higher education, balancing the culture of education, independence and resilience and fear of failure.**

A strong theme throughout participant accounts was the focus on **attainment and attitude to learning**. Participants often associated growth mindset with improving grades and exam success:

*"We went through an OFSTED in 2013 where we were graded as 'requires improvement' and that was based on historical results because in previous*

*years they just hadn't been good enough and I do think a large part of it, not all, but a large part is the whole mindset" (Interview 2)*

Some participants identified pupils who were underperforming and not reaching their academic potential. This motivated them to incorporate growth mindset into a mentoring programme which aimed to improve their attainment:

*"Yeah, so what we do we identify at each kind of point where we get data in from teachers, once every, probably once every term, we kind of look at who is not hitting their benchmark grades, falling below." (Interview 3)*

Participants recognised that pupils' attitude to learning was an important aspect of academic success. They noted that prior to growth mindset intervention, pupils lacked the attitude that would ultimately facilitate academic progress:

*"They kind of had the wrong view of education as education is about the end product and where actually we wanted to value the process and how you learn as much as what the outcome is at the end of it." (Interview 3)*

Another motivating factor for participants was to enhance pupils' own motivation for future success. They hoped by influencing the mindset of pupils, they would become more ambitious and put greater consideration for their future **aspirations and access to higher education**. Participants described how raising the aspirations of their pupils was essential in preparing them for their future:

*"We wanted to kind of push those aspirations and we wanted to start talking to them now about how they can prepare themselves for university." (Interview 2)*

Participants explained they hoped pupils would be able to achieve their goals and continue in education:

*“We want them to feel inspired, and they can go on and do great things, they can do whatever it is they want to be and go to whichever provider they want to go to and all of those things that come along with feeling inspired.” (Interview 2)*

Throughout participant accounts, a focus on exam success was clearly evident. However, participants often expressed negativity towards the current climate of schools, and the pressure CYP are under to get results. They voiced their hope that mindset intervention would begin to shift the focus towards **balancing the culture of education**. This theme captures the frustration and dissatisfaction experienced by participants regarding the current focus of the education system:

*“Students continue to get terribly stressed about exams and I don’t blame that and that hasn’t got better but that, that is nothing to do with anything, that is the culture we’ve got in this country now and it’s really hard to see how that’s going to change.” (Interview 4)*

Participants wanted to move away from such a pressurised, exam based culture and take a more holistic view of the child. They hoped mindset intervention would alleviate some of the pressure and expectation of pupils so that they can focus on character education too. This was considered an important aspect of meeting the needs of the pupils in their schools:

*“Some really key characteristics that are as important as getting a good result. And I think that’s what we all, I think that’s collectively as staff, most people feel that we are trying to develop a whole student, we are not an exam factory.” (Interview 5)*

Some schools even focused directly on supporting pupils to cope with balancing academic attainment with their personal development:

*“We’ve done something on, kind of, managing self-expectations and stress because actually those kids may well be having mini break downs, putting pressure on themselves.” (Interview 2)*

**Independence** was another key theme throughout all interviews. Pupils were described as being over reliant on teachers and lacked the ability to self-motivate and work independently. Participants viewed promoting independence as an important aspect of their personal development and necessary in order to meet their needs:

*“I see the jump when they go to A level, and they have a huge amount of independent learning and they can’t cope with it. They spent 5 years of whatever being spoon fed and then all of a sudden they have 6 weeks off. They go away, and we expect them to come back different and we expect them to know how to study on their own and they don’t know how to study.” (Interview 2)*

Participant one describes how mindset intervention can promote independence:

*“Because I say ‘why is it ok to make mistakes? Because we learn from our mistakes’. That’s been probably the most powerful in just getting children to become independent and have a go I think.” (Interview 1)*

A central tenet of mindset theory is linked to **resilience and fear of failure**. Fostering a growth mindset allows us to view failure as an opportunity to learn. The positive reframing of failure makes us more likely to bounce back from disappointment and persevere even when a task is challenging. Participants noted how these characteristics were absent in their pupils:

*“(Pupils) lacked independence, creative thinking, self-esteem a lot of them, just a willingness to take risks, it was like they were scared.” (Participant 1)*

Additionally, a fear of failure prevented participants from pushing themselves within a classroom environment:

*“I think we felt students were very results orientated and very afraid of failing and very afraid of looking foolish in class so that would make them reluctant to answer in case they got it wrong.” (Participant 5)*



#### 4.3.1.2 Personal Beliefs

The experiences described by participants often provided an insight into their own personal beliefs. These were underpinned by their morals and values and appeared throughout their accounts. Typically, participants shared their personal experiences or viewpoints that led them to delve into growth mindset. Within their personal beliefs, three main themes emerged: **equal opportunities and the impact of socio-economic background, interpretation and commitment to theory and linked to personal experiences.**

An ambition of participants that emerged throughout the data analysis was their desire to support pupils to reach their potential by restoring social equality. Instilling a growth mindset and the core messages of the theory, was viewed by participants as helping to equalise the playing field. This led to the creation of the theme '**equal opportunities and the impact of socio-economic background**'. Participants described how the socio-economic background of a pupil creates social disadvantage and impedes their thinking:

*"I think in a school in an area such as this, they're quite challenged in, in their ideas and self-esteem and often, you know, quite compromised and I, well we've found the benefits of it in year two definitely." (Interview 1)*

Interestingly, participants who were employed in more affluent areas also found pupils' background to have a negative impact on both mindset and behaviour:

*"We are in an area that is a really nice area, we've got good employment, we've got quite a good quality of life here and as a result lots of people stay in the area and don't venture out and kids will say well it doesn't really matter because my dad has his own business and I'm going to have a job there." (Interview 2)*

Participants were motivated to promote equal opportunities as they described how pupils succumbed to the low expectations associated with their socio-economic status:

*“It almost is a kind of a societal thing that you come from that background so you can’t do XYZ.” (Interview 2)*

Participant four shares similar views and describes the emotional impact it had:

*“Instead of trying to educate them out of their background so to speak, they were just kind of going, ‘they’re not going to make anything because their problem is kind of background.’ I think that’s just heart breaking. I really do.” (Interview 4)*

All participants expressed a commitment to growth mindset. However, their **Interpretation and commitment to theory** varied. Whilst some participants fully embraced the concept of ability and success being a result of learning experiences, others espoused a more balanced view between nurture and nature. Participants also demonstrated a level of conflict in their own beliefs. For example, participant one stated:

*“You just have to believe in it and believe in what it’s trying to do really.” (Interview1)*

Then went on to insinuate that ability is fixed:

*“When it comes to drawing that’s really challenging for some children who are either naturally artistic or not.” (Interview 1)*

Furthermore, they recognised that staff commitment to mindset theory is also varied, as if along a continuum:

*“If you are saying that it is a largely or 100%, however far you believe, that a child’s intelligence and success in life etc. is built through their experiences.”*  
(Interview 4)

Regardless of how long participants had been aware of growth mindset, it was apparent they personally related to the theory on some level. Descriptions of how mindset **linked to personal experiences** were often provided, sometimes even relating to their own experiences of education:

*“I tried really hard at Art, just as an example, and I use this with kids all the time, and It did not matter how hard I tried, I was just not very good at it but I was really good at science so that’s where my growth was.”* (Interview 2)

Participants also shared encounters from teaching, giving examples of when they have seen fixed or growth mindsets in action. These experiences appeared to strengthen their commitment and motivation to pursue growth mindset.

*“I taught a girl at the time when I was doing this research who was on the gifted and talented list for 10 subjects. She can’t be gifted and talented in 10 subjects! English was her third language and she was brilliant at English but she told me because she found it so hard she would just learn everything by rote, she had the most ferocious work ethic I’ve ever seen in anyone and that’s why she got top marks but she wasn’t good at English, she just worked extremely hard and then she good top marks which is different to being good at English.”* (Interview 4)

#### 4.3.2 Conceptual Category Two: Facilitating and Restraining Factors Influencing Implementation

This core category encompasses all aspects of growth mindset practice and implementation reported. Participants described an extensive range of approaches, tools and techniques, and spoke in depth about factors which

enhanced and constrained their efforts to apply mindset theory. Within this core category, four main themes emerged:

- Barriers to implementation,
- creating a whole school approach,
- supporting staff to embrace growth mindset and
- understanding the impact of growth mindset practice.

#### 4.3.2.1 Barriers to Implementation

Participants described multiple barriers which had prevented them from fully embracing growth mindset and applying mindset practices across a whole school context. Five main themes emerged, representing the barriers which posed the greatest challenge for participants; **engaging adults, misunderstanding of theory, practical constraints, religion and uncertainty.**

**Engaging adults** and school staff in growth mindset theory proved challenging for the participants:

*“You’ve got the people that have been here for a long time, well we’ve always done it like this and its always been fine and why do we need to change and I don’t believe in it and all of this and I think those are the disadvantages.”*

*(Interview 2)*

The enormity of engaging staff with new theory and asking them to change their approach to teaching was also expressed by participant four:

*“It really is quite seismic for some people when they have, when they have it fixed in their head that people are born with a fixed intelligence it’s really really really hard for them to change.” (Interview 4)*

Participants reported that it was hard to persuade staff to try something new and change the approach they have always adopted. Additionally, getting all staff trained and then relying on them to embed it into their everyday teaching

proved challenging. Participants also reported that staff frequently **misunderstood the theory** and perceived it to be an unrealistic and unobtainable idea. This appeared to be a dominant theme amongst participant experiences and was perceived as a barrier to implementing growth mindset in school:

*“I think from some staff that the message was that everyone could get and A or an A\* which is, we quickly cleared that up and said that is not what we’re saying, that actually we’re just saying that everyone can improve and that everyone can develop.” (Interview 3)*

Participants explained how staff often misinterpreted growth mindset, believing the theory claimed that everyone is capable of achieving top grades if they just work harder. It was interesting that the exact same misunderstanding was evident across multiple schools:

*“I think there’s a huge misconception and its amongst some of the staff that are the ones that put barriers in place where you talk to them about growth mindset or resilience and they say ‘yeh but you can’t tell me that, you know, Joe Smith, his target grades a D, you can’t tell me that he’s going to get an A\*’ well that’s not what its about, and you’re missing the point.” (Interview 2)*

Participants often reported that their ability to change practice was limited by **practical constraints** such as availability and capacity of staff, the number of pupils and time. For example:

*“I can only do what I can do, and I’m one person and I’ve got an amount of time and an amount of staff I can direct, so it is what it is.” (Interview 2)*

Additionally, participants struggled to find opportunities to embed growth mindset within an already demanding national curriculum:

*“I suppose the barriers really just time and fitting it in to the curriculum on a regular basis.” (Interview 1)*

Interestingly, the religious beliefs of both staff and pupils could also prevent them from engaging with growth mindset. The premise of talent and success being a result of one's learning experiences and nurtured by the environment conflicted with the belief in 'God given talent':

*"I don't whether if this is because it's a Catholic school, I did find some people, and I found this with some students as well, who believe in God given ability and that's another issue as well." (Interview 4)*

The participant went on to explain:

*"They are very emotive about it. That's a big challenge for them." (Interview 4)*

A common theme related to the **uncertainty** participants felt in applying growth mindset, with little guidance and information regarding how to implement it, they appeared unsure of how to proceed with applying it in school. Participants did not always explicitly refer to the uncertainty they felt, but it was dominant theme within their narratives. Often, the uncertainty related to their own knowledge and ability to impact the CYP in their schools:

*"I just definitely think I just need to be more knowledgeable about it really, and confident to deliver it effectively." (Interview 1)*

This participant explained that they were unsure of where to take growth mindset in the future. They referred to their limited knowledge, highlighting the uncertainty they felt in their ability to foster growth mindsets within their setting:

*"Kind of long, long term, and I haven't got any kind of plan. Long long term I would like us to have more training on growth mindset, resilience, metacognition, and I think my feeling is it needs to come from someone who knows an awful lot more about it than I do because I think I have touched the surface and that's it." (Interview 2)*

#### 4.3.2.2 Creating a Whole School Approach

A whole school approach to implementation was viewed as the most desirable and effective method of instilling a growth mindset amongst both staff and pupils (see section 5.3.1 for more detailed description and justification). The analysis revealed that numerous methods were utilised concurrently to create a culture whereby the key tenets of mindset theory were fostered. Five main themes emerged that describe varying methods of implementation; **equipping pupils with skills, use of language, use of pre-existing school systems, bottom up approach and integrated into a whole school culture.**

A great deal of the experiences reported by participants related to whole school approaches and creating a culture which supported growth mindset theory. However, participants also valued direct teaching aimed at equipping pupils with skills. This theme encompassed codes related to the teaching of key transferrable skills such as metacognition, improving memory and explicitly teaching pupils about the brain and the neuroscience behind mindset theory. Numerous tools and techniques were employed which are also incorporated within this theme. Participants recognised that hard work alone is not sufficient to reach one's potential, and a greater awareness of metacognition was important:

*"I wanted them to see why other people were doing better than they, and really just to kind of say you have to work harder but you have to do the right things as well, you can't just keep doing the same thing again and again." (Interview 4)*

This sentiment was evident amongst other participants too, who also valued teaching additional skills to enhance mindset change:

*"We came to the realisation that it was actually part of a learning package really because we were also having a push on getting pupils to respond to feedback, to develop memory skills etc. and the growth mindsets in a sense was essential to all of those things." (Interview 3)*

Equipping pupils with the skills to work harder and persist appeared to be an important part of mindset application:

*“Again we are focusing on the range of learning strategies that will help them study and helping them to see that there’s not just one way to learn something there’s lots of different ways. They can choose the way that works for them.”*  
(Interview 5)

All participants made reference to using language to embed growth mindset. This was achieved in a number of ways such as positively reframing mistakes, use of praise, feedback and using language to set high expectations of pupils. Essentially, the messages staff convey to their pupils through the language they use, was deemed to be essential in influencing pupil mindset and beliefs. The importance and **use of language** to embed mindset theory is summarised well by participant three:

*“A lot of it was actually being really careful with the language we used with students and with pupils, that was one, one, thing that all of us worked on.”*  
(Interview 3)

Participants also reported that they hoped that by adapting their language, the language of pupils would too be impacted and reflect a shift in thinking:

*“People have gone in and said, perhaps not even said anything, except started using different language and maybe helping students to use different language about themselves.”* (Interview 5)

All participants appeared to capitalise on **pre-existing school systems** already embedded within their school structure, to enhance mindset practice. This took numerous forms ranging from use of staff training days, parent’s evenings, induction days, enrichment activities to mentoring programmes:

*“We do PSHE differently to lots of schools, we don’t timetable it. We have de-timetable days three times a year when the school is off timetable and we do enrichment things and we have a new person responsible for that, they are*



*moving over to themed days. For example, in July we are having one about healthy mind, health body so growth mindset will be incorporated in to those types of things.” (Interview 5)*

Some participants even incorporated growth mindset into staff teaching and learning targets. These were often used to monitor staff performance:

*“I think the trick is to embed it within maybe the more specific teaching and learning focuses that we’ve got in school rather than just seeing it as a stand alone thing.” (Interview 3)*

A strategy used to embed growth mindset theory was to adopt a **bottom up approach** to implementation. Typically, participants explained how the decision was made by one or two members of staff who had a genuine interest and passion for the topic, who willingly volunteered to start the process of applying theory to their practice. Small working parties or research groups were formed so that staff could learn more about the theory, trial it over time and gather evidence of practice prior to rolling it out to the whole school. A key aspect of this method was that staff were given autonomy and choice over how they decided to proceed, it was not imposed by leadership:

*“So what we tried to do is start with a small group of people who are very keen who would trial it out.” (Interview 3)*

Participant three went on to explain the benefit of giving staff autonomy over their practice:

*“I think out of all the action research groups it was the one where people genuinely got interested in it because they wanted to be involved.” (Interview 3)*

This was also reiterated by participant five:

*“But I also think the way we have rolled it out (has been effective), so faculties look at what works for them is quite good because then we are not imposing something on them.” (Interview 5)*

The ambition of participants was to influence the mindset of pupils to achieve positive outcomes. Participants aimed to achieve this through creating a school ethos that endorsed growth mindsets. Consequently, different practices were used and **integrated into a whole school culture**. Participants described their implicit approach to mindset practice:

*“I don’t want them to think this has got to be growth mindset, it’s a just the way we want them to be, so I think they would be able to articulate, you know, the kind of pupil speak that they’re now used to. I would hope that they wouldn’t necessarily say ‘oh, we had an assembly about that and it’s about such and such’. I think it’s more embedded now with them, it’s just what they do really.”*  
(Interview 4)

Participants also tried to instill a culture of high expectations through growth mindset. They wanted staff to stretch pupils and believe they are capable of achieving more. This participant described their hopes related to creating a culture within their school:

*“I would like it to be more embedded in the expectations of staff.”* (Interview 2)

Growth mindset becomes a part of everyday teaching and learning practice, as opposed to a stand alone tool:

*“Yeah, I mean I think that what we try to get across to our presentation to staff, it’s part of every lesson, it’s part of how you speak, part of how you interact with students, umm, yeah, it’s not just kind of putting a few posters up and doing a few inspirational assemblies.”* (Interview 3)

Another aspect of practice evident from participant accounts is how growth mindset has been linked with school improvement plans and integrated into whole school values. This creates a vision for the school as a whole and the culture and ethos they are trying to instill.

*“Our new head launched, said that we were going to launch character education and started the whole process of getting us to work together to look at growth mindset to look at character education, so erm, in terms of how it is being implemented, the umbrella term is character education but it’s now part of the school improvement plan.” (Interview 5)*

#### 4.3.2.3 Supporting Staff to Embrace Growth Mindset

The analysis revealed that school staff are integral in implementing theory or changing practice. Participants consistently described how having additional staff support their initiatives proved to be a facilitating factor to implementing growth mindset. Consequently, four main themes emerged which relate to supporting staff to embrace growth mindset; **appealing to staff, leadership is influential, collating evidence of best practice** and **support from staff is highly valued**.

The theory of growth mindset was described as being **appealing to staff** as it was not considered to be a prescribed approach, imposed on teachers:

*“I don’t want it to be, and I don’t think people want it to be and I don’t think this is how people teach, a kind of ‘if you do this in a lesson then it’s growth mindset’, like an activity or an add on thing or a clip on thing, it’s not like that.” (Interview 4)*

Furthermore, it was not viewed as a resource heavy initiative, or seen to increase the workload of teachers, requiring ornate lessons plans. Participants describe how these factors promote engagement from staff:

*“I think that’s why lots of teachers have bought into it because it’s not about the teachers working harder.” (Interview 3)*

Another element of implementation that was seen to enhance widespread practice was the effectiveness of **staff collating evidence of best practice**. Participants described how simply introducing the theory to their colleagues was

inadequate in persuading them to adapt their own teaching and learning practice. They found over time, that teachers wanted examples of practice in context and case studies of what teachers had tried and successfully implemented before they were willing to engage with mindset practices themselves:

*“(It) works better if you’ve already trialled it, and if you’ve already researched it and if you’re already able to come up with some things that work and don’t work so well, it just puts you in a better position when you do then launch it to all staff.” (interview 5)*

The affirmation of growth mindset from colleagues was sometimes enough to influence other staff:

*“You talk about the evidence behind it and you show them examples in practice in this context where its been successful, you can win them over.” (Interview 2)*

This participant even described how hearing positive reports from a previous colleague was a key factor in her deciding to implement it in her current school:

*“I’d heard how successful it was from colleagues and just thought that it, perhaps anything that tries to develop independence and you know, positive learning disposition has got to be, you know, worth delving in deeper really.” (Interview 1)*

All participants in the present study occupied a leadership role in some form. Despite this, they prescribed to a bottom up approach to embed mindset practices (see section 5.2.2.2). That is, the initiative is led from individual or small groups of teaching staff initially, prior to rolling it out across a whole school. However, participants also acknowledged that school **leadership is influential** too. They described that having leadership endorse what is trying to be achieved, helps drive the initiative forward:

*“As I said there were a few of us teaching staff here that were already engaged with it and the new head was appointed last September and he was very keen that this was something we moved forward with.” (Interview 5)*

Participants also explained how the stance taken by school leadership regarding the initiative, can have a widespread impact:

*“If you have a head of department who doesn’t quite buy in to it that whole department essentially is difficult to deal with so from that point of view, I can see that being a particular barrier.” (Interview 2)*

Staff in leadership roles were also utilised to support teachers who found the theory challenging or difficult to apply:

*“One of the things we’ve got is lead practitioners in school, so we quite often get them to work with other staff to coach them” (Interview 2)*

The **support from staff was highly valued** by the participants and seen to be a dominant facilitating factor in implementing growth mindset. At times, the support described by participants alluded to the moral and emotional aspects of peer support:

*“Well I think we remind each other sometimes when we say ‘I just can’t do this’ and we say ‘you just can’t do it yet’ in a very flippant way.” (Interview 1)*

Participants also described the practical benefits of being supported by their colleagues:

*“We have an action research group that reads relevant articles, does research, visits other schools and then umm gets together as a group, agrees to trial ideas, shares how they’re going, shares the successes, shares any problems and issues.” (Interview 3)*

This also includes the division of work:

*“A group of us as staff, there was 3 of us, who did assembly’s rotating round along the theme of growth mindsets.” (Interview 3)*

#### 4.3.2.4 Understanding the Impact of Growth Mindset Practices

The second research question of the present study referred directly to the impact that growth mindset practices had within educational settings. This research was not an evaluative study, but sought to understand from the perspective of participants what they recognised to be the most useful aspects of their implementation. In doing so, mechanisms for change could be highlighted and used to inform future practice. Three main themes emerged; **multiple factors influence impact, outcomes are challenging to measure and positive effects in school.**

Participants reported how **multiple factors influenced impact**, however, this was typically dependent on how practice was implemented. Participants described different methods and approaches which appeared to work for them, but each technique was only a small aspect of a wider picture. It would not be feasible to cover all aspects of how mindset was implemented so the most dominant themes will be presented.

The strongest theme to emerged from participants was the careful use of language. Language was a key device that staff employed to convey the core messages of growth mindset to pupils. Participant one describes key phrases that were of most use:

*“I think the most valuable phrase for us is ‘I can’t do it yet’ that’s what we are using a lot of ‘I can’t do that, I can’t do that’.” (Interview 1)*

Language proved to be a strong determinate of mindset for participant five too, in the way it could be used to challenge pre-conceived or fixed ideas:

*“I think the most impact comes from student teacher interactions. Especially if it’s a more private interaction, a teacher may be challenging a student’s very negative view of themselves and their ability.” (Interview 5)*

Participants reported the method of developing mindset practice as being integral to its overall success. Allowing practice to progress from a bottom up approach and giving staff autonomy over how they embed mindset practice was viewed to positively influence the likelihood of successful implementation:

*“The ideas and the activities and things have arisen from like a said, a bottom up approach, so from an action research model rather than being imposed on the school. So people have been involved because they have wanted to be involved, and then they’ve got excited about it and then they’ve shared those ideas so it’s been genuinely a collaborative action research group rather than any kind of imposition from the senior management team.” (Interview 3)*

This was echoed by participant five:

*“I also think the way we have rolled it out, so faculties look at what works for them is quite good because then we are not imposing something on them.” (Interview 5)*

Staff training was also noted by all participants and seemed to be important in the wider delivery of mindset theory:

*“I think that mine and xxxx inset so I think that xxxx had the most impact on people’s teaching, definitely.” (Interview 5)*

Participant two described how staff training was part of the long-term plan:

*“I would just like us to, down the line, I would like us to revisit and have some more training.” (Interview 2)*

School assemblies appeared to be common practice for disseminating mindset theory to pupils and were reported to promote pupil engagement:

*“I also think that the students have bought in to it through the assembly’s and the motivational stories.” (Interview 3)*

However, participant three explain the associated limitations:

*“At the start there was maybe a couple of people who thought putting a few motivational posters up and listening in assemblies would be enough but I don’t think it is.” (Interview 3)*

Individual tools or strategies may have contributed to improving outcomes, but any one device in isolation may not have had the same impact. Therefore, it was multiple factors working simultaneously that appeared to promote the best outcomes, thus having the biggest impact.

A key theme in participants’ accounts were how **outcomes are challenging to measure**. A few participants had attempted to measure the impact of their practice through the use of staff surveys and pupil questionnaires but in most cases, no formal measures had been taken. Therefore, participants expressed uncertainty regarding the effectiveness of their mindset practice:

*“You know, when you said about measuring the impact, it’s like ooh actually what is, you know, how do we measure that?” (Interview 1)*

Participants often referred to academic attainment and grades as a measure of impact or success. However, participants were not able to report an increase in grades, especially as a direct result of mindset practice. Instead, participants explained how their practice was relatively new and still developing, and that they were eagerly anticipating upcoming results as a measure of impact:

*“I will be really interested to see what the GCSE results are and that’s actually, kind of, that’s what I’m waiting for, to see, to look for those kids and see what they did because some of them were quite borderline.” (Interview 2)*

Consequently, participants tended to rely on qualitative, observational changes to assess the effectiveness of their work:



*“I think from a qualitative point of view it has had an impact but quantitative is very very hard to say it’s had a significant impact.” (Interview 3)*

Participants also described how it is very challenging to attribute changes purely to mindset intervention without controlling for other variables such as general teaching quality and learning styles:

*“I mean in terms of quantitative data, it’s very very hard with growth mindsets because it’s been also part of an approach, a whole teaching and learning approach which is also been looking at memory skills, revision, and umm pupils taking more responsibilities for their homework as well so it would be, it would be difficult for me to say that the growth mindsets had a tangible impact in terms of moving pupils from position X to position Y” (Interview 3)*

Despite difficulties measuring the impact practice has had in schools, participants were able to describe anecdotal and observational changes of both pupils and staff within their settings. Overall, growth mindset practices were highly regarded and considered to have had a **positive effect in school**. Participants reported a positive impact on pupils, staff and school culture. Firstly, the theory and initiatives were largely well received by both staff and pupils. Over time, staff have embraced the theory and noted its potential:

*“I can’t think of, me personally of any cons I can only think of advantages to it.” (Interview 2)*

Following a training session, participant four described how staff provided affirmative feedback and reviews of mindset theory:

*“Now that was 3 years ago and I’d say that most staff, and in fact I’m about to do an audit, most staff are really really on board with it, but it was, really, I remember it being really quite explosive at the time so you have, I got a deluge of emails the next day saying ‘you’ve made me completely re-think thing, amazing’ lots of really positive things, really fantastic.” (Interview 4)*

Another positive impact of instilling growth mindset is the influence it had on the school culture and standards:

*“When you’re sort of establishing all your behaviours and rules and things which err, you know, (growth mindset) has I think proved beneficial.” (Interview 2).*

All participants reported to have noted changes in the attitude, thinking and learning behaviours of their pupils, following mindset intervention. Often, their reports linked to their approach to learning and a greater awareness of what they need to do to be successful:

*“I think that’s something that’s different to previous years. We wouldn’t have seen very many children with books out before exams, and you know, lunchtimes before exams they would have just been having their lunch whereas this year the dining room is full of people with books out and people talking about their study and talking about their learning, so that’s been really positive.” (Interview 2)*

Participants also described a shift in mindset, instilling a belief that they are capable of progressing and being successful:

*“We have also used the growth mindsets within our mentoring programme as well and that’s been very successful helping to turn some students around in terms of how they viewed themselves and how they viewed their ability to progress in school.” (Interview 3)*

The change in mindset also suggests that pupils are understanding the core messages from mindset theory. Participant four describes the changes she had observed:

*“The learning pit idea that the learning takes place when things are difficult. If you could go ‘done it!’ straight away, then you haven’t learnt anything so the learning is difficult so I think I have definitely seen a shift towards that” (interview 5)*

The observational changes noted in pupils was not only evident from their attitude and behaviour, but also in the language that they used:

*“Six and seven year olds are fairly good at saying ‘I can’t do this’ and you know there is always somebody that will pipe up ‘no you can’t do it yet’.” (Interview 1)*

One participant described how this impact had spread unintentionally to parents and carers at home:

*“The children had been going home and sharing, you know, ‘I just can’t do it yet mummy’ and things like that and they said oh they were coming up saying ‘that’s why you keep saying things like that’ you know, it’s because they were taking the language and vocabulary and learning home.” (Interview 1)*

#### 4.4 Proposed Theory and Justification of Content

The theory proposed in this research offers a deeper understanding of the mechanisms involved in fostering a school culture underpinned by growth mindset theory. It encapsulates the key learning from the data analysis and proposes a method for mindset implementation for schools within the context in which this research was undertaken.

The theory acts as a research based framework for practitioners who wish to embark on whole school implementation. Furthermore, the present research highlighted the uncertainty participants experienced when trying to forge their own way in cultivating a growth mindset culture. These were typically solo endeavours, with little literature or research to guide them. The following excerpts from participants highlight their uncertainty of their practice and provide further rationale for the construction of such theory:

*“I just think we could have done it more, done it better and perhaps delved a bit more in to it and maybe even investigated or researched how other schools were perhaps using it more successfully. (Interview 1)*

*“I think even now as a school we haven’t cracked it yet.” (Interview 2)*

A full visual representation of the proposed theory can be found in Figure 4.3. The same theory is then presented in a simplified version, presenting the key tenets of the theory in Figure 4.4.

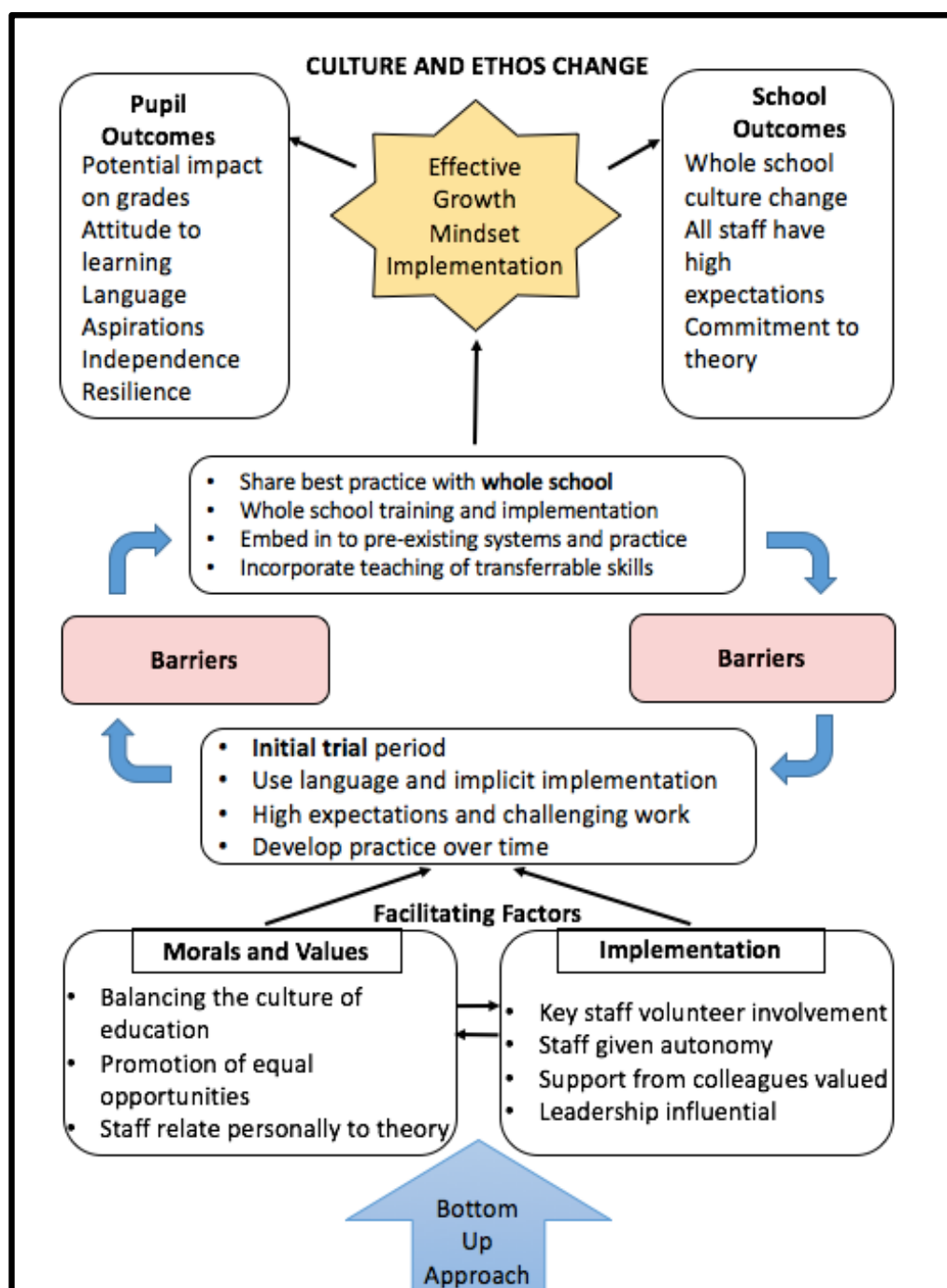


Figure 4. 3. A visual representation of a highly contextualised theory of whole school growth mindset application.

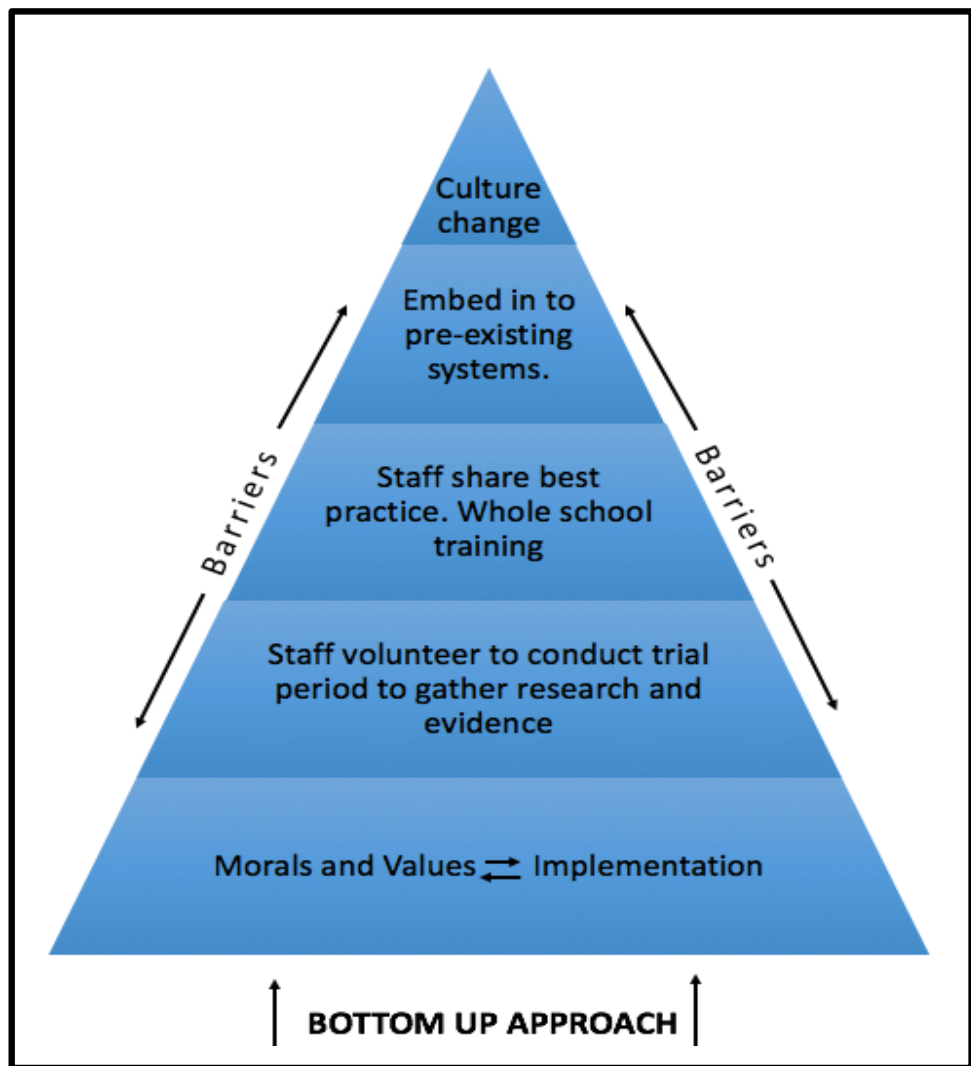


Figure 4. 4. A simplified visual representation of the proposed theory.

#### 4.4.1 A Whole School Approach

The majority of participants interpreted Dweck's theory and applied its concepts across their whole school. However, two participants adopted an alternative approach, choosing to target specific cohorts of pupils instead. Although both participants saw value in their approach, they both expressed the desire to expand their practice across a wider, whole school context, appreciating that a whole school approach was most effective for instilling growth mindset:

*“It is, but the thing is I think it does need to be embedded across the school and I think where it has been successful is where that has happened and it’s taken on board as a whole school initiative rather than just certain year groups.”*

*(Interview 1)*

Participants also expressed that a whole school approach was morally and ethically more just, allowing all pupils to benefit from mindset application, as opposed to a specific cohort:

*“I think if you could wave a magic wand you would do it for everybody.”*

*(Interview 2)*

Participant two reported that this view was shared by the teaching faculty:

*“Again it would have been nice to offer it to more children and I think that’s something staff recognise as well.” (Interview 3)*

This provides a clear rationale for proposing a whole school approach to embedding mindset practice.

#### 4.4.2 Facilitating Factors of Implementation

The two core categories that emerged from the data analysis; **‘Morals and Values’** and **‘Implementation’** are integral to the proposed theory and form the facilitating factors behind mindset intervention. Together, they interact within the theory, and combined, act as driving forces to initiate mindset practice within a school. The two core categories encompass the mechanisms identified throughout data analysis that make successful implementation more likely.

These are:

##### **Morals and Values**

- Balancing the culture of education,
- promotion of equal opportunities and
- staff relate personally to the theory.

## **Implementation**

- Key staff volunteer involvement,
- staff given autonomy,
- support from colleagues valued and
- leadership influential.

### **4.4.2.1 Morals and Values**

The actions and behaviours of humans are propelled by their internal belief systems and the morals and values they possess. Tapping in to these driving forces will stimulate interest and 'buy in' to a given theory. This part of the proposed theory suggests that relating growth mindset theory to one's morals and values will be a key determinate as to whether they are likely to embrace a new way of working. Through discussion or training, staff should be presented with information demonstrating how growth mindset aspires to balance the culture of the current education system, focusing on effort and not outcomes, celebrating mistakes and valuing the process of learning, as these all contribute to relieving pressure and anxiety experienced by pupils. Similarly, mindset theory has benefits for CYP from all backgrounds, giving all CYP equal opportunities to be successful.

The analysis showed that when staff relate personally to growth mindset, they are more likely to demonstrate a belief and commitment into its application. Encouraging staff to reflect on their own life experiences and think of examples where they may have evidence of adopting a fixed or growth mindset, will too contribute to the likelihood of them embracing the theory.

### **4.4.2.2 Implementation**

Key mechanisms to promote implementation pertained to the practical aspects of starting a mindset initiative. Initially, the theory proposes that staff are given the opportunity to volunteer or express interest in developing mindset practice for their school. Additionally, they have freedom and autonomy over how they decide to embed the key principles within their classes. A number of volunteers

within the school faculty are able to then individually experiment with their approaches but also rely on each other for support. The peer support provides a soundboard to bounce ideas and also share problems and difficulties they may experience. Although leadership may not be directly involved at this point, their backing and support is essential for staff members to progress.

The findings from this research suggests that the combination of underlying morals and values participants possess, combined with the key mechanisms identified to promote implementation act as facilitating factors which drive practice forward. Together, they provide rationale, aims, motivation and the support needed to continue exploring growth mindset theory.

#### 4.4.3 The Cycle of Implementation

In conjunction with the facilitating factors, the next phase proposed within this theory features the key mechanisms that promote the likelihood of successfully implementing mindset theory across a whole school context. Once a small number of key staff have made the decision to pursue the approach they should then embark upon an **initial trial period** of experimentation, whereby different approaches and methods can be tested. A key aspect of the trial period is to focus on the language used by staff to convey key principles underlying beliefs regarding intelligence and ability. At this phase, some aspects of implementation should be implicit and embedded into every day teaching approaches. An example of this would be to set challenging work and possess high expectations of pupils, carefully conveyed through the use of language. Throughout this trial period, staff members can develop their practice over time, learning from their experimentation of methods and techniques.

Following a trial period, staff are best placed to share their learning experiences with the whole staff community. Over time they would have collated evidence of what has worked for them, and what hasn't, which is context specific and can be shared to inform future practice. The evidence collated is a powerful tool in persuading other staff to engage with mindset theory and adopt **whole school**



**implementation.** This was reflected throughout the data analysis of the present study. Participants consistently reported that staff were more likely to adopt these practices if they have been shown to work by staff they know, in the school they work in. Whole staff training and implementation should then be undertaken. Over time, practice is embedded in to the schools pre-existing systems and becomes ingrained in every day practice within classrooms. Once mindset theory has been embedded implicitly through language and high expectation of pupils, more explicit methods of teaching can be incorporated in to practice. The nature of growth mindset implies that effort and hard work are essential for improving your skills and abilities. Whilst this is a critical aspect of a growth mindset, hard work alone is not always sufficient for success. Participants expressed that equipping pupils with the skills to work hard but also work efficiently is vital too. An implicit approach is essential in changing the mindset of pupils and giving them the belief they can achieve, but explicit teaching of metacognitive skills gives them the tools needed to convert their hard work into progress. Consequently, a combination of implicit and explicit interpretation and application of Dweck's theory, is thought to produce the best possible outcomes.

At each phase of implementation staff are likely to face **barriers** identified from the data analysis process (see section 5.2.2.1). The proposed theory attempts to account for each barrier, providing means to challenge each obstacle encountered. The barriers are:

- Engaging adults,
- misunderstanding of theory,
- practical constraints,
- religion and
- uncertainty.

Firstly, engaging adults proved difficult for participants, but numerous factors within the theory can be utilised to overcome resistance from staff. As already discussed, accentuating the possible benefits associated with mindset theory such as promoting equal opportunities for CYP and restoring a sense of

balance between education and personal development within school may encourage staff engagement. Furthermore, encouraging staff members to relate the theory to their own experiences will promote the likelihood of them buying in. Staff sharing evidence of their own mindset practices will too influence their stance on the initiative.

Many staff were reported to misunderstand the theory and draw incorrect conclusions. However, with staff training and regular refreshers, those who may not have understood initially, may demonstrate greater understanding when training is revisited. Sharing best practice is too a powerful tool in engaging resistant staff too, as it provides research and evidence of the effectiveness of practice within their context. Sharing best practice can also be used to persuade staff who believe talent is a god given ability. Simply demonstrating how altering how one views intelligence can have positive outcomes may influence one's likelihood in adopting similar practice. It is not their religious beliefs that need to change, just their belief in the effectiveness of mindset theory and its approaches.

Participants reported a number of practical restraints such as having a restrictive curriculum, work load and time as factors which may impede mindset implementation. However, encouraging staff to embed growth mindsets implicitly may overcome these factors. For example, adapting the language used in classrooms to convey key messages from Dweck's work requires no additional time, planning or resources. So for the most resistant staff, small changes to language may be a good starting point in encouraging them to engage with the initiative. This provides further rationale for adopting a whole school approach.

The uncertainty experienced by participants proved to be a factor influencing the extent to which they implemented Dweck's theory. Their anxieties around their practice were often magnified by participants often working in isolation. To overcome these feelings, the theory proposes that staff volunteer and form a small group or working party whereby they can rely on each other for support. The social support, in conjunction with guidance from this theory, will help to

negate the uncertainty participants experienced regarding how to embed growth mindset within their settings.

The movement from trialling mindset practice to filtering it across a whole school is presented as a non-linear, cyclical process. At each phase of implementation, staff may face barriers, but the findings from this research suggests there are factors which challenge each one. A cyclical process allows for practice to be revisited, reviewed and reworked to accommodate the ever changing landscape of education. It also suggests that practice will continue to change and ongoing training will be necessary to meet the needs of new staff and prevent growth mindset from being forgotten in a demanding and complex environment.

#### 4.4.4 Effective Implementation and Outcomes

Through multiple cycles of implementation **effective growth mindset implementation** will emerge and become embedded across a whole school environment, with the ultimate goal of creating a **culture and ethos change**, endorsing the key principles of growth mindset. The outcomes reported by participants, suggest there were many positive effects within their school. **Pupil outcomes** included enhancing their personal development, specifically related to their attitude to learning, aspirations, independence and resilience. There was also the potential for their grades and academic attainment to have improved. However, there were positive whole **school outcomes** too; a change in culture whereby school staff share the same beliefs and commitment towards growth mindset and consistently demonstrate high expectations of their pupils.

#### 4.5 Summary of Chapter

This chapter described in detail the findings of the present study following the data analysis. Themes were defined in turn, and supported by excerpts from interview transcripts. The proposed grounded theory was also presented which encapsulates the mechanisms for enhancing change and implementing mindset theory, within school settings within which the research was undertaken. The

following chapter will describe the grounded theory in greater detail, making links to both findings from the literature review and psychological theory.

## 5. Systematic Literature Review

### 5.1 Chapter Overview

The chapter depicts the findings from the literature searches conducted post data analysis. The process in which the search was undertaken will be clearly defined, followed by a summary of the relevant research. Theoretical links between the findings from the literature review, and the proposed grounded theory from the present study, will be reserved for the discussion in Chapter 6.

### 5.2 Purpose and Rationale of a Post Analysis Review of Published Literature

A comprehensive review of published research following data collection and analysis is characteristic of traditional grounded theory methodology (Glaser & Strauss, 1967). The approach to conducting a literature review in this research is more aligned to methodology proposed by Strauss and Corbin (1998) and other more current grounded theorists (Thornberg, 2012). A more in-depth discussion of these differing approaches can be found in section 2.1.

Strauss and Corbin (1998) purport that a review of published research can be useful before, during or after the research process. They argue that following data collection and analysis, literature can be used to corroborate findings or even to illustrate instances where literature may be inaccurate, incomplete or not reflective of reality. Strauss and Corbin (1998) also highlight the importance of researchers not being overly reliant on the literature; seeking validation or negation of all findings as it “hinders process and stifles creativity” (p. 52).

### 5.3 Secondary Literature Review

The literature was reviewed following data analysis to compare and contrast some of the concepts that emerged from the data with pre-existing research. Where the initial review of Carol Dweck’s research provided rationale for the onset of this research, the secondary review aimed to see how the proposed theory was situated within current existing research. The researcher

acknowledged it was not possible to review literature on all aspects and concepts that emerged from the analysis, so only key concepts were explored.

A key component of the proposed theory in the present study (see Chapter 5) is the emphasis of adopting a whole school approach to embedding growth mindset. Therefore, the focus of this review was to compare findings from existing research regarding how schools have implemented initiatives or interventions across a whole school context within the UK.

### 5.3.1 Search Strategy

This systematic literature review was conducted on 5<sup>th</sup> July 2018. The aim was to explore how the theory of growth mindset can be integrated into a whole school approach. To ensure a thorough search of existing research was undertaken, six different databases were explored through an abstract search. The search terms included a range of words relating to growth mindset theory. These were combined with 'OR' and then linked with 'whole school' and 'school wide' using the 'AND' function. A full description of the search strategy is depicted in Table 5.1.

Papers were included in the search if they were peer-reviewed and written in English. All research from the last decade was also included (2008-2018). Any research conducted before 2008 may not be contextually relevant to the present study, particularly when the political and educational landscape of our society, and the policies driving it, are under constant review and ever changing. Once the inclusion criteria had been applied, all papers were subject to deeper scrutiny. The researcher read through each paper to ensure the research had been conducted in the UK. The initial review of Carol Dweck's research revealed that very few studies had been conducted within the UK. As the present study employed grounded theory methodology, and developed a highly contextualised theory, the context is central to the present study and so research that was undertaken outside of the UK was excluded from the literature review. Following this, one article remained.

Criteria	Number of Results
<b>Databases Searched (6):</b> <ul style="list-style-type: none"> <li>• Academic Research Complete</li> <li>• British Education Index</li> <li>• Education Research Complete</li> <li>• Psych Articles</li> <li>• Psych Info</li> <li>• ERIC</li> </ul>	
<b>Search terms (Abstract search):</b>  'whole school' OR 'school wide'  AND 'growth mindset' OR 'implicit theories of intelligence' OR 'incremental theories of intelligence' OR 'mindset theory'	N = 424
<b>Inclusion criteria applied:</b>  Full text Peer Reviewed 2008-2018 Language – English	N = 142 N = 136 N = 94 N = 88
<b>Exclusion Criteria:</b>  Research not conducted within UK context (with duplicates removed)	N = 1

*Table 5. 1. A table depicting the search terms used in the literature review which included 'growth mindset' related terms and the number of results yielded.*

The search described above highlights the shortfall of mindset research conducted in the UK, especially across a whole school context. As only one article was relevant to the present study, an additional search was undertaken. The search terms were broadened so the search aimed to focus solely on exploring how interventions or initiatives outside of growth mindset have been implemented across a whole school. An abstract search was conducted using the same six databases as the initial search. The search terms 'intervention' and 'implementation' were combined using the 'OR' function. These were linked

with terms associated with ‘whole’ school using the ‘AND’ function. The same inclusion criteria were also utilised and are depicted in Table 5.2.

Criteria	Number of Results
<b>Databases Searched (6):</b> <ul style="list-style-type: none"> <li>• Academic Research Complete</li> <li>• British Education Index</li> <li>• Education Research Complete</li> <li>• Psych Articles</li> <li>• Psych Info</li> <li>• ERIC</li> </ul>	
<b>Search terms (Abstract Search):</b>  ‘intervention’ OR ‘implementation’  AND ‘whole school’ OR ‘school ethos’ OR ‘whole school approach’	N = 2153
<b>Inclusion criteria applied:</b> <ul style="list-style-type: none"> <li>• Full text</li> <li>• Peer Reviewed</li> <li>• 2008-2018</li> <li>• Language – English</li> </ul>	N = 899 N = 705 N = 464 N = 427
<b>Exclusion Criteria:</b> <ul style="list-style-type: none"> <li>• Research conducted outside of the UK (with duplicates removed)</li> </ul>	N = 52
Abstract Search for relevance (see below for more info)  Additional papers added through reference searches (snowball effect)	N = 6  N = 2 Total N = 8

*Table 5. 2. A table depicting the search terms used when attempting to broaden the search, and the the number of results yielded.*

Following the application of the inclusion criteria described in Table 5.2, 427 papers remained. The researcher read through each article and excluded any research which was undertaken outside of the UK. Following this, and with any



duplicates removed, 52 papers remained. The abstracts of each were then reviewed for relevance, and to ensure the remaining studies were consistent with the aim of this literature search. Papers were not included in the review if they failed to meet any of the following criteria:

- Research must be based on a whole school initiative or intervention – either implementing the initiative or reviewing pre-existing whole school approaches.
- Aim of the whole school intervention must be based around changing mindset/attitude/behaviour of pupils (including or excluding staff)
- Initiative must be school based and implemented across the whole school for all pupils – not restrained to particular subjects, topics or targeted towards specific groups of CYP.
- Interventions must be within the scope of educational professionals to deliver, not requiring specialised support or provision from outside of education.

Studies which did not meet the criteria above were excluded from this review. A full list of the studies, and the reason for their exclusion can be found in Appendix 14. Following the application of both inclusion and exclusion criteria, five studies remained. Through a review of reference lists, two additional studies were also added to the review.

### 5.3.2 Findings from the Literature Review

The eight remaining studies described in the literature searches above explore different approaches taken to enhancing whole school change. Each will be looked at in turn to identify different factors that support whole school intervention and then critically reviewed to gain a balanced view of each study. A summary of each study, and its limitations, can be found in Appendix 13.

The first, an article written by teacher and psychologist Marc Smith, purports that schools should continue to promote growth mindsets through whole school interventions. Smith (2015) argues that the resilience and ability of CYP to respond adaptively to day to day set backs can be enhanced through teaching

non-cognitive skills within education. He describes how “positive emotions promote positive behaviours” (Smith, 2015, pg. 721). Increasing CYP to respond positively to failure, whilst also increasing their awareness of the impact of negative emotional responses to challenges, will enhance resilience and thus academic buoyancy of pupils in our schools. Smith (2015) also highlights that research within this domain has been largely ignored and not used to inform intervention. Therefore, closer liaison between teachers and researchers would bridge the gap between research and practice, eliminating the likelihood of labour intensive and potentially expensive interventions. Finally, the article concludes by emphasising the importance of trialling and reviewing interventions.

Smith (2015) has first hand experience of schools and education, from his work as a teacher and chartered psychologist. However, although the article was peer reviewed, it was not based on any empirical research, nor supported by any evidence. The arguments proposed are logical, but are the views of one practitioner and may not stand up against much more rigorous research.

A study conducted by Blank et al. (2010), compared whole school behavioural interventions which aimed to promote the social and emotional well-being of young people in secondary schools. They conducted a systematic review of 27 studies of varying approaches and designs. The study focused on five areas which could be utilised to embed an intervention across a whole school context; curriculum approaches and the role of teachers, parents, external agencies and young people.

Blank et al. (2010) failed to draw strong conclusions from their review. When comparing the factors which influenced the successful application of whole school behavioural approaches, they argue the evidence is mixed. For example, embedding approaches within the curriculum had a significant impact in some studies, yet not others. The same was reflected in the role of external agencies and teachers. Although, Blank et al. (2010) suggest the evidence is unclear regarding the impact teacher involvement and training has in implementing school-wide initiatives; they warn readers to take caution when interpreting

these results. They suggest it is extremely unlikely that any whole school intervention can positively impact pupils without the explicit support of school staff. Therefore, Blank et al. (2010) conclude that studies included in the review may have failed to disclose all facets of the teacher's role. Involving parents through training and education was considered effective in reducing bullying and anti-social behaviours of pupils.

Following the review, Blank et al. (2010) acknowledged that literature in this area is underdeveloped. The literature was dominated by a focus on preventing bullying and disruptive behaviour with very little research investigating the effectiveness of promoting pro-social skills and behaviours, and how this may be achieved. Additionally, the vast majority of papers in the review originated from America, with only three studies conducted in the UK. The demographics of pupils involved in the studies varied extensively too, with high populations of CYP from black, minority ethnic backgrounds (BME), it is difficult to generalise the results to other populations and contexts. Furthermore, the studies within the review demonstrated varied practice for defining and measuring well-being. Most relied on self-report which is subject to bias and therefore potentially an unreliable measure of such a subjective construct. One key limitation of this review is their failure to compare, or control for, the quality of the studies included in the review.

A study conducted by Bonell et al. (2010) investigated the impact of whole school interventions to improve social inclusion on substance use. A sample of 20 schools enabled researchers to match two pairs of schools according to external agency ratings and student population (proportion of BME and disadvantaged pupils). Consequently, they were able to randomly allocate one school in each pair to an intervention group and utilise the other school as a comparison. The study focused on pupils aged 11-12, with 614 out of a possible 798 completing a survey both before the intervention and nine months later. This provided a quantitative measure, with semi-structured interviews providing qualitative data.

Intervention schools were tasked with embedding 'The Healthy Schools Ethos' intervention with support from facilitators, additional training and funding. The aim was to positively impact school ethos over the course of one year. Schools in the intervention group utilised an 'upstream' pathway to whole school change which involved action groups consisting of students and staff working together to decide upon how change may be achieved. Results from this study indicate that CYP were integral to changing school ethos. Bonell et al. (2010) found that directly involving CYP in whole school change positively impacted their relationships with staff, their own self regard and ownership of the school. Furthermore, staff training was highly valued and seen to have had a positive impact on creating a new school ethos.

The strengths in this study lie in the design; a randomised trial, controlling for differences in school ratings and pupil population. However, the sample size was small, with only four schools participating, two of which implemented the intervention. Pupils involved in the study were also from one year group only, with participants ranging from 11-12 years old. This age group may not have been the most appropriate choice of participant, with the researchers themselves acknowledging that most of the sample were not involved with substance use to start with. With a wider age group, the results may have been subject to more variance in responses. Furthermore, throughout the study an intervention school was swapped with a comparison school, which was likely to bias the evaluation of intervention effectiveness, with participants likely to over report the benefits. Bonell et al. (2010) claim that this study did not seek to test 'upstream' pathways to whole school intervention, but they did conclude that this method of implementation appeared beneficial when encapsulating factors such as staff training and pupil involvement.

Wigelsworth, Lendrum and Humphrey (2013) conducted a large scale study, also investigating a whole school intervention designed to promote social and emotional aspects of well-being. They were interested in the impact and variation of implementation quality of Social and Emotional Aspects of Learning (SEAL). This is a curriculum that is designed to be utilised and adapted to meet the needs of a school, it is not considered to be a rigid and prescribed

approach. Over a two-year period, Wigelsworth et al. (2013) conducted pre and post assessments on 3306 year seven pupils, using the Emotional Literacy Assessment and Intervention (ELAI) survey. This sample spread across 25 LAs and consisted of 23 SEAL schools each matched with a comparison, not adopting the SEAL framework. Schools were matched on the basis of attainment, pupil premium, special educational needs, size and attendance. Additionally, a sub-sample of nine of the SEAL schools were assessed for implementation quality. These schools were used as case studies, data collection derived from interviews with staff, focus groups with students, observations and document analysis.

Following statistical analysis of the ELAI surveys, no significant improvements were found between SEAL schools and their comparison. According to Wigelsworth et al. (2013), this suggests the SEAL programme was not effective in improving the social and emotional skills of pupils over a two-year period. Furthermore, the quality of delivery was also found to have no impact on the social and emotional skill scores. The sample size of this study was deemed great enough to exceed that required for robust statistical analysis providing credibility to the findings. However, the sample size for the sub-group of schools involved in assessing the quality of implementation was limited, meaning a thorough analysis of pre-test scores was not possible. The ELAI surveys were only completed by pupils, parents nor teachers were asked to complete the survey, meaning the results could not be triangulated. Also, the unreliability of self-report data may have confounded these results. Wigelsworth et al. (2013) also failed to randomize schools to control or intervention groups, or assess the quality of schools (in terms of overall performance and behaviour) prior to the study, making it difficult to compare results.

Although this research suggests the design and quality of the SEAL initiative does not impact the skills of the pupils directly, Wigelsworth et al. (2013) assert that this does not mean that similar interventions are redundant within schools. Instead, they propose that “there needs to be proper trialling of interventions to demonstrate efficacy before they are brought to scale, better use of research to inform programme design” (Wigelsworth et al., 2013, p. 5). Factors such as

guidance and staff training are considered to be important too.

More recent research by Warin (2017) focused on instilling a whole school ethos of care, based on the principles of nurture and attachment theory (See Warin, 2017, for further explanation of these principles). Warin (2017) was particularly interested in how to inspire a whole school commitment to care. Seven primary provisions were identified; five mainstream schools ran nurture groups within the school or school grounds, and two alternative provisions which employed an integrative whole school nurture approach. Data collection strategies included interviews with head teachers and staff, focus groups with staff, school tours, observations and use of the Boxall Profile. School practices were compared to understand how psychosocial interventions can benefit children, and how these principles can be embedded across a whole school context.

Warin (2017) found that the settings which best demonstrated a caring and nurturing whole school ethos were schools which were driven by strong leaders. It was not only important that those in leadership roles were on board with instilling a caring ethos, but they were supportive of other staff too. Warin (2017) goes on to explain that the values which staff possess, regarding nurture and care, were also key indicators of whole school change. Staff efforts to instill caring and nurturing principles could easily be undermined if the same values were not shared by the whole school community. Therefore, targeted support or curriculum based activities had little impact if not all staff worked towards the same vision. To achieve such consistency, Warin (2017) suggested schools should specifically target the recruitment of “like-minded staff who already share the same values and do not have to be persuaded into a different philosophy” (p. 192). Whole staff training was also seen to be essential, as everyone was seen to be equally responsible for creating the school ethos. Additionally, training only particular staff was seen to exacerbate the differences between staff values.

The paper published by Warin (2017) focuses on primary educational settings only, and included seven schools in the North West of England. Little is reported about the demographics of the sample making the findings difficult to

generalise. Warin's (2017) data collection process included multiple participants and stakeholders ensuring that a wide range of perspectives were considered. However, the procedures used in data analysis were not explicitly reported, so it is unclear as to how the findings were reached. Also, the researchers claimed to be exploring the ethos of 'care' but did so through nurture group provision. One could argue that instilling a caring school environment could be achieved without nurture provision. Additionally, the research was funded by the Nurture Group Network, which may have biased evaluations and provided additional motivation to highlight positive findings. Despite this, Warin (2017) has attempted to shed light on whole school initiatives and the factors which enhance the adoption of a nurturing and caring school ethos.

An article by MacDonald, Reilly and Worsley (2016) critically reviewed the current educational system and proposed key areas for change based on their teaching experiences and practice based evidence. They argue that the current education system is ideologically driven by top-down processes which lack research and appropriate supporting evidence. As an alternative, they suggest two key principles for which educational systems should be based; a greater focus on using evidenced based approaches and more emphasis on trust within the current workforce in education.

In applying these two principles, MacDonald et al. (2016) assert that a model can be built that is "based on a positive view of the potential of our children and adults" (p. 200). By building on positives and instilling trust in teaching staff, a bottom up system can be cultivated to overcome the narrowed curriculum and assessment focused nature of our schools. They highlight the importance of the education workforce by stating the need to "increase the professional autonomy of school leaders and teachers, and actively encourage them to be innovative in improving standards in their schools" (MacDonald, et al., 2016, p. 200). Furthermore, staff should receive CPD and training to enhance their teaching skills.

The arguments proposed by MacDonald et al. (2016) appear to be theoretically and logically sound assertions, aimed to improve outcomes for CYP, particularly those from disadvantaged backgrounds. However, the review is based on the

perspectives of three leaders from one school in East London, developed from experience and not supported by empirical research. Not only would it be difficult to generalise their arguments to populations outside of such a diverse context as East London, but one could also argue that the alternative strategy they propose would be held in higher regard if supported by evidence.

Banerjee, Weare and Farr (2014) conducted a large scale study consisting of 28 primary and 21 secondary schools. The authors recognised that the evidence base for social and emotional intervention in the UK remained underdeveloped. They aimed to investigate the implementation of SEAL to explore the impact of practices on pupil and school outcomes. To achieve this, participating schools were visited by behaviour and attendance advisors for one day and collected data from tours of the school, interviews with SEAL staff leads, observations of SEAL in practice, follow up discussions with staff and group discussions of pupils. Thirteen aspects of implementation were then rated on a three-point scale of low, medium or high quality. Additionally, a sample of 2242 pupils in 29 schools completed an online survey designed to assess social experiences and school ethos. Both scales were assessed, and considered to have good internal consistency.

A comprehensive quantitative analysis revealed that whole school universal implementation of SEAL was significantly related to higher attainment ( $p=.004$ ) and lower persistent absence ( $p=.002$ ). Furthermore, whole school implementation also correlated positively with pupil perception of school ethos ( $p=.001$ ). This provides evidence to support that embedding initiatives through a whole school approach has a positive influence on overall school ethos, but also promotes outcomes including improved educational attainment as well as improved pupil attendance.

Banerjee et al. (2014) described how 'whole school universal implementation' encapsulated a wide range of practice including engaging all staff, learning opportunities for all pupils, integration of additional learning focused on behaviour and well being, promoting greater pupil self-awareness and group working skills and professional training for staff. The results also revealed that



school leadership is important. Banerjee et al. (2014) state “it is not the ‘buy-in’ of the leadership per se that emerges as the strongest feature, but rather the action that results from this” (pg. 732). That is, the engagement of all staff in embedding the initiative and integrating it into everyday practice. They argue that it is this variety of practice that reaches across the whole school community and influences school ethos. Finally, in recognising the need for flexibility in implementation of such initiatives between schools, Banerjee et al. (2014) argue it is therefore important to disseminate and share whole school practices to ensure that high quality information and effective strategies are utilised.

This was a large scale study which encapsulated data through a variety of means. Data was also subject to thorough quantitative analysis with all results clearly reported. However, the data collected from school advisors was collected from one visit to the school, and therefore may have only captured a snapshot of the schools SEAL practices. Aspects of practice may have been missed, such as a broader range of staff activities, important interactions between staff and/or pupils and additional environmental factors. Also, despite its statistical rigour and internal consistency, the self report scales completed are open to bias and interpretation. The online survey incorporated 20 questions, each on a four-point rating scale and may be an insufficient tool to accurately measure a complex construct such as ‘well-being’.

Honess and Hunter (2014) explored a whole school emotional literacy and social competency initiative called Promoting Alternative Thinking Strategies (PATHS). This is a prescribed curriculum for teachers to deliver across a whole school context. The researchers utilised one school as a case study, based on convenience sampling. They carried out seven semi-structured interviews to explore the perspectives of class teachers and pastoral leads. A qualitative analysis of participant views revealed that staff liked the prescriptive nature of the PATHS curriculum, especially as it was a new initiative to many. Another theme to emerge was the importance participants placed on staff training. The analysis also highlighted some scepticism at the start of the intervention, with staff unconvinced over the efficacy and longevity of the PATHS curriculum in delivering the outcomes it claimed to promote. However, overall staff were

positive about the intervention and felt that with continued prioritisation within school, commitment from staff and support from school leads, it was a meaningful initiative.

This study highlights the views of staff who have been directly involved in delivering a whole school intervention. The qualitative analysis ensured participant views were present throughout the paper and that the themes emerged truly reflected staff accounts. However, the conclusions should be drawn with caution as a small sample size and the specific nature of case studies mean that it is difficult to generalise results beyond this particular school. Furthermore, the location, size and demographics of the school are not reported, so the context in which the research was undertaken is unclear. A convenience sample can also lead to additional bias; the school SENCo was the LA lead for the PATHS curriculum which makes participants vulnerable to social acceptance bias. Staff may have provided responses which they deemed would be acceptable to the school leadership team.

### 5.3.3 Conclusions Drawn from Systematic Literature Review

The research detailed in this chapter provides evidence to support the effectiveness of whole school interventions on school ethos and improving school and pupil outcomes such as academic attainment and well-being (Banerjee et al., 2014; Warin, 2017). A bottom-up approach to instilling whole school change was also found to have a positive impact (Blank et al., 2010; MacDonald et al., 2016). The studies demonstrate how including staff and pupils in creating the change is an effective method of promoting positive outcomes for CYP. Furthermore, the research highlighted the need for a greater breadth of evidence to inform policy, practice and future initiatives, and that these should be trailed before rolling out across wider contexts (Bonell et al., 2010; Smith, 2015; MacDonald et al., 2016). Whole school initiatives were also supported by their workforce, with strong leaders, supportive staff and staff training all being factors which enhance practice (Bonell et al., 2010; Banerjee et al., 2014; Honess & Hunter, 2014; MacDonald et al., 2016; Warin, 2017). Finally, the literature revealed uncertainty regarding the use of curriculum approaches in

isolation, when trying to foster whole school change. The research appears to suggest integrating initiatives into the curriculum is more effective when used in conjunction with other approaches (Banerjee et al, 2014; Smith, 2015, Warin, 2017).

The findings from this literature review support many of the themes which emerged from the data analysis of the present study. However, the literature also revealed the potential for pupils to be directly involved in the planning and delivery of whole school approaches and provided evidence to suggest this as an effective method of changing school ethos. The proposed theory within this research does not directly involve pupils with mindset implementation. The inclusion of pupils in organisational change projects may warrant further exploration, and provide rationale for additional research in this area.

Overall the research reviewed within this chapter has supported the findings of the present study. However, the lack of research into whole school application of growth mindset theory remains under researched, especially within a UK context. It is hoped that the present study can begin to address these shortcomings within the literature, but it is evident that far more research needs to be conducted to inform future practice in schools.

## 5.4 Chapter Summary

This chapter has summarised the results of the systematic literature review following the data analysis of the present study. Themes from the analysis were used to form new search terms that enabled further exploration of those constructs. In doing so, comparisons between the findings of the current study could be made with pre-existing literature. A greater exploration of how the literature reviewed here links with the grounded theory, will be detailed in the next chapter.

## 6. Discussion

### 6.1 Chapter Overview

This chapter will summarise the findings of the present study to draw final conclusions and identify next steps. First, the findings drawn through data analysis will be linked to the research questions to demonstrate how the current study has fulfilled the initial aims. The grounded theory will then be reviewed in relation to the systematic literature review and the psychological underpinning explored. Self-Determination theory (SDT) is described and compared to the findings of this research, providing additional support for the proposed theory.

A critical review of the current study will then be undertaken, highlighting the strengths and limitations of the design, methodology and findings. Areas for future research will be explored before discussing the implications of the proposed theory for educational settings and the EP profession. The chapter will conclude by detailing the planned dissemination strategy for the proposed theory and reflecting upon the researcher's journey into grounded theory research.

### 6.2 Summary of Findings

#### 6.2.1 Findings in Relation to the Research Questions

As described in section 1.6, the research questions of the present study were:

- How are schools currently implementing growth mindset?
- What aspects of this practice is perceived as most useful?

The present study sought to answer these questions through the perspectives of staff in schools who were directly involved in implementing growth mindset within their setting. These questions, alongside additional, exploratory follow-up questions, provided the rich, detailed information required to understand the phenomena, and the conditions in which it occurs, within a complex social system. Each of the selective categories, which were constructed throughout the data analysis process, link directly to the initial research questions above.

The first exploratory question, related to understanding how schools have interpreted mindset theory and the actions they took to impact the staff and pupils within their schools. The core category '**morals and values as motivators**' and the two subordinate selective categories '**personal beliefs**' and '**meeting the academic and developmental needs of pupils**' together contribute towards answering this. They entail the factors that drove participants to adopt growth mindset and apply it within their educational setting. Two additional selective categories further contribute to answering the initial research question by identifying the practical aspects of their delivery and the actions they took to embed the theory. These are '**supporting staff to embrace growth mindset**' and '**creating a whole school approach**'. The findings within each of these themes details the following ways in which participants promoted growth mindset within their educational settings:

- Staff demonstrated a personal commitment and belief in growth mindset theory.
- Related to the theory personally, drawing upon their own previous experiences.
- Identified key characteristics of their pupils and aimed to meet their needs through mindset intervention by promoting:
  - attainment and attitude to learning,
  - aspirations and consideration of higher education,
  - resilience,
  - independence and
  - self belief to overcome fear of failure.
- Highlighted appealing factors to staff to promote engagement with theory such as the ability to integrate it into practice without increasing workload.
- Staff worked collaboratively with colleagues to plan and deliver the intervention.
- Trialled mindset practice and refined it over time before disseminating across the whole school faculty.
- Shared evidence of best practice with all staff.

- Experimented with explicit and implicit methods of embedding growth mindsets.
- Used language to embed core messages of growth mindset.
- Ensured leadership and management were supportive of their practice, regardless of whether they were directly involved or not.
- Taught pupils transferrable skills to aid learning.
- Embedded practice into pre-existing systems within their schools such as professional development days, performance management, school values, parents' evenings and assemblies.
- Began research and implementation from a ground up approach.

The second research question aimed to identify the key mechanisms that promoted the successful application of mindset theory, consistent with a critical realist approach. The selective codes '**understanding the impact**' and '**supporting staff to embrace growth mindset**' both contribute to answering the second research question. Together, they identify factors which participants reported to be most influential. Furthermore, the selective category '**barriers**' provides a deeper understanding of factors that are most useful for embedding growth mindsets, by highlighting factors which inhibit practice. The findings within each of these themes details the practices participants perceived to have had the biggest impact within their schools:

- Using language to instill growth mindsets in pupils through feedback given to pupils, positively reframing mistakes, challenging negative self-views and having high expectations of pupils.
- A bottom-up approach led by key staff who are interested and motivated to deliver growth mindset.
- Collecting evidence of context specific best practice over time and sharing experiences with staff across the whole school.
- Staff training specifically on growth mindset to overcome staff misconceptions.
- Giving staff autonomy over how they deliver growth mindset to their classes or departments.

- Combining multiple factors of delivery as opposed to one method working in isolation.
- Staff working collaboratively and supporting one another in their research and implementation of growth mindset.

The findings of the present study emphasise the importance of school wide mindset implementation. The proposed theory suggests this method can then lead to a change in whole school ethos. However, for such organisational change to occur, the current context and culture of each school must be considered. The proposed theory aims to meet the needs of individuals by supporting staff to experiment with practice, in order to find what works for them, their pupils and their school. If leadership are supportive of such flexible methods of intervention design, the more likely the intervention will be successful in meeting the needs of their pupils.

#### 6.2.2 Contradictions Within and Between Participant Views

Through the process of memoing and data analysis, a number of interesting points arose within and between participant accounts. These were typically contradictory, revealing the complexities involved in embedding initiatives such as growth mindset, in such complex social systems as schools. A recurring theme in participant views was their intentions to use growth mindset theory to promote the personal development of the CYP in their settings. They hoped by altering mindset, they would cultivate characteristics such as resilience, self-esteem and independence. However, as interviews proceeded, and participants were asked to reflect upon how successful their practice had been, almost all participants ultimately referred to academic success and attainment as a measure of impact. This contradiction between what participants stated they set out to achieve, and the tools used for measuring success did not align. The frustration expressed by participants in wanting to promote character education, versus the need to meet the demands of an exam focused education system are expressed in the theme '**balancing the culture of education**'.

All participants strived for whole school implementation in order to maximise impact and reach as many CYP as possible, however, some views they expressed were not congruent with this aim. For example, participant three stated that they highly valued being able to implement mindset initiatives to a small group of CYP, and that disseminating their practice to larger cohorts may dilute the impact of their work. However, participant three also grappled with the moral conflict of leaving CYP out of the group, and explicitly stated wanting to provide all pupils with the same opportunities. The conflicts participant three experienced are reflected in the theme **'equal opportunities and the impact of socio-economic background'**.

Similarly, participant four strived for a change of culture across the whole school setting with regard to fostering growth mindsets. This is captured by the theme **'integrate into a whole school culture'**. This was achieved through implicit practice, embedded into everyday interactions with pupils through language and feedback. However, the same participant described how the school employed an outside trainer to provide practical ways of delivering growth mindset within classrooms, reflected in the theme **'explicit methods of implementation'**. These are conflicting statements which reflect the participants desire for implicit implementation but reliance on explicit methods of delivery.

All participants reported to have embraced Carol Dweck's work as they related to it personally and subscribed to its principles. However, again there were contradictions within their belief in the theory and their accounts they provided within interviews. For example, many participants spoke of limitations in one's ability or a ceiling point in intelligence due to genetics or predisposed biological factors. Consequently, the extent to which they truly believed that effort, practice and guidance can lead to greater achievement varied between participants. This led to the creation of the theme **'interpretation and commitment to the theory'**.

The contradictions described here highlight important issues in delivering mindset intervention in schools. There are multiple, and sometimes competing, demands on school staff which can impact their own passion, drive and



motivation. Highlighting these difficulties can provide insightful information which has been incorporated into the proposed theory, to have experienced with regards to balancing the culture of education and promoting equal opportunities provide further insight into the motivating factors which facilitate successful implementation. preempt factors which may impede implementation. Within the current study, the grounded theory strives for whole school implementation, but includes both implicit and explicit tools for delivery. Furthermore, the moral dilemmas school staff have experienced with regards to balancing the culture of education and promoting equal opportunities provide further insight into the motivating factors which facilitate successful implementation.

### 6.2.3 Grounded Theory in Relation to the Literature Reviews

As discussed in section 2.4, there appears to be a strong evidence base for applying growth mindset in schools to improve outcomes for CYP. The studies presented demonstrate how enhancing CYP's beliefs regarding the malleability of intelligence can improve their academic performance (Blackwell et al., 2007; Grant & Dweck, 2003; Paunesku et al., 2015) as well as their well-being and health outcomes (Yeager & Dweck, 2012; Yeager et al., 2014). Furthermore, longitudinal studies also show that these effects are not short-lived (Blackwell et al., 2007).

The initial review of Dweck's research highlighted gaps in the existing evidence base, most notably, the lack of research conducted outside of America, particularly within the UK. The failure of research to compare different models of intervention was also recognised. These shortcomings revealed from the initial literature review provided justification for the present study. Research undertaken within the UK, by a researcher not associated with Carol Dweck herself, could provide a unique contribution to the existing evidence base and knowledge of growth mindset application.

The systematic literature review served a different purpose; to examine whether existing research aligns with the theory proposed within the present study. By

conducting a literature review following theory construction, research can be used to support or challenge the mechanisms incorporated in the grounded theory. Section 5.3 presented an in-depth analysis of eight studies. Many findings highlighted from these were supportive of the key themes and mechanisms identified from the present study. Table 6.1 details the links between the findings of the present study with those from the secondary literature review.

<b>Findings from Literature Review</b>	<b>Themes from Proposed Theory</b>	<b>Supporting Evidence from Literature Review</b>
Whole school initiatives work best when teaching staff and pupils are directly involved in planning and implementation.	Bottom up approach	Bonell et al. (2010); MacDonald et al. (2016)
School workforces should be gifted a greater level of trust to deliver better outcomes for CYP, leading to more innovative interventions.	(Autonomy)	MacDonald et al. (2016)
School based interventions should be trialled to ensure efficacy before scaling up to school wide initiatives.	Initial trial period	Wigelsworth et al. (2013); Smith (2015)
The gap between research and practice should be addressed. School interventions should be informed by research and practice based evidence.	Collating evidence of best practice	Wigelsworth et al. (2013); Banerjee et al. (2014); Smith (2015); MacDonald et al. (2016)
No one single approach supports whole school delivery of interventions. Curriculum approaches alone not sufficient. Interventions are most effective when delivered through varied practice.	Multiple factors influence impact	Blank et al. (2010); Banerjee et al. (2014); Warin (2017)

CYP need to be taught additional transferrable skills such as group working skills, greater self-awareness and emotional literacy.	Incorporate teaching of transferrable skills	Banerjee et al. (2014); Smith (2015)
Whole school interventions needs to be delivered by all staff and embedding it in to their everyday practice, so it becomes a part of the school culture.	Embed into pre-existing systems and practice	Banerjee et al. (2014); Warin (2017)
A strong leadership was found to be effective in changing school ethos. Having leadership on board with new initiatives supports other school staff to adopt the same approach.	Leadership is influential	Banerjee et al. (2014); Honess & Hunter (2014); Warin (2017)
Any whole school intervention highly dependent on support school staff.	Support from colleagues valued	Blank et al. (2010) Warin (2017)
Scepticism from staff was experienced when faced with implementing a new initiative. Staff were unsure of the efficacy and longevity of an intervention. Successful implementation requires ongoing commitment from staff.	Barrier (Engaging staff)	Honess & Hunter (2014)
Staff value training of all staff in interventions and is viewed as having a positive impact on creating a new school ethos.	Whole school training (of staff)	Bonell et al. (2010); Wigelsworth et al. (2013); Honess & Hunter (2014); MacDonald et al. (2016); Warin (2017)
Staff were more likely to adopt new ways of working if they shared the same values in which the school are trying to instill.	Morals and values as motivators	Warin (2017)

*Table 6. 1. A table to show how key findings from the literature review link to the themes from data analysis.*

A **bottom up approach** to embedding mindset theory across a whole school context was supported by findings in the secondary literature review. Those at the forefront of delivering intervention within education are considered best placed to drive new innovations. MacDonald et al. (2016) supported this view by stating that they believe that practice should “‘start at the end’, with what we want in our classrooms, and build from there through the school to the local area and finally to the country” (p. 201). Bonell et al. (2010) referred to this method as an ‘upstream pathway’ and their research provided additional evidence to support this approach.

By empowering staff to make changes in their own educational contexts, they are able to meet the needs of the pupils in their schools. Enhancing the **autonomy** of school staff is central to the proposed theory and evidence to support this approach comes from MacDonald et al. (2016) who argue that “we need now to show trust in their ability to lead the system” (p. 200). They continue by stating teachers should be actively encouraged to develop educational initiatives.

Congruent with the proposed theory, Wigelsworth et al. (2013) claims that whole school approaches are most effective when there is an **initial trial period** and staff have the scope to **develop practice over time**. Based on their findings, Wigelsworth et al. (2013) propose that “there needs to be proper trialling of interventions to demonstrate efficacy before they are brought to scale” (p. 6). This supports a teacher-led, ground up approach which Smith (2015) suggests is likely to be more cost and time effective, than implementing a whole school initiative, without evidence for its use in that particular context. MacDonald et al. (2016) and Smith (2015) too highlight the importance of educational initiatives being founded by a strong evidence base and current research. They argue “we need to create a system which is not only based on evidence but which also actively encourages research” (p. 200-201). Only once staff have **collated evidence of best practice**, should initiatives be disseminated across a larger community. Banerjee et al. (2014) propose that this is the best method for ensuring the most effective strategies are utilised.

Blank et al. (2010) failed to find strong evidence for embedding interventions into the national curriculum. This finding was consistent with Warin (2017) too, who found that “support such as school counsellors, specific curriculum opportunities like personal, social, health, economic education, and discrete citizenship lessons, can easily be undermined” (p. 190). This supports the findings of the present study that **multiple factors influence impact** and curriculum approaches alone may be ineffective. There is not one single strategy that is effective in implementing a whole school initiative (Banerjee et al., 2014). Instead, practice should be varied, across the school and embedded in a number of ways. For example, incorporating **language and implicit implementation** is important too. Warin (2017) describes the benefits of implicit implementation, stating that a teacher “relies on a much deeper and more spontaneous set of responses that implicitly convey their beliefs about their purposes in relation to the children they are teaching and caring for” (p. 95).

A number of studies from the literature review reflect the present studies finding that whole school interventions should **incorporate teaching of transferrable skills** alongside implementing growth mindset theory (Banerjee et al., 2014; Smith, 2015). By promoting metacognition, self-awareness and emotional resilience, CYP are equipped with transferrable skills which will support them to be successful when faced with challenges. Banerjee et al. (2014) suggest that it is the variety of practice across a whole school setting that influences change and supports teachers to **embed into pre-existing systems and practice**, creating new a school ethos.

Findings from the literature also revealed the importance of staff in delivering new educational initiatives. Blank et al. (2010) recognise that staff will always play an integral role, stating that it is “important to acknowledge that few, if any, interventions will happen without the explicit help and support of at least one teacher” (p. 6). It was also recognised throughout the review that school **leadership is influential**. Consistent with the findings and grounded theory of the present study, the ability for teachers to drive their innovations forward may be dependent on views of senior management. According to Warin (2017) without backing from leadership, whole school implementation may not be

possible; “the creation of a nurturing culture where all staff sing from the same, nurturing, song sheet, implicates the all-important role of school leadership” (p. 191). Honess and Hunter (2014) also support this view, suggesting the support of school leads is essential in ensuring the longevity of any new way of working.

Honess and Hunter (2014) found that **engaging staff** was initially a potential barrier to successful implementation, stating that numerous teachers asked to deliver the PATHS intervention “reported initial feeling of scepticism about the claims of efficacy of the programme with some citing other, similar, programmes that they have seen “come and go” in the past” (pg. 72). The participants in the present study shared similar experiences, reporting that not all staff wanted to adopt a new way of working. The proposed theory tries to address this through capitalising on what motivates staff, through sharing best practice, staff training and ongoing review cycles.

Multiple studies in the review support the notion of **whole school training** and ongoing CPD (Bonell et al., 2010; MacDonald et al., 2016; Warin, 2017; Wigelsworth et al., 2013) as detailed in the grounded theory of the present research. This was deemed vital in instilling a school wide commitment from staff to embed changes. Warin (2017) recognised the need training fulfilled, arguing for a “commitment to the support and training of the staff who have to handle, on a daily basis, complex and challenging social and emotional relationships with vulnerable children” (p. 195).

An interesting finding from the secondary literature review was the support of recognising staff’s **morals and values as motivators**, which were key in facilitating whole school culture change. Warin (2017) claimed that a crucial aspect of successful whole school change relied upon “like-minded staff who already share the same values and do not have to be persuaded into a different philosophy” (p.192). This supports findings from the present study that the internal belief systems held by school staff do act as motivating factors in implementing school initiatives. MacDonald et al. (2016) too found that teaching staff are value driven, and essentially strive to improve outcomes for our pupils, particularly those from disadvantaged backgrounds” (p. 200).

A visual representation of how findings from the secondary literature review strengthen the findings from the present study and provide evidence for the proposed grounded theory can be found in Figure 6.1.

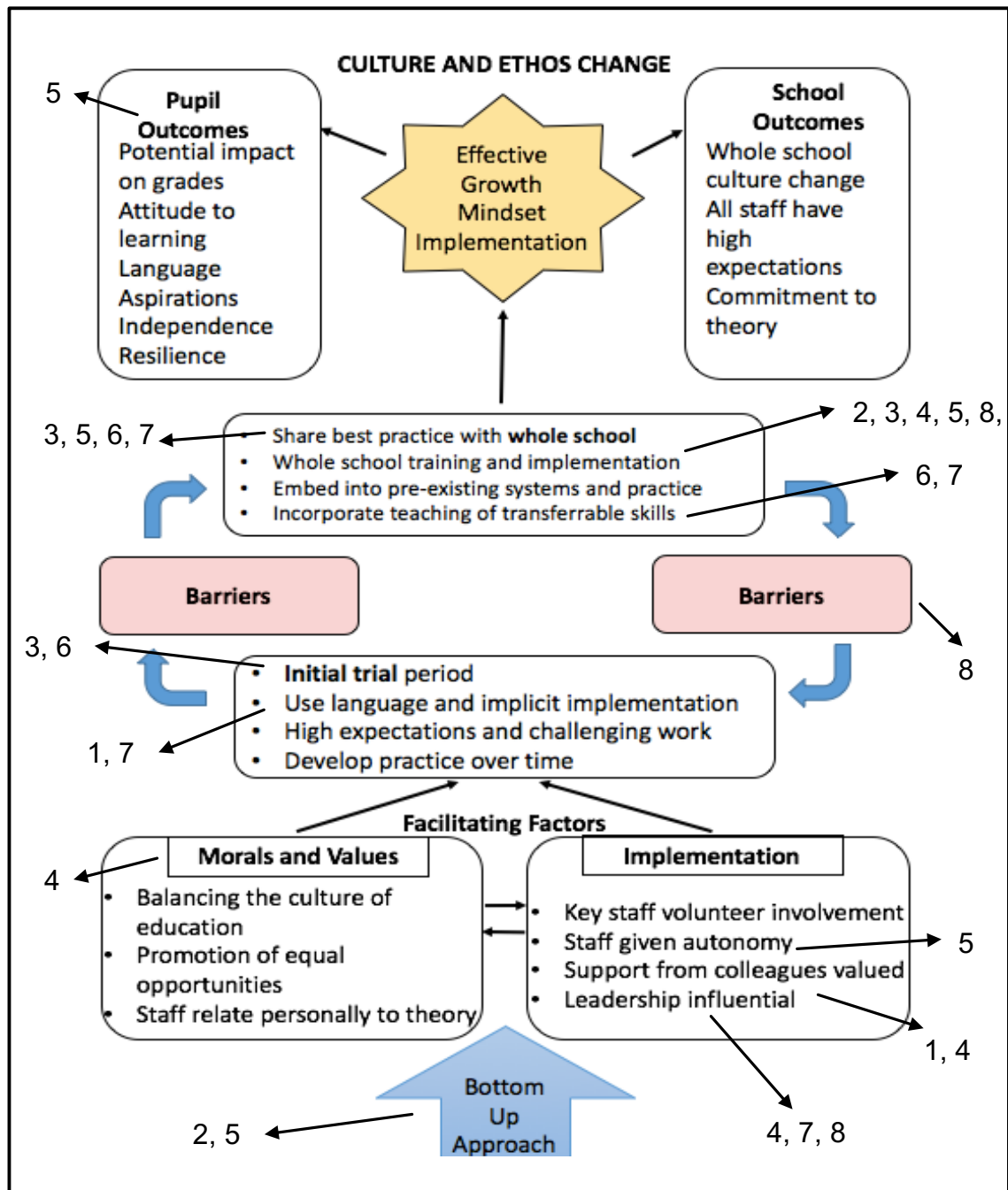


Figure 6. 1. The relationship between the proposed grounded theory and findings from the systematic literature review.

**Key**

1. *Blank et al. (2010)*
2. *Bonell et al. (2010)*
3. *Wigelsworth et al. (2013)*
4. *Warin (2017)*
5. *MacDonald et al. (2016)*
6. *Smith (2015)*
7. *Banerjee et al. (2014)*
8. *Honess and Hunter (2014)*

As described in this section, many findings from the systematic literature review are consistent with the themes which emerged from data analysis, thus the proposed theory. This provides great support and evidence in the efficacy of the proposed theory in supporting schools to embed growth mindset theory across a whole school context. The literature review highlighted the importance of including CYP in the delivery of bottom-up initiatives, providing evidence that their involvement supports effective implementation. This was not reflected in the findings of the present study, the implications for which are discussed in section 6.4.1. However, the literature review failed to reveal any studies conducted within the UK whereby schools had utilised a whole school approach to mindset theory. Therefore, the present study and proposed theory make a unique contribution to existing literature.

#### 6.2.4 Grounded Theory in Relation to Self-Determination Theory

This section will describe the basic tenets of SDT based on the research of two psychologists, Edward Deci and Richard Ryan, dominant psychologists in the field of motivation. The theory of SDT will be explored in terms of three basic psychological needs, and applied to the proposed theory.

##### 6.2.4.1 Background of Self-Determination Theory

The concept of motivation has been well researched for decades, with the development of SDT emerging from the 1970s (Deci & Ryan, 2008). Research has continued to refine SDT and develop sub-theories to provide a well-founded understanding of self-motivation. The interest in the causal factors of human



behaviour and motivation led to the proposal of Ryan and Deci's (2008) Basic Psychological Needs Theory.

Deci and Ryan (1985; 2008; Ryan & Deci, 2000) describe how humans' level of motivation is dependent on whether they are intrinsically or extrinsically motivated. It is the type and quality of motivation that influences behaviour and outcome, more so than the quantity of motivation. Intrinsic motivation is described as "doing of an activity for its inherent satisfactions rather than for some separable consequences" (Ryan & Deci, 2000, p. 73). In contrast, extrinsic motivation encourages one to act or behave in a particular way "to attain separable outcomes rather than for their inherent enjoyment" (Ryan & Deci, 2000, p. 73). Therefore, one is intrinsically motivated if engaging in an activity simply for personal satisfaction, not due to possible secondary gains, associated with extrinsic motivation. Both intrinsic and extrinsic motivation enhance behaviour, but manifest in different ways.

SDT details the innate factors which optimize intrinsic motivation in terms of three basic psychological needs:

- **Autonomy:** the freedom to act in accordance of our own interests and values, and the urge to control one's own life.
- **Competence:** the need to experience mastery, and desire to control the environment in order to know the results on one's actions.
- **Relatedness:** the need to interact and feel connected to others, and the want to experience caring for other people in order to feel a sense of belongingness. The idea that one is significant to other people.

These three psychological needs, as described by Ryan and Deci (2008) are considered to be basic, innate factors that need to be satisfied in order to enhance intrinsic motivation. They form the basis of self-motivation and serve to facilitate optimal functioning. This theory can be widely applied to different contexts and serves to provide a greater understanding of human behaviour. Within education, environments can be designed to nurture these needs to

maximise potential and possible outcomes. This theory arguably has great significance in contexts that wish to bolster passion, commitment and performance (Ryan & Deci, 2000).

#### *6.2.4.2 Self-Determination Theory in Relation to the Proposed Grounded Theory*

The three psychological needs identified from the research by Ryan and Deci (2000; 2008) are consistent with the findings from the present study, strengthening the evidence for the mechanisms in the proposed theory.

Analysis of participant responses revealed that they were intrinsically motivated to help others and promote positive outcomes for CYP. Their natural inclination to 'do good' is reflected by their decision to work in a helping profession, such as education. The factors which were intrinsically motivating for participants were their desire to **promote equal opportunities, balance the culture of education** and their tendency to **relate personally to growth mindset theory**. Within the proposed theory, '**morals and values**' encapsulates these factors, acting as the dominant intrinsic motivator for participants to adopt growth mindset practices.

To enhance the motivation of teachers adopting mindset practice, Ryan and Deci (2000) suggest that social contexts can be manipulated to foster autonomy, relatedness and competence. The proposed theory aims to promote the **autonomy** of teachers by instilling a bottom up approach to implementation, whereby staff choose to opt in, as opposed to being imposed by school leadership. Staff who volunteer to engage with mindset practice are given the freedom to explore what works best for them over an **initial trial period** in order to **develop practice over time**. The control they have to dictate their practice, contributes to meeting their need for autonomy.

The need to experience competence is accounted for within the proposed theory in two ways. Firstly, the need for mastery is achieved by **trialling practice over time**, identifying the most successful methods in the given context. Consequently, one can learn to implement mindset theory before sharing **best practice with the whole school** community. Not only does this

method build competence, but enhances intrinsic motivation through feelings of mastery. A consequence of this means that teachers can also learn what works and when, providing them of a greater understanding of the outcomes that can be achieved following any intervention. This sense of control over their environment also enhances competence and intrinsic motivation.

A sense of connectedness and belonging is necessary to meet the need described by Ryan and Deci (2000) as relatedness. The proposed theory encourages teaching staff to work collaboratively towards a shared goal (promoting positive outcomes for CYP through application of mindset theory). The **support from colleagues is valued**, and whether sharing successes or frustrations, offers a new level in which to connect with teaching staff. In working closely with CYP, the application of growth mindset provides the opportunity to promote their academic and personal development; another factor which encourages relatedness and intrinsic motivation.

### 6.3 Critical Considerations of the Current Study

The conceptual framework which informed this research was a critical realist interpretation of grounded theory methodology. From this position, research is used to understand the lived reality of human participants. Realists accept that one can only ever seek to understand reality through the perspective of others, which is open to interpretation and potential for bias. However, Willig (2013) argues that reality needs to be understood through human interpretation. According to critical realists, this is the best method for understanding phenomena within complex social processes.

In line with the ontological and epistemological position of the present study, one recognises that the relationship between the researcher and the findings of the present study can not be truly distinct. Instead, the researcher acknowledges the influence their beliefs, values and presence may have had on theory development. The reflexive stance taken by the researcher throughout the research process has contributed to the transparency of this study, therefore, reducing the potential for researcher bias. For example, the assumptions and beliefs held by the researcher prior to, and throughout this

study, are explicitly stated (section 3.7.7). Furthermore, prior knowledge of the subject area was highlighted in the initial literature review, memos were recorded and an audit trail kept, all contributing to the reflexivity of the current study.

To prevent pre-existing knowledge finding its way in to the proposed theory, and contaminating the findings of the present study, the researcher took numerous steps to ensure concepts truly emerged from the data. Firstly, coding was verified by two independent researchers on two different occasions, who both verified the accurate interpretation of each code and concept. The process of constant comparison also ensured that the participants perspectives were accurately represented, and theory was truly grounded from data. The researcher also carried out member checks, the process by which the researcher seeks verification of emerging concepts from participants, following data collection and analysis (Mertens, 2015). This contributes to the credibility of this research. See section 3.8.2 for more information, and Appendix 11 for evidence.

A strength of the present study is the grounded theory methodology utilised to research growth mindset practice, within a specific social context. It is considered to be an ideal approach to real world research, whereby the aim is to learn about complex social phenomena (Lawrence & Tar, 2013). Researchers are often open to criticism as many claim to adhere to the procedures within grounded theory, but fail to do so accurately (Hatch, 2002). The present study adopted Strauss and Corbin's (1998) interpretation of grounded theory, and adhered to the guidelines and features unique to their approach. These are described in detail in Table 3.1, and the process clearly defined throughout Chapter 3.

Lawrence and Tar (2013) state that grounded theory methodology is best utilised when applied to novel or under researched topic areas. This is true of the present study, which makes a unique contribution to growth mindset literature. It addresses gaps in research highlighted in Chapter 2, and adds to the limited knowledge base of how growth mindset is, and should be,

embedded in to UK schools, within a specific context. Furthermore, it makes a unique contribution to existing literature by exploring the key motivating factors that encourage school staff to engage with growth mindset and implement it within their work. For example, key themes around the underlying morals values and being able to relate personally to Dweck's theory did not appear within a review of the literature. The proposed theory incorporates these key themes and is designed to enhance the intrinsic motivation of participants to ensure long lasting engagement with mindset theory.

It may be argued that the proposed theory can only be used in inform application of mindset theory in secondary educational contexts, due to the weighting of secondary schools included in the sample. However, the aim of this research was not to create a theory representative of a broad population, in which to generalise across multiple contexts. Despite this, the schools included in the present study did vary in size, demographics and location. Schools varied in terms of socio-economic status, with one located in a far more affluent area compared to another of a more working class background. Some schools were of academy status and others local authority maintained, with one school pertaining to particular religious beliefs. This could provide a broad overview of participant perspectives, even if represented by a small sample size.

Strauss and Corbin (1998) explain how grounded theorists are more interested in 'explanatory power' than the ability to generalise findings. They explain that the grounded theory aims to understand what may happen in given situations and attempts to "specify the conditions that give rise to certain phenomena" (Strauss & Corbin, 1998, p. 267). For the present study, they are the mechanisms that support successful implementation of growth mindset theory in schools. A strength of this approach is its power to represent the specific context in which was researched and its ability to hold meaning and usefulness when giving it back to the participants themselves (Strauss & Corbin, 1998). Consequently, generalising findings to broader contexts is not intended, instead, adding to the knowledge of school staff and EPs in the researched LA.

It could be argued that the perspectives of only five participants in the development of a theory, is not substantial enough to be confident in the conclusions drawn from data analysis. The point at which theoretical saturation is reached is also a subjective and contentious issue within qualitative research (Mertens, 2015). Stake (2006) highlights that sampling in qualitative research often ends as a result of practical constraints such as time or funding. However, this is not a reflection of the present study.

Despite the small sample size, each interview elicited rich, detailed data conducive to grounded theory and qualitative research. The process of microanalysis used in grounded theory approaches (also known as line by line coding) resulted in a substantial number of codes. Over 700 codes were identified and included in the analysis (see Appendix 9), a far greater amount than may have emerged from a larger sample size of research utilising a different process of data analysis.

Mertens (2015) claims that saturation, and thus sample size, are defined when “a researcher makes a decision as to the adequacy of the observations on the basis of having identified the salient issues and finding that the themes and examples are repeating instead of extending” (p. 343). Although the saturation point in the present study appeared to be clear, the researcher acknowledges that one cannot ever really know if saturation has been fully reached. Evidence from saturation has been provided (see Appendix 9), whereby the number of new codes reached, is notably smaller than the other interviews, even when a new interview schedule had been created.

A limitation of the present study is its vulnerability to bias through participant social desirability. Participants were recruited through purposive sampling techniques and were reliant on their willingness to volunteer and consent to their involvement. As a result, the staff members who chose to participate may have been confident in their growth mindset practice, and motivated to share how they have implemented growth mindset. As participants were all responsible for delivering mindset theory, they may have also exaggerated or over reported the impact of their work, in order to be viewed positively. This is

the risk one takes when relying on self-reported data. The researcher reminded participants prior to each interview that their name and school would not be identifiable from the research, as an attempt to mitigate such bias. Additionally, participants were explicitly encouraged to provide honest accounts of their practice. Interview schedules were carefully framed to avoid leading questions, instead trying to obtain a balanced view by specifically asking what aspects of their practice both worked and didn't work.

The teacher perspectives alone may have posed risk of bias, as they were directly responsible for mindset practice in their school. The decision to target such individuals was taken as they were considered to be most knowledgeable about how they went about implementing mindset theory. However, it would be interesting to interview teachers who were not within the leadership team, or directly responsible for mindset implementation. Gaining the perspectives of staff who didn't choose to engage with the theory initially, may provide an even richer understanding of how to successfully alter the beliefs of both staff and pupils. The same is true of pupils themselves, who could also offer a different viewpoint.

## 6.4 Looking Ahead and Next Steps

### 6.4.1 Future Directions for Research

Carol Dweck and her colleagues have published a wealth of research into the impact of supporting CYP in education to foster a growth mindset. However, as revealed in Chapter 2, there are many shortcomings to the literature and a need for additional research. The present study aimed to explore how growth mindset theory had been implemented within schools in a LA, from the perspectives of teaching staff. In doing so, a greater understanding of what was deemed to have the biggest impact on CYP was highlighted and a theory for subsequent mindset intervention proposed.

The present study has addressed only a minor aspect of mindset application and the need for further research remains. Initially, it would be interesting to

explore the replicability of the present study, when undertaken in geographical areas made up of varying demographics. Furthermore, research in different educational settings and provisions could be explored to see if similar conclusions would be drawn. It may be beneficial to focus on alternative provisions such as pupil referral units and specialist behaviour settings, as these CYP may be more vulnerable to academic failure.

The proposed theory itself could form the basis of subsequent research, scrutinised to identify the strengths and weaknesses of its application. The theory could also be tested in its wider use, as a general method of whole school implementation, disassociated with growth mindset. Drawing upon findings in the literature review (Bonell et al., 2010), future research could investigate the impact of involving CYP in the instilling growth mindset within their own schools. They could become involved in the initial trial period of implementation when using the proposed theory as a framework for enhancing growth mindsets.

The analysis of the present study failed to draw conclusions regarding the effectiveness and objective impact of mindset theory in the schools that partook in this research. Despite participant claims that their mindset application elicit positive outcomes, they consistently reported to find measuring the impact of their practice challenging. This could form the basis of future research, evaluating methods of evaluating the effectiveness of intervention, controlling for additional variables that may influence the overall outcomes. This would provide a clearer, more precise understanding of the impact of instilling growth mindsets.

An additional area of research could focus on parental involvement in cultivating beliefs about intelligence. Participants in the present study failed to draw clear conclusions on the involvement or impact of parents when reflecting on their practice. Research described in Chapter 2 and Chapter 4 detailed two studies on the impact of parental involvement, however, neither were conducted in the UK and one focused solely on whole school approaches to reducing bullying



(Andersen & Nielson, 2016; Blank et al., 2010). This highlights the need for a greater exploration of the role parents play in endorsing mindset beliefs.

The ability to influence the mindset and beliefs of CYP with special educational needs remains an under researched area (see Chapter 2). Statistics consistently show that children with identified additional needs fail to achieve academic success in line with peers, mindset theory may provide a means of reducing this attainment gap (Andrews, Robertson & Hutchinson, 2017). Further research is needed to explore the potential impact of altering beliefs regarding intelligence, of CYP with special educational needs.

Finally, as discussed in section 6.3, further research in to the experiences of teachers who are not directly involved in mindset application, will add to the findings of the present study, and complement this research. Pupils themselves too would add a valuable insight into what practice resonated with them and how this could be used to inform future practice.

#### 6.4.2 Implications for Practice

The present study and the proposed grounded theory has direct implications for schools within the LA in which this research was conducted. The theory provides school staff and leadership with clear, researched guidance on how to implement growth mindset theory in their settings. It provides them with a structure to follow and forms the basis of all mindset intervention. Furthermore, the findings from the present study and psychological underpinning of the proposed theory (see section 6.2.4.2) provide evidence for its use.

Participants in the present study reported to have experienced uncertainty due to the lack of guidance of how to implement Dweck's theory. The theory presented here addresses the issues experienced in initiating mindset intervention, and provides a means to overcome potential barriers to implementation. It is hoped that in supporting schools to adopt growth mindset theory, it will have positive ramifications for both staff and pupils within the setting.

A key finding from the present study relates the misconception of growth mindset theory, experienced by many staff. This highlighted the need for training in Carol Dweck's work, to ensure school staff truly understand the importance of the process of learning, as opposed to just the outcome. Teachers may need additional support to shift their focus to the mastery of skills, instead of viewing achievement in terms of grades and attainment. This may have further implications for both school leadership and the EP profession. Firstly, teachers could assess student work by giving formative feedback based on skill based criteria. For example, levels (1-9) could be replaced with mastery-based learning objectives. This would provide more descriptive and meaningful feedback for both CYP and parents, and reduce the likelihood of fear of failure, associated with levels. This could be an anxiety provoking change for schools, moving away from a system which has been established within education for years. However, it is an opportunity for positive change, and one which EPs could play a crucial, facilitative role in, alongside school leadership.

The grounded theory also has implications for educational psychologists and contributes to the wider context of EPSs. It equips psychologists with a tool they can utilise when working systemically with schools or educational settings. They can work directly with school staff to implement the theory or signpost leadership to the present study to inform their own practice. As far as the literature search revealed, the proposed theory makes a unique contribution to the understanding of how growth mindset is embedded in schools in the UK.

#### 6.4.3 Dissemination Strategy

As described Strauss and Corbin (1998), the aim of grounded theory research is not to generalise the theory to wider populations, but to provide explanatory power for the people in the system in which was researched. It is therefore important that the findings and theory from this research are adequately and appropriately distributed to the schools and staff that participated in the research, but also the LA and EPS relevant to this study.

To disseminate the findings to the EPS in which the researcher is currently placed, the proposed theory will be presented at a service day. This provides the ideal opportunity to share what has been learned from this process with all the EPs within the LA. It is hoped the findings can inform their practice and provide them with greater knowledge of the topic under investigation.

The researcher will contact all participants and offer the opportunity to meet and feedback the findings and proposed theory to those at the heart of this research. It is hoped that the presentation of these findings will not only be informative, but reassuring and motivating to the staff members that kindly gave up their time to participate in this research. Finally, through the dissemination of the proposed theory, the goal is to support schools to effectively enhance and alter the mindset of CYP so that they display an enjoyment, commitment and resilience in their attitude to learning.

### 6.5 Personal Reflections of the Research Process.

Having not been involved in formal research for a significant amount of time, the task of completing doctoral level research was undeniably daunting. The only prior experience that could be drawn upon, was an undergraduate dissertation of a much smaller scale. It was hoped that in completing the present study, the researcher would not only become familiar with real world research, but make a genuine contribution to a topic which was both motivating and of interest.

Although this journey has had its challenges, with varying degrees of motivation being experienced throughout the process, the topic of growth mindset remained appealing and captivating. It was interesting to note that many of the findings resonated personally with the researcher, resulting in a greater awareness of how and why the work of Carol Dweck became the chosen topic of research. Firstly, the researcher could apply mindset theory to personal experience, identifying times when growth or fixed mindsets were adopted and influenced subsequent behaviour. Consistent with the findings of the present study, the researcher was motivated to delve into mindset theory as a means of

improving outcomes for CYP. Personal beliefs associated with social justice became pertinent throughout the research process.

Throughout this process, the researcher became increasingly aware of their own learning style and approach to research. The process of data analysis was challenging, finding the subjective nature of coding and interpretation difficult to master. This phase of the research took significantly longer to complete than any other aspect of the study, reflecting the frustration experienced. It became apparent that a more objective, prescribed approach was more conducive to the nature of the researcher, as opposed to the messy nature of qualitative data. However, coding verified by both a colleague and supervisor not only contributed to the trustworthiness of the findings, but had a reassuring influence.

Finally, a key learning point from this process relates to the presence of Carol Dweck and how dominant her theory and research has become. It is important that research continues to be undertaken within this field to ensure that the psychology underpinning Dweck's work is not lost, and that such popularised theories do not fall victim to model drift or becoming a short-lived fad. Instead, research should continue to inform educational settings how best to adapt growth mindset to ensure its lasting effectiveness.

## 6.6 Chapter Summary

To conclude, this chapter has summarised the findings of the present study in relation to the initial research questions, pre-existing literature and psychological theory. The proposed theory has been examined in detail, with the strengths and limitations of the research methodology described. It is hoped that in doing so, readers prescribe to the trustworthiness of the present study, and school staff have confidence in its findings. Although the present study does not address all issues in mindset literature, it strived to lead the way for future research and school based mindset application.

## 6.7 Concluding Comment

“Think about your hero. Do you think of this person as someone with extraordinary abilities who achieved with little effort? Now go find out the truth. Find out the tremendous effort that went into their accomplishment—and admire them more.” (Dweck, 2008, p. 121)

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## Appendices

### Appendix 1. Ethics Approval Letter.

# School of Psychology Research Ethics Committee

## NOTICE OF ETHICS REVIEW DECISION

For research involving human participants  
BSc/MSc/MA/Professional Doctorates

**REVIEWER:** Dr Florentia Hadjiefthyvoulou

**SUPERVISOR:** Dr Janet Rowley

Professional Doctorate in Child and Educational Psychology

Hayley Vingerhoets

**TITLE OF PROPOSED STUDY:** An Exploration of Growth Mindset Practice in Schools within Suffolk

### **DECISION OPTIONS:**

1. **APPROVED:** Ethics approval for the above named research study has been granted from the date of approval (see end of this notice) to the date it is submitted for assessment/examination.
2. **APPROVED, BUT MINOR AMENDMENTS ARE REQUIRED BEFORE THE RESEARCH COMMENCES** (see Minor Amendments box below): In this circumstance, re-submission of an ethics application is not required but the student must confirm with their supervisor that all minor amendments have been made before the research commences. Students are to do this by filling in the confirmation box below when all amendments have been attended to and emailing a copy of this decision notice to her/his supervisor for their records. The supervisor will then forward the student's confirmation to the School for its records.
3. **NOT APPROVED, MAJOR AMENDMENTS AND RE-SUBMISSION REQUIRED** (see Major Amendments box below): In this circumstance, a revised

ethics application must be submitted and approved before any research takes place. The revised application will be reviewed by the same reviewer. If in doubt, students should ask their supervisor for support in revising their ethics application.

**DECISION ON THE ABOVE-NAMED PROPOSED RESEARCH STUDY**

*(Please indicate the decision according to one of the 3 options above)*

Approved

**Minor amendments required** *(for reviewer):*

Just a couple of suggestions:

- there are some typos/errors in the information sheet so proof read them before handing them out to participants
- also consider including your supervisor's contact details and remove your personal contact details from all participants facing documents (i.e. your mobile number)
- Provide some more information on the participant's right to withdraw during the study or withdraw their data at a later stage if they wish (mechanism for doing so is not very clear) in the information sheet

**Major amendments required** *(for reviewer):*

**ASSESSMENT OF RISK TO RESEARCHER** *(for reviewer)*

If the proposed research could expose the researcher to any of kind of emotional, physical or health and safety hazard? Please rate the degree of risk:

☐

HIGH

☒

MEDIUM

☐

LOW

*Reviewer comments in relation to researcher risk (if any):*

**Reviewer** (*Typed name to act as signature*): Dr Florentia Hadjiefthyvoulou

**Date:** 15/2/17

*This reviewer has assessed the ethics application for the named research study on behalf of the School of Psychology Research Ethics Committee*

**Confirmation of making the above minor amendments** (*for students*):

I have noted and made all the required minor amendments, as stated above, before starting my research and collecting data.

Student's name (*Typed name to act as signature*): Hayley Vingerhoets

Student number: u1528159

Date: 02.03.2017

*(Please submit a copy of this decision letter to your supervisor with this box completed, if minor amendments to your ethics application are required)*

**PLEASE NOTE:**

\*For the researcher and participants involved in the above named study to be covered by UEL's insurance and indemnity policy, prior ethics approval from the School of Psychology (acting on behalf of the UEL Research Ethics Committee), and confirmation from students where minor amendments were required, must be obtained before any research takes place.

\*For the researcher and participants involved in the above named study to be covered by UEL's insurance and indemnity policy, travel approval from UEL (not the School of Psychology) must be gained if a researcher intends to travel overseas to collect data, even if this involves the researcher travelling to his/her home country to conduct the research. Application details can be found here: <http://www.uel.ac.uk/gradschool/ethics/fieldwork/>



## Appendix 2. Participant Information Sheet.

### **Research Information Sheet**

#### **A Research Project Investigating Growth Mindset Practices in Suffolk Schools**

##### **Introduction**

The aim of this study is to gain a greater understanding of Growth Mindset practice in schools, to determine how schools are implementing growth mindset and what you perceive to be best practice. If you are a school that promotes growth mindset I would like to invite you to participate in this study.

##### **Why am I doing the project?**

This research contributes towards my thesis, for my three-year doctorate in Child and Educational Psychology. I hope that upon completion of this research, I will have generated a theory which can contribute to both schools and the Educational Psychology profession supporting the implementation of growth mindset in schools.

##### **Who can take part and what will they have to do?**

Participants required for this research must be directly involved in implementing growth mindset in your school. Ideally, they would have coordinated the delivery of such initiatives. The employee must have worked at the school for the a minimum of one full academic year. The participant would be asked to:

1. Meet with myself at a time and place convenient for them.
2. Participate in a one to one interview with myself. This is expected to last no longer than an hour and will be audiotaped.
3. When the research is completed the participant will be offered the chance to meet again if they wish to know the findings of the research.

##### **How much of your time will participation involve?**

One interview lasting no more than one hour.

##### **Will your participation in the project remain confidential?**

If you agree to participate in this research your name and school will remain strictly confidential. I will not use your name on the interview transcript and it will not be published. The answers you provide will be used for the purpose

of this study only. I will use the answers to look for themes amongst responses in order to draw conclusions from the interviews. All stored data will be kept electronically on an encrypted laptop and password protected. The findings from the research will be shared with third parties, but you will not be identifiable from this information.

### **What are the advantages of taking part?**

Contributing to research can be exciting. You may enjoy the interview and find it useful to talk through some of your practice. In doing so, I hope to create a theory regarding growth mindset in schools that can be used to inform future practice. You will also be offered the opportunity to meet with me on completion of the research so that I can share the results with you.

### **Are there any disadvantages of taking part?**

There are no known disadvantages of taking part, other than requiring an hour of your time.

### **Do you have to take part in the study?**

Your participation in this research is voluntary. You are under no obligation to take part. Your school has been invited to participate as you are located within the local authority in which I am conducting the research. If you are interested in participating you have the right to withdraw (no longer take part) from the study at any time by emailing either myself or Janet Rowley using the addresses below. In this circumstance, any data collected would not be included in the research up until the point of data analysis and audiotapes will be destroyed.

If you do not wish to take part, you are not required to take any further action and you will not be contacted again.

### **What happens now?**

If you would like to participate in this study, please contact me using the details below and we can arrange a date to meet. At this point, you will be asked to complete a formal written consent form. If you do not wish to participate no further action is required.

Thank you for taking the time to read this information sheet.

**This research has been granted ethical approval by the University of East London Research Ethics Committee (UREC).**

#### Researcher Contact Details:

Hayley Vingerhoets (Trainee Educational Psychologist)

Email: [REDACTED]

#### Research Supervisor:

Janet Rowley (Director of Studies, University of East London)

Email: [J.E.Rowley@uel.ac.uk](mailto:J.E.Rowley@uel.ac.uk)

### Appendix 3. Participant formal consent form for adults.

<p style="text-align: center;"><u>Participant Consent Form</u></p> <p><b>Title of the study:</b> An exploration of Growth Mindset practices in schools within Suffolk</p> <p><b>Researcher:</b> Hayley Vingerhoets</p> <ul style="list-style-type: none"><li>▪ I confirm that I have read and understood the information sheet for the above project and I understand what the study entails and the procedures have been explained to me.</li><li>▪ I have been provided with the opportunity to ask questions about the research and my involvement and these have been answered.</li><li>▪ I understand that my participation is voluntary and that I am free to withdraw from the project at any time, without having to provide a reason. If I exercise my right to withdraw and I don't want my data to be used, any data which have been collected will be destroyed.</li><li>▪ I understand that interviews will be audio-recorded but this information will remain confidential and no information that identifies me will be made publicly available. I understand that my name or school will not be used in any report, publication or presentation.</li><li>▪ I am aware that the anonymised findings from the research may be shared with third parties.</li><li>▪ I hereby freely and fully consent to take part in this study on growth mindset which I fully understand.</li></ul> <p>Participant Signature.....</p> <p>Participant Name (Please PRINT) .....</p> <p>Date.....</p> <p>Researcher Signature.....</p> <p>Researcher Name (Please PRINT) .....</p>
--

Head Teacher Consent Form

**Title of the study:** An exploration of Growth Mindset practices in schools within Suffolk

**Researcher:** Hayley Vingerhoets

- I confirm that I have read and understood the information sheet for the above project and I understand what the study entails and the procedures have been explained to me.
- I have been provided with the opportunity to ask questions about the research and my involvement and these have been answered.
- I understand that interviews will be audio-recorded but this information will remain confidential and no information that identifies the school will be made publicly available. I understand that my name or school will not be used in any report, publication or presentation.
- I am aware that the anonymised findings from the research may be shared with third parties.
- I hereby freely and fully consent to this research taking place within my school. I understand and fully consent to members of staff or pupils within my school participating in this research.

Head Teacher

Signature.....

Head Teacher Name (Please PRINT)

.....

Date.....

Researcher

Signature.....

Researcher Name (Please PRINT)

.....

## Appendix 4. Interview Schedules

### Interview Schedule

#### **Initial Introduction**

Thank you for taking part in this interview, I'm looking forward to hearing all about growth mindset in your school. Before we start, I just want to remind you that you will remain completely anonymous and your name will not be kept on any records of the interview. The interview should take no longer than an hour, but you can withdraw from this interview at any time.

#### **Warm up question:**

1. Tell me a little about your role and responsibilities in school

#### **Main Body of Interview:**

2. How did you first hear of growth mindset?
  - How long ago
  - Initial thoughts/first impressions
3. What was it that made you decide to implement growth mindset in school?
  - Pros/Cons
  - Potential barriers
  - Any additional considerations
  - Desired outcomes
4. Tell me how you have implemented growth mindset in school?
  - Preparation e.g. Training, resources required
  - Staff, children, parents
  - Whole school, small group, individually
  - Length of time
  - Who has been involved in the implementation
5. Do you think these practices have had any impact in school? If so, what impact have you noticed?
  - On staff, children, parents
  - Any formal measurements taken?
  - What do you perceive as being the most useful/least useful?
6. If you were to implement growth mindset again next academic year, would you do anything differently? If so, why?
7. Is there anything that you can think of that would make your growth mindset practices better?

#### **Cool-off question:**

8. Is there anything else you would like to add about growth mindset practices in your school that has not been covered in this interview?

## Interview Schedule (2)

### **Initial Introduction**

Thank you for taking part in this interview, I'm looking forward to hearing all about growth mindset in your school. Before we start, I just want to remind you that you will remain completely anonymous and your name will not be kept on any records of the interview. The interview should take no longer than an hour, but you can withdraw from this interview at any time.

### **Warm up question:**

1. Tell me a little about your role and responsibilities in school

### **Main Body of Interview:**

2. How did you first hear of growth mindset?
  - How long ago
  - Initial thoughts/first impressions
3. What was it that made you decide to implement growth mindset in school?
  - Pros/Cons
  - Potential barriers/additional considerations
  - Desired outcomes
4. Tell me how you have implemented growth mindset in school?
  - Staff, children, parents
  - Whole school, small group, individually
  - Length of time
  - Implicit or explicit teaching of theory – why?
5. Do you think your students are explicitly aware of growth mindset theory?
  - Are your students aware of the term growth mindset?
  - If I were to ask what a growth mindset is, would they be able to say?
  - Are they aware of the brain processes involved in learning?
  - If I were to ask pupils what they need to do to progress with their learning, what do you think they would say? Would growth mindset be evident in their answers?
6. Do you think these practices have had any impact in school? If so, what impact have you noticed?
  - On staff, children, parents
  - Any formal measurements taken?
  - What do you perceive as being the most useful/least useful?
  - Has implementing growth mindset implicitly/explicitly been helpful?
7. If you were to implement growth mindset again next academic year, would you do anything differently? If so, why?
8. Is there anything that you can think of that would make your growth mindset practices better?

**Cool-off question:**

9. Is there anything else you would like to add about growth mindset practices in your school that has not been covered in this interview?

## Appendix 5: Participant Debrief

**Debrief:**

Thank you for giving up your time to participate in this research, it has been really useful for me. Please be assured that the interview will only be used to highlight themes that occur and that you, or your school will not be identifiable from the findings of this research. My contact details can be found on the information sheet provided. Once my research is complete I will be in contact to offer you the opportunity to hear the findings from this research, if that is something you would be interested in. Do you have any questions you would like to ask?



## Appendix 6. Example of Interview Transcript

H – So, if we just start, are you ok to tell me a little bit about your roles and responsibilities in school?

I - Yeah, so I'm deputy head teacher and I'm in charge of the curriculum and teaching and learning and also staff CPD, so professional development.

H – Ok, and is it the growth mindset that falls under the CPD element?

I – Yeah, so within our school improvement plan ummm and in terms of the teaching and learning focus, growth mindsets is one of 6 things we've been focusing on in the last 18 months.

H – Ok, fabulous. Thank you. So how did you first hear about growth mindset?

I – Ummm It came, it came, I'd read the Carol Dweck stuff and I go on twitter quite a lot so lots of people were talking about it on twitter umm and I read the book because I think it's always important to tread the book rather than just read someone else's version of it umm and then I was doing some work with our maths department who had been on a course run by a lady called J who is very interested on the impact of growth mindsets in maths because in maths there's obviously a lot of, in maths there's a big feeling that your either good at maths or your not and umm J's work was trying to unpick that and to actually get across to pupils that learning is a process and it's good to make mistakes. And also I think with umm with maths, there's quite a lot of people who have always been good at maths can develop a fixed mindset and then as soon as they start to get things wrong or struggle they really really struggle, you know, with the sense that maths was all about right and wrong answers so the growth mindsets, a big part of the action research group that we formed was made up of maths teachers, initially.

H – (1.55mins) Ok, lovely. So how long ago did you first become, how long ago was that?

I – Yeah, 18 months ago. Well I suppose 2 years ago we identified it (growth mindset) as something that would really help our students and staff umm so we had a launch of it at a professional development day and then we formed an action research group. So at this school for each of our teaching and learning targets we have an action research group that reads relevant articles, does research, visits other schools and then umm gets together as a group, agrees to trial ideas, shares how they're going, shares the successes, shares any problems and issues, and the group meets very informally for 45 minutes over coffee, cakes, biscuits either at the end of the school day or over lunch time and discusses how things are going so it's very much umm I suppose, the approaching was kind like a bottom up initiative. We trialled things for a year and then we fed back to the whole staff at teaching learning group meetings and then eventually on a PD day.

## Appendix 7. Record of Memos

Date	Stage of Research	Memo
26.03.17	Immediately after interview one	Participant was friendly, open, honest and seemed passionate about her work.
26.03.17	Immediately after interview one	Concerned the interview didn't elicit rich data required for grounded theory. May be due to circumstances, as growth mindset is a new initiative for the school.
26.03.17	Immediately after interview one	Researcher surprised the intervention was only delivered to one year group, its not what the researcher expected.
27.03.17	Following first interview	Impact alludes to behaviour/attitude – not actual attainment
27.03.17	Following first interview	Initiative working in isolation
18.04.17	Transcribing interview one	Quite a personal experience, is that the appeal? Participant account resonates with researchers own experiences.
18.04.17	Transcribing interview one	Realisation of researchers pre-conceived idea that growth mindset would be a whole school approach.
13.05.17	Interview one – open coding	Potential code 'simple idea'. Aware that researcher thought this about growth mindset theory too. Could this be potential for bias? Researcher to remain reflexive.
13.05.17	Interview one – open coding	Potential for initial theme – something around setting the tone/culture and expectations at the start of the academic year. Using growth mindset to dot that.
13.05.17	Interview one – open coding	Participant newly adopted growth mindset. It appeared that she realised throughout the interview that much more could be done to promote growth mindset theory. She appeared to feel ill-prepared?
13.05.17	Interview one – open coding	Participant appears to view mindset as a classroom based initiative, not so much of an ethos.
13.05.17	Interview one – open coding	Next interview could ask more about impact and what the ideal would look like. Look for whole school implementation in next school to compare?
16.05.17	Following completion of open coding of interview one	Coding resulted in 134 initial open codes. Much more than anticipated, negating researchers previous concerns that the first interview didn't elicit enough data.

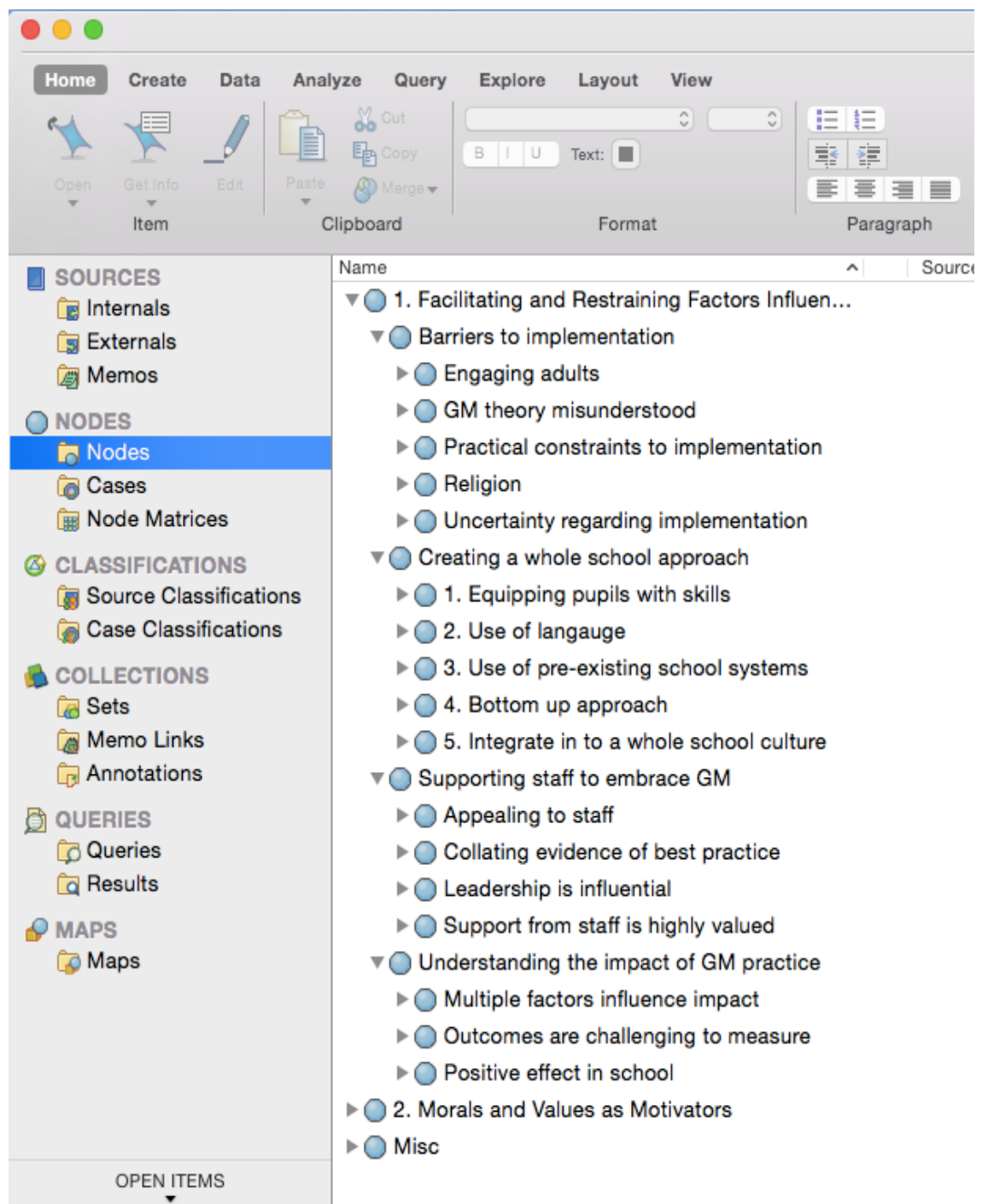
21.06.17	Immediately after interview two	Questions over participants understanding or interpretation of growth mindset. Theory applied loosely?
21.06.17	Immediately after interview two	Interview was very detailed, provided a great deal of information.
21.06.17	Immediately after interview two	Focus of her intervention appeared to be to improve attainment and well-being.
21.06.17	Immediately after interview two	Surprised at how differently growth mindset has been interpreted and applied compared with first interview.
21.06.17	Immediately after interview two	Participant appeared quite driven by performance and OFSTED.
23.06.17	Following interview two	Researcher felt a sense of disappointment, interview two wasn't what was hoped for or expected.
23.06.17	Following interview two	Viewed growth mindset as raising aspirations and preparing for future.
23.06.17	Following interview two	Researcher has a sense that the school has done more to embed growth mindset than the participant may be aware of.
22.06.17	Transcribing interview two	Some aspects of implementation matched researchers expectations, e.g. language.
22.06.17	Transcribing interview two	There doesn't appear to be any whole school implementation, maybe they have but participant unsure of what?
22.06.17	Transcribing interview two	Participant appears personally invested in the group intervention as she set it up and invested time/effort in to it. Bias? She will want it to be viewed positively.
29.06.17	Open coding of interview two	Focus on GCSE results and attainment despite participant saying that it is not just about academia – contradiction?
29.06.17	Open coding of interview two – beginning of axial coding	Similarity between both interviews, started thinking of whole school approaches ended up with a narrower focus. Why? Didn't know how?
30.06.17	Reflecting on interview two	Potential model drift?
30.06.17	Reflecting on interview two	Focus very academic, participant placed emphasis on teaching learning skills – links to Dweck's Brainology?
30.06.17	Reflecting on interview two	Issues around social justice seemed to come up a few times, participant appeared to struggle with that. Possible conflict between her personal values and the schools priorities?
30.06.17	Reflecting on interview two	Implementation was embedded into staff structure, used key staff in school to promote

		intervention. Seemed to be an efficient way of disseminating theory.
30.06.17	Reflecting on interview two	Very different approaches between the two schools so far. Interview one was much more explicit teaching of the theory. Interview two interpreted it very differently, more about teaching pupils skills.
30.06.17	Reflecting on interview two	Both interviews referenced Carol Dweck, as opposed to theories of intelligence. Consistent with my initial assumptions.
05.07.17	Immediately following interview three	Participant appears to have a good understanding of mindset theory, really gets it.
05.07.17	Immediately following interview three	The schools implementation seems thorough, across pupils, parents and teachers.
05.07.17	Immediately following interview three	Researcher was impressed with participants knowledge, drive and passion.
05.07.17	Immediately following interview three	Use of research action group makes sense, overcomes barrier of convincing staff?
05.07.17	Immediately following interview three	More focus on using language to instill growth mindsets, similar to interview one.
06.07.17	Following interview three	Potential theme keeps reoccurring – misconception of theory by some staff. Same as interview two. Training needs to be carefully delivered to ensure right message.
06.07.17	Following interview three	Potential theme 'barrier' – getting all staff on board?
06.07.17	Following interview three	Two out of three participants so far have spoken about showing staff evidence, modelling and doing it themselves.
06.07.17	Following interview three	Participant driven by her personal interest/investment about her son playing tennis. Links to mindset/success. Potential theme?
07.07.17	Immediately following interview four	Religion was mentioned for the first time, very interesting aspect which the researcher had not anticipated.
07.07.17	Immediately following interview four	Very passionate, participant valued having a personal connection to the theory. She encouraged staff to do the same which was interesting – links to intrinsic motivation?
07.07.17	Immediately following interview four	Participant appeared to view mindset as a culture.

07.07.17	Immediately following interview four	Participant spoke about requesting practical ways to implement mindset within classrooms when an outside trainer came to the school, yet she talks about mindset as a culture – contradiction?
07.07.17	Immediately following interview four	Another participant who went out and researched mindset independently, similar to other interviews. One person was the drive behind it.
08.07.17	Reflecting on interview four	Participant shared strong views about equal opportunities for all and removing bias. This appeared to be a big motivator for her to implement mindset theory.
08.07.17	Reflecting on interview four	Participant appeared to buy into theory 100%. Most other participants so far mention a 'ceiling' point in ability, she doesn't. It was interesting to hear her views. Researcher consequently reflected on her own level of commitment to theory.
09.07.17	General reflection following four interviews	A number of participants report how growth mindset is applied to develop the whole pupil, not just their learning and attainment. However, exam results and grades are often mentioned.
15.09.17	Revisiting coding	Colleagues working collaboratively, peer support important?
30.09.17	Reflections on data analysis	Not a great deal of overlap between interviews one and two, as one was primary aimed at a whole year group and the other secondary and focused on a targeted group.
30.09.17	Reflections on data analysis	Two themes emerging; social/emotional aspects of implementation versus an academic focus.
30.09.17	Reflections on data analysis	Future direction of interviews, possibly look into personal beliefs of participants. Also value in whether the theory is taught explicitly or not? Would pupils have heard of the term 'growth mindset'?
11.10.17	Coding of four interviews	Implicit v explicit application?
30.10.17	Coding of four interviews	Possible higher order codes link to social justice and participant's morals and values. Links to motivation and aspirations?
30.10.17	Coding of four interviews	Is a need for social justice driving participants to endorse mindset theory? Are they just trying to meet the needs of their pupils?
30.10.17	Coding of four interviews	Is my theory a value based theory?

30.10.17	Coding of four interviews	One theme 'techniques to implementation' needs breaking down? Too clunky?
30.10.17	Coding of four interviews	Am I noticing themes emerge or developing theory – overlapped?
30.10.17	Coding of four interviews	Still questioning how schools are delivering mindset work, is it explicitly taught? Focus on this in next interview.
30.10.17	Coding of four interviews	Primary school, although some similarities, appears to be an outlier, continue with secondary schools?
31.10.17	Coding of four interviews	More barriers to implementation than anticipated.
31.10.17	Coding of four interviews	Theory appears simple, but there's more to it than meets the eye. Need to really think about factors to implementation.
09.11.17	Immediately following interview five	No real surprises, very similar to previous interviews. Feels like saturation.
17.11.17	Finalising data analysis and coding	Is there a conflict between balancing academic and personal growth of pupils?
23.11.17	Finalising data analysis and coding	Specific tools used in implementation appear to become less and less important as the research went on.
12.01.18	Finalising data analysis and coding	Number of links between codes that researcher needs to address in write up.

## Appendix 8. Evidence of Final Coding Structure.



The screenshot shows a software application window with a menu bar at the top containing: Home, Create, Data, Analyze, Query, Explore, Layout, and View. Below the menu bar is a toolbar with icons for Open, Get Info, Edit, Paste, Merge, Cut, Copy, and Format. The Format section includes buttons for Bold (B), Italic (I), Underline (U), and a Text color selector. To the right of the toolbar are Paragraph formatting options.

The left sidebar is organized into several sections:

- SOURCES**
  - Internals
  - Externals
  - Memos
- NODES** (highlighted)
  - Nodes
  - Cases
  - Node Matrices
- CLASSIFICATIONS**
  - Source Classifications
  - Case Classifications
- COLLECTIONS**
  - Sets
  - Memo Links
  - Annotations
- QUERIES**
  - Queries
  - Results
- MAPS**
  - Maps

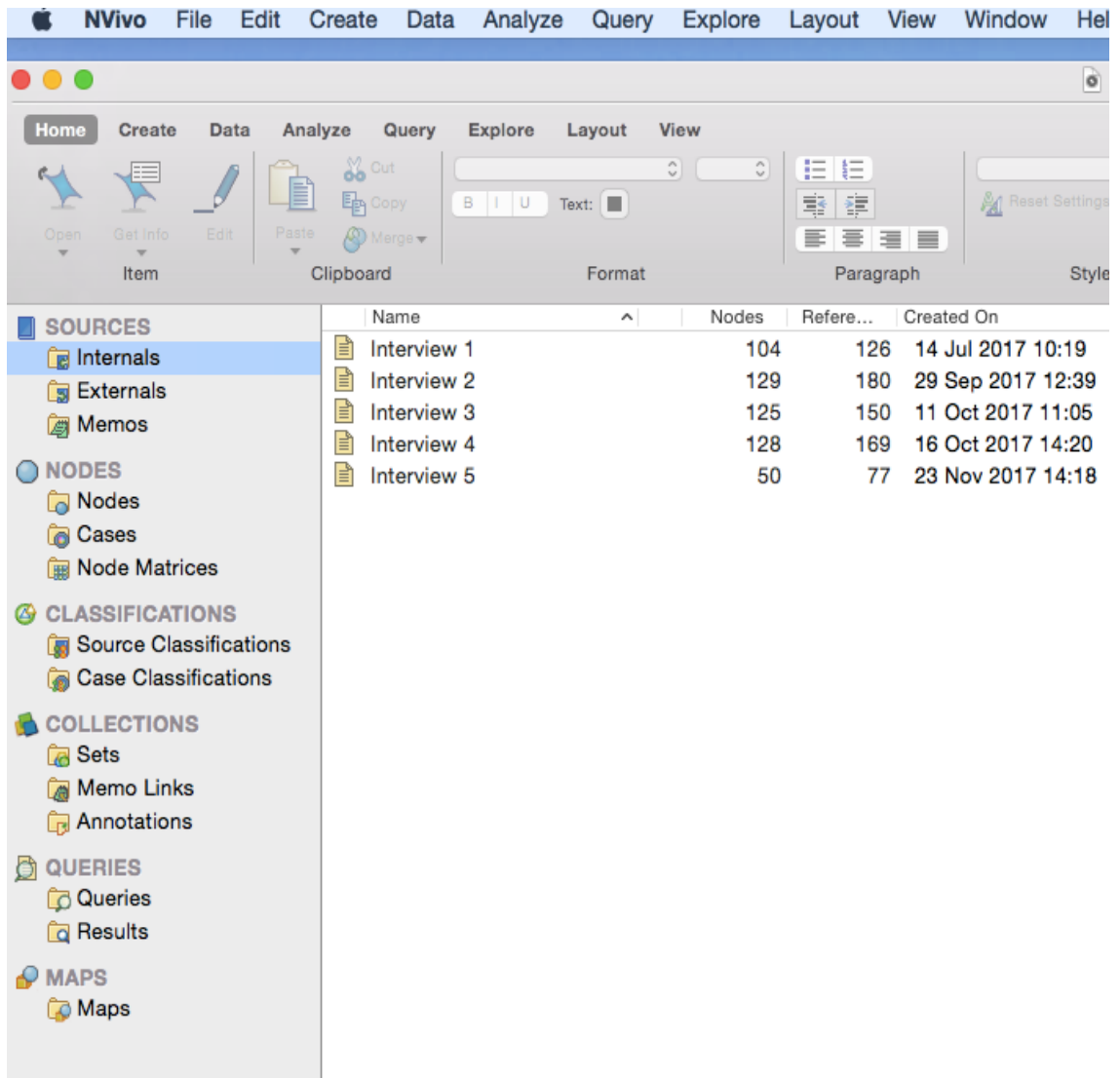
At the bottom of the sidebar is a button labeled "OPEN ITEMS".

The main content area on the right is titled "Name" and displays a hierarchical list of items:

- ▶ 1. Facilitating and Restraining Factors Influ...
- ▼ 2. Morals and Values as Motivators
  - ▼ Meeting the academic and developmental...
    - ▶ 1. Attainment and attitude to learning
    - ▶ 2. Aspirations and access to higher edu...
    - ▶ 3. Balancing the culture of education
    - ▶ 4. Independence
    - ▶ 5. Resilience and fear of failure
  - ▼ Personal Beliefs
    - ▶ Equal opportunities and the impact of s...
    - ▶ Interpretation and commitment to theory
    - ▶ Linked to personal experiences
- ▼ Misc
  - Collaboration of different theories
  - External trainer holds more weight with staff
  - Helpful for staff to have a range of languag...
  - Involve parents in future
  - No parental involvement
  - No targeted intervention
  - No whole school implementation
  - Revisiting theory throughout year
  - Take control of training to pupils
  - Unsure of name of GM
  - Used on a national level



## Appendix 9. Evidence of Code Quantity and Saturation



The screenshot displays the NVivo software interface. The top menu bar includes options like File, Edit, Create, Data, Analyze, Query, Explore, Layout, View, Window, and Help. Below the menu is a toolbar with icons for various functions such as Open, Get Info, Edit, Paste, Cut, Copy, Merge, and Format. The main workspace is divided into a left sidebar and a central table.

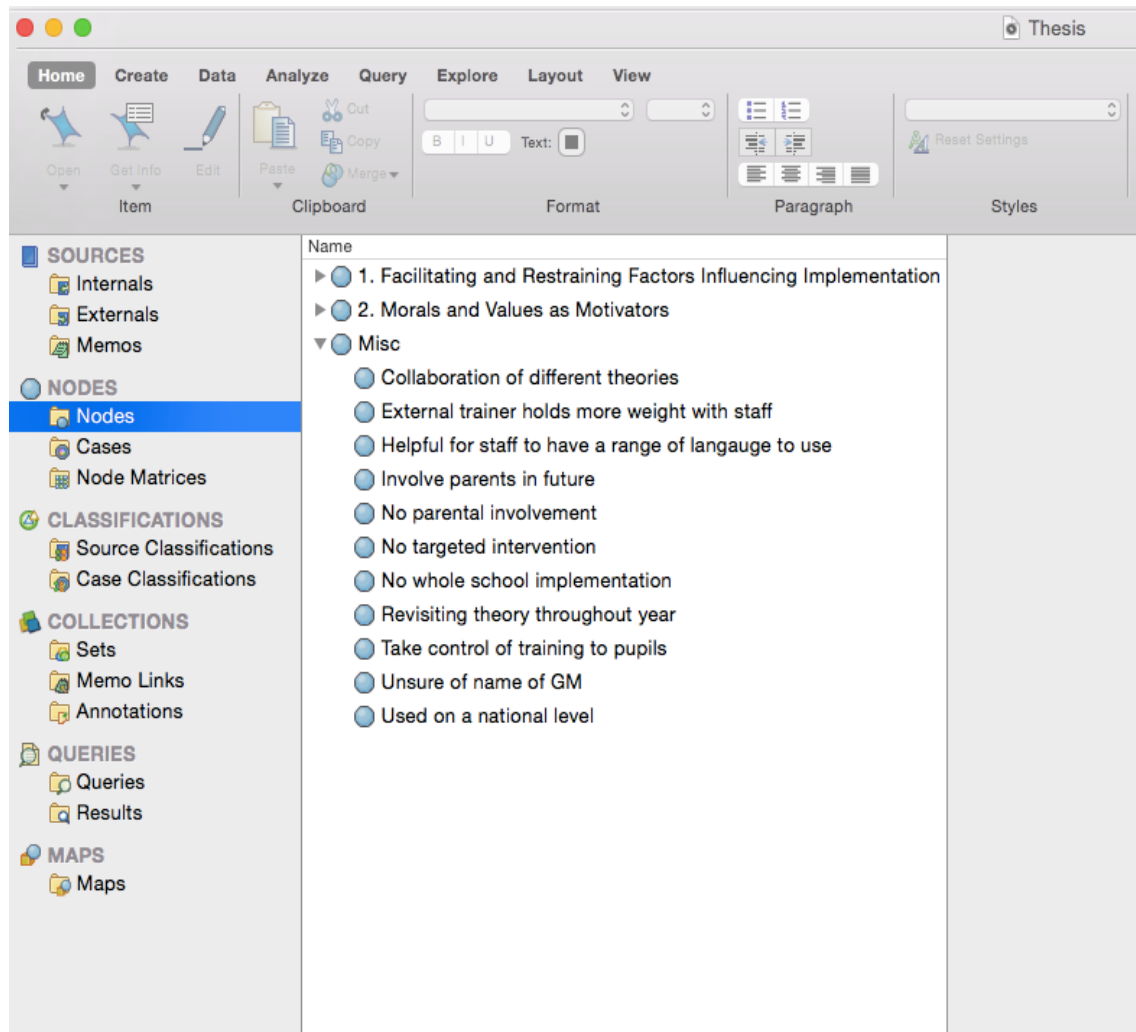
The left sidebar contains a tree view with the following categories and items:

- SOURCES**
  - Internals
  - Externals
  - Memos
- NODES**
  - Nodes
  - Cases
  - Node Matrices
- CLASSIFICATIONS**
  - Source Classifications
  - Case Classifications
- COLLECTIONS**
  - Sets
  - Memo Links
  - Annotations
- QUERIES**
  - Queries
  - Results
- MAPS**
  - Maps

The central table displays the following data:

Name	Nodes	Refere...	Created On
Interview 1	104	126	14 Jul 2017 10:19
Interview 2	129	180	29 Sep 2017 12:39
Interview 3	125	150	11 Oct 2017 11:05
Interview 4	128	169	16 Oct 2017 14:20
Interview 5	50	77	23 Nov 2017 14:18

## Appendix 10. Miscellaneous Codes



## Appendix 11. Evidence of Member Checks

### 11.1 Initial Email Sent

Dear All,

I have attached a copy of the themes that have emerged from the research you participated in. It would be really helpful if you were able to comment on the following:

- 1 Can you relate your practice of growth mindset to the themes?
- 2 Are there any themes you do not agree with or that do not make sense?
- 3 Do you feel there are any themes missing from the analysis?

This only needs to be **a short, quick email response** and would be greatly appreciated.

Please note, the themes in blue represent the highest level of abstraction, with the themes in grey representing themes most closely related to your responses. I hope you find this interesting and that the themes represent your experiences.

Many thanks,

**Hayley Vingerhoets**  
Trainee Educational Psychologist

### 11.2 Reply from Participant

**From:** [REDACTED] **Sent:** 26 February 2018 10:11 **To:** Hayley Vingerhoets  
<[Hayley.Vingerhoets@\[REDACTED\]](mailto:Hayley.Vingerhoets@[REDACTED])> **Subject:** RE: Growth Mindset Research

Dear Hayley,

Just a quick note to say that the structure and themes do make complete sense from my point of view. They provide a very clear summary.

Kind regards,

### Appendix 13. Summary of Articles Included in the Systematic Literature Review

Title of Paper	Author/s	Summary of Content	Critique/ Limitations
Promoting well-being by changing behaviour: A systematic review and narrative synthesis of the effectiveness of whole secondary school behavioural interventions.	Blank et al. (2010)	This study examines the findings from a systematic review of published literature conducted by the authors. They focused on the effectiveness of whole school approaches to social and emotional well-being of CYP in secondary schools. The effectiveness of 27 studies were examined with findings highlighting weaknesses in the literature and a bias towards research conducted in America. They concluded that pro-social behaviours could be enhanced through peer mediation and conflict resolution. Furthermore, they failed to draw strong conclusions on the impact of the community, teachers, young people, parents and outside agencies in preventing anti-social behaviour.	Literature included is not well developed. Many studies included were from USA. Demographics of participants not reflective of UK. Varied practice of measuring well-being. Self-report measurement can be unreliable.
Pilot Multimethod Trial of a School-Ethos Intervention to Reduce Substance Use: Building Hypotheses About Upstream Pathways to Prevention	Bonell et al. (2010)	Two schools adopting the Healthy School Ethos intervention were compared with two control schools to research the impact of whole school intervention in changing school ethos and thus substance use. Interviews were conducted with staff, students (11-12 years) and facilitators. Student involvement in school planning and delivering intervention was found to improve their own self-regard as well as relationships with staff. At a 9-month follow-up, pupils in intervention schools described fewer incidents of bullying of others and feeling unsafe at school. However, the outcomes measured were not statistically significant. Overall, researchers found that involving children in	Age of participants too young for a study on substance use. Swapping intervention and control schools mid study likely to have biased evaluation. Generalisability of results difficult. Children in intervention likely to have over-reported benefits of intervention.

		bottom up change was beneficial but more research was required.	
There is Another Way: building a new vision for schools from the bottom up	MacDonald et al. (2016)	This paper highlights the frequency of change and instability recognised throughout the education system and make recommendations for the future direction of schools. They critique current aspects of accountability, structure, governance, curriculum and teacher development. They proposed 'trust' and 'research and evidence' as a more meaningful and ethical direction in which education should take.	Article not based on empirical research. Based on one school in East London, difficult to generalise beyond such a diverse population.
Creating a whole school ethos of care	Warin (2017)	This paper recognises the growing prevalence on mental health difficulties in CYP and investigates the notions of 'care' and 'nurture' as potential whole school values. Qualitative data was collected from seven schools in England to investigate how school leaders can instill a more caring school ethos. The authors found that leadership was influential in changing a school environment.	Research conducted in specific geographical area of UK, difficult to generalise results. Failed to get perceptions of CYP. Funded by NGN, potential for bias.
Assessing differential effects of implementation quality and risk status in a whole-school social and emotional learning programme: Secondary SEAL.	Wigelsworth et al. (2013)	This paper investigates differences in effectiveness of the secondary social and emotional aspects of learning (SSEAL) programme across 41 secondary schools in England. A two year pre-test/post-test design using multiple self-report measures found no effect of implementation on students and no effect of the quality of the delivery. The paper concludes by proposing areas for future research.	Self report measures from CYP can be unreliable. Did not triangulate results through teacher and staff perceptions. Schools were not randomly assigned to intervention or control groups. Overall quality of schools not assessed, difficult to compare outcomes.

From adversity to buoyancy.	Smith (2015)	Smith's article describes his desire for growth mindsets to be promoted across whole school contexts. He describes the importance of promoting positive emotional responses to setbacks in order to sustain academic resilience in pupils. He argues that greater research is needed to inform interventions.	Article not based on empirical research. Based on viewpoint of one practitioner.
Working with 'Social and Emotional Aspects of Learning' (SEAL): Associations with school ethos, pupil social experiences, attendance, and attainment.	Banerjee et al. (2014)	This study examined the variety in implementation of the SEAL initiative in primary and secondary schools. Pupils were surveyed to explore their social experiences and links to school ethos. Relationships were found between whole school delivery and pupil attainment and reduce pupil absence. The variety in practice was found to be an important factor of whole school implementation and enhancing positive school ethos.	Data collected on one visit to school. May not have captured all aspects of SEAL practice. Simple measurement tool for pupil perceptions of school ethos, may not have captured complex nature of such a construct. Did not control for how long each school had engaged with SEAL.
Teacher perspectives on the implementation of the PATHS curriculum.	Honess and Hunter (2014)	The researchers used one school as a case study to explore staff views on a whole school social and emotional intervention known as PATHS. Semi-structured interviews revealed initial scepticism in the longevity and effectiveness of the intervention. Overall it was viewed positively, with staff valuing training, support from leadership and the prescriptive nature of the curriculum.	Case study of one school with small sample size. Location and demographics not described making generalization of results difficult. Convenience sample opens up potential for bias.

## Appendix 14. Summary of Articles Excluded in the Systematic Literature Review

Title of Paper	Paper Included	Reason
'Inclusion – that word!' examining some of the tensions in supporting pupils experiencing social, emotional and behavioural difficulties/needs.	No	Looked at support groups for specific pupils. Not whole school approach.
Working with 'Social and Emotional Aspects of Learning' ( SEAL): associations with school ethos, pupil social experiences, attendance, and attainment.	Yes	Met all inclusion criteria
Evaluating the outcomes and implementation of a TaMHS (Targeting Mental Health in Schools) project in four West Midlands (UK) schools using activity theory.	No	Utilised targeted interventions for CYP with mental health difficulties
Teacher perspectives on the implementation of the PATHS curriculum.	Yes	Met all inclusion criteria
Applying assessment through teaching and instructional psychology: An alternative model of service delivery to raise attainment in primary schools.	No	Educational psychologist initiative. Not school led.
Exploring school experiences of young people who have self-harmed: How can schools help?	No	Intervention aimed at CYP who self harm only.
Change management and the SENCo role: developing key performance indicators in the strategic development of inclusivity.	No	Intervention aimed at CYP with recognised special educational needs and difficulties.
Implementing primary Social and Emotional Aspects of Learning (SEAL) small group interventions: recommendations for practitioners.	No	Intervention was not school wide, small groups of CYP only.
'It's something I do as a parent, it's common sense to me' - Non-teaching staff members' perceptions of SEAL and their role in the development of	No	Does not explore whole school methods of implementation.

children's social, emotional and behavioural skills.		
Community led active schools programme (CLASP) exploring the implementation of health interventions in primary schools: headteachers' perspectives.	No	Health focused, beyond scope of educational staff.
Success for All: Evaluation Report and Executive Summary	No	Specific focus on literacy.
Chess in Schools: Evaluation Report and Executive Summary	No	Specific focus on chess, not mindset/attitude change
Teacher Observation: Evaluation Report and Executive Summary	No	Aimed at teaching staff not pupils
Achieve Together: Evaluation Report and Executive Summary	No	Community based, initiatives led by 3 charities – outside scope of educational staff
Teacher Effectiveness Enhancement Programme: Evaluation Report and Executive Summary	No	Did not focus on mindset/behaviour/attitude change
Talk of the Town: Evaluation Report and Executive Summary	No	Specific speech and language intervention.
Talk for Writing: Evaluation Report and Executive Summary	No	Specific writing intervention. No focus on mindset
Promoting the emotional well-being of teaching staff in secondary schools.	No	Focused on staff only
Impact Evaluation of a School-based Counselling Intervention in Northern Ireland: Is it Effective for Pupils Who Have Been Bullied?	No	Not whole school. Focused on specific group of CYP who have been bullied.
Mathematics Mastery: Secondary Evaluation Report	No	Specific focus on maths.
Mathematics Mastery: Primary Evaluation Report	No	Specific focus on maths.
A pilot cluster randomised controlled trial of a support and training intervention to improve the mental health of	No	Staff mental health intervention, doesn't include pupils, beyond the scope of educational staff



secondary school teachers and students - the WISE (Wellbeing in Secondary Education) study.		
Comparing student perceptions of coping strategies and school interventions in managing bullying and cyberbullying incidents.	No	Focus on what helped pupils cope, not change mindset/attitudes of pupils.
Developing and sustaining provision for children with motor skills difficulties in schools: the role of educational psychologists.	No	Health focused, beyond scope of educational staff
Epilepsy in school-aged children: more than just seizures?	No	Health focused, beyond scope of educational staff
Promoting well-being by changing behaviour: a systematic review and narrative synthesis of the effectiveness of whole secondary school behavioural interventions	Yes	Met all inclusion criteria
Pilot multimethod trial of a school-ethos intervention to reduce substance use: building hypotheses about upstream pathways to prevention.	Yes	Met all inclusion criteria
The experiences of young people with obesity in secondary school: some implications for the healthy school agenda.	No	Health focused, beyond scope of educational staff
Blood brothers, ugly sisters: School counselling and sibling dynamics.	No	Not whole school mindset change for all pupils. Focus specifically on siblings
Supporting adolescent emotional health in schools: a mixed methods study of student and staff views in England.	No	Not an intervention, aim to quantify health provision in school.
Interviewer: 'Are women and girls ever responsible for the domestic violence they encounter?' Student: 'No, well, unless they did something really, really bad ...'.	No	Intervention outside of school context
Learning about what constitutes effective training from a pilot	No	Specific focus on music

programme to improve music education in primary schools.		
Whole school support for vulnerable children: the evaluation of a part-time nurture group.	No	Targeted intervention for small group of pupils in nurture group. Not whole school
Learning to learn: improving attainment, closing the gap at Key Stage 3.	No	Focus on attainment only, not mindset/attitude change
Exploring the Anti-bullying Role of a Befriending Peer Support Programme: A Case Study within the Primary School Setting in Northern Ireland.	No	Targeted intervention for specific group of CYP
Diet, nutrition and schoolchildren: An update.	No	Health focused, beyond scope of educational staff
Acculturation and religion in schools: the views of young people from minority belief backgrounds.	No	Not an intervention. Focus on specific group of CYP from minority backgrounds
Mental health and wellbeing in schools: Concerns, challenges and opportunities.	No	Not an intervention
Enhancing thinking skills in early childhood.	No	Specific focus on maths
Exploring pastoral staff's experiences of their own emotional well-being in a secondary school.	No	Not a pupil intervention
Peaceful schools.	No	Not an intervention
Disciplinary exclusion: the influence of school ethos.	No	Not an intervention
PETE Programs Creating Teacher Leaders to Integrate Comprehensive School Physical Activity Programs.	No	Health focused, beyond scope of educational staff
School ethos and personal, social, health education. brown	No	Not an intervention
Finding a moral home ground: appropriately critical religious education and transmission of spiritual values.	No	Specific focus on religious beliefs

Teaching Buddhism in Britain's Schools: Redefining the insider role.	No	Focus on religious beliefs, subject specific
Restoring the Possibility of Change? A Restorative Approach with Troubled and Troublesome Young People	No	Targeted intervention for specific group of CYP
Can restorative practices in schools make a difference?	No	Targeted intervention for specific group of CYP
Creating a whole school ethos of care	Yes	Met all inclusion criteria
Introduction: Children's language and communication needs: Evaluating intervention and service provision in schools.	No	Specific to speech and language
Review of <i>The restorative classroom: Using restorative approaches to foster effective learning.</i>	No	Book - Not an intervention
Review of <i>Magic circles: Self-esteem for everyone in Circle Time, 2nd ed.</i>	No	Book – Not an intervention