COACHING PRIMARY SCHOOL TEACHING ASSISTANTS TO MEDIATE LEARNING: A COLLABORATIVE ACTION RESEARCH PROJECT AND REALISTIC EVALUATION

by

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ABSTRACT

Research in the area of teaching assistant (TA) deployment in UK schools has suggested TAs are not always successful in enhancing the attainment of pupils they work with, and can often experience low self-efficacy with regards to their role in supporting pupil learning. A collaborative action research (CAR) model was used to explore the influence of training three TAs in a primary school to use a dynamic assessment-inspired mediation intervention entitled 'Medi8' (focusing on supporting pupils' cognitive functions). The TAs worked with a target pupil and their class teacher to mediate specific cognitive functions with which the pupil was experiencing difficulties. After the training, the TAs undertook weekly solution-focused coaching sessions concentrating on embedding mediational practices in their work with the target pupil. A realistic evaluation (RE) was then conducted to elicit mechanisms through which the intervention had influenced TA practice and self-efficacy within the context of the school, as well as pupil outcomes in relation to the cognitive functions targeted through the intervention. Findings of the RE suggested that TAs experienced an increase in their self-efficacy regarding supporting pupil cognitive functioning and changes to their practice to incorporate mediational strategies. The RE also suggested that pupils experienced small steps of progress in their independence in their targeted cognitive skills. The research concluded with an action plan for a further cycle of the CAR process in light of the RE in order to further embed mediational practice in the work of TAs in the school.

DEDICATION

To Debbie Taylor, my mum and the person who inspired this project,

Thank you for your infinite love and support, and for showing me the value of dedicating your career to supporting others.

To Phil and Naomi Taylor, my dad and sister,

Thank you for your endless love, your belief in my abilities and for supporting me in more ways than you realise.

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Thank you for being my rock in every aspect of life and for your endless understanding, tolerance, positivity and belief in me. I could not have done this without you and I cannot wait for the birth of our son.

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List of Abbreviations

AR – *Action Research*

BPS – *British Psychological Society*

CAP – *Cognitive Abilities Profile*

CAR – *Collaborative Action Research*

CFD – *Complex Figure Drawing*

CMOC – *Context, Mechanism, Outcome Configuration*

CR – *Critical Realism*

DA – *Dynamic Assessment*

DfE – *Department for Education*

DISS – *Deployment and Impact of Support Staff*

DoH – *Department of Health*

EEF – *Education Endowment Fund*

EHCP – *Education, Health and Care Plan*

EP – *Educational Psychology/Psychologist*

EPS – *Educational Psychology Service*

IE – *Instrumental Enrichment*

LPAD – *Learning Propensity Assessment Device*

MAST – *Making a Statement*

MLE – *Mediated Learning Experience*

MLERS – *Mediated Learning Experience Rating Scale*

RE – *Realistic Evaluation*

SCM – *Structural Cognitive Modifiability*

SE – *Self-efficacy*

SENCo – *Special Educational Needs Co-ordinator*

SEND – *Special Educational Needs and Disabiltiies*

SENSE – *Special Educational Needs in Secondary Education*

SF – *Solution-focused*

SFBT – *Solution-Focused Brief Therapy*

SFC – *Solution-Focused Coaching*

TA – *Teaching Assistant*

TEP – *Trainee Educational Psychologist*

WOWW – *Working on What Works*

ZPD – *Zone of Proximal Development*

CHAPTER 1: INTRODUCTION

1.1. Context

This research forms Volume 1 of a two-volume thesis for the Applied Educational and Child Psychology Doctoral programme at the University of Birmingham. This research was conducted over two years (2017-2018) whilst I was on placement as a Trainee Educational Psychologist (TEP) at a Local Authority in the Midlands.

1.2. Research rationale

1.2.1. Personal rationale for researching teaching assistant practice

My interest in teaching assistant (TA) practice developed as a result of my life experiences. Firstly, my mother was employed as a TA in a primary school for seventeen years, and I experienced the progression of her career and had discussions with her about her work, where it became clear that she regularly felt undermined and undervalued by teachers and managers within the school. The expectations of her role in her early career involved carrying out administrative tasks and creating displays and resources. At that time, she felt overwhelmed and exhausted by the often physical nature of the work and rarely felt respected or appreciated for executing this work. As her career progressed and the nature of TA support evolved, she became overwhelmed in a different way with regards to the demands on her to take a more pedagogical role and lead small group interventions with pupils. Without any previous experience of teaching, this was challenging, and although she received some training,

she did not feel this was sufficient to equip her to deliver pedagogical input. She found this situation particularly stressful when she was subjected to Ofsted inspections and judged from a pedagogical perspective. It was unpleasant to think that my mother was not experiencing feelings of competence, respect or value in her work, and I was incredibly proud that she stayed in the role as a result of her love of supporting the pupils.

My five-year role as a teacher of English, Drama and Music in UK secondary schools led me to work alongside many TAs. I gained further insight into the challenges faced by TAs in the classroom, and realised that I had not received any explicit training for directing and deploying TAs. Any knowledge I had gained had come from observing my supervisors during my training. Additionally, involving TAs in lesson planning was problematic due to time constraints; we would often be required to find time before and after lessons, sometimes during breaks or lunch times. As a result, I did not ever feel that I was able to utilise TAs effectively, and this was frustrating. I therefore wanted to explore this area in greater depth and take steps towards considering some solutions to the difficulties regarding TA practice in today's mainstream schools.

1.2.2. Professional rationale

Outside of my own personal experiences, a range of factors emerged from the relevant research which solidified my decision to carry out the current project. These are discussed in detail in Chapter 2.

CHAPTER 2: LITERATURE REVIEW

2.1. Teaching Assistants

2.1.1. The role of the TA

The role of the TA is a contentious subject within current education discourse. Diversity exists in the definition of the role, likely due to an historic lack of official standards for the profession. In 2015, professional standards for TAs were drafted by the Department for Education (DfE), which stated that their role is "to work with teachers to raise the learning and attainment of pupils while also promoting their independence, self-esteem and social inclusion" (DfE, 2015, p.5). This is mirrored in research which suggests the majority of TA time is dedicated to supporting the inclusion of pupils with special educational needs and disabilities (SEND: Webster and Blatchford, 2013; 2014). Although this appears to be a positive finding, research into TA effectiveness suggests that there are some fundamental problems with this model of TA practice.

2.1.2. TA effectiveness

2.1.2.2. Large-scale research into TA effectiveness

The efficacy of TA practice is crucial. Webster and Blatchford (2013) reported that one in five learning interactions involving pupils with significant levels of SEND are one-to-one interactions with TAs. My previous role as a secondary teacher highlighted the significant influence that a well-trained and motivated TA can have on pupils, not only in terms of academic attainment but also their social and emotional development. My experiences were supported in a report by Ofsted (2002), which suggested that TAs improve the quality of teaching and learning in mainstream schools, and further small-

scale research has also indicated the positive influence of TAs. Farrell et al. (2010) found that TAs were instrumental in helping pupils with literacy and language needs make significant improvements when delivering one-to-one or small-group interventions. However, despite the positive implications of this research, other larger-scale research projects have suggested that TAs can have a disadvantageous effect on the attainment of the pupils they are intended to support (Blatchford, Russell and Webster, 2012; Webster and Blatchford, 2013; 2014).

The Deployment and Impact of Support Staff (DISS; Blatchford, Russell and Webster, 2012) study was a large project (N=8200) conducted with participants from seven different year groups across 153 mainstream primary and secondary schools. It involved staff questionnaires and interviews as well as systematic observations of pupils with Statements of Special Educational Needs (SEN), statutory documents detailing a child or young person's educational needs which have now been replaced by Education, Health and Care Plans (EHCPs: Children and Families Act, DfE/DoH, 2014). The findings suggested that pupils receiving the most TA support made less progress than their peers across English, Science and Maths, despite the researchers controlling for prior attainment and SEND. This adverse effect was more significant for pupils with Statements of SEN, again challenging the norm where, "TA hours are the accepted currency of Statements" (Webster, 2014, p.234). Blatchford, Russell and Webster (2012) identified three key areas of concern (presented in Table 1):

Table 1: Key findings from the DISS study (Blatchford, Russell and Webster, 2012)

Key area of concern regarding TAs	**Findings**
1. Deployment	TAs spent significantly more time working one-to-one with pupils than teachers and were the primary educators of pupils with Statements of SEN, who experienced 41% of their interactions with TAs and only 21% with teachers.
2. Practice	Explanations of concepts made by TAs to pupils were characterised as inaccurate or confusing at times. It was also reported that teachers tended to use more open questioning to explore concepts whereas TAs were more likely to use closed questioning and prompting to elicit the desired response.
3. Preparedness	TAs are often unprepared, both for their daily work with pupils and in terms of training and qualifications to fulfil their role in supporting learning. Teachers have limited training or time to work with TAs, and interactions are largely ad hoc.

Further implications for TA effectiveness were made through the results from the two-year Making a Statement (MAST) study by Webster and Blatchford (2013; 2014). This study explored the pedagogical input experienced across a school week by 48 Year 5 pupils with Statements of SEN. In addition to daily systematic observations, qualitative

data was obtained through interviews with approximately 200 teachers, TAs, special educational needs co-ordinators (SENCos) and parents/carers. Findings were presented under five key areas:

Table 2: Key findings from the MAST study (Webster and Blatchford, 2013; 2014)

Key area of concern regarding TAs	
1. Pupil interactions	Pupils with Statements of SEN spent approximately one day a week outside the classroom (almost always accompanied by a TA), were more than three times more likely to have interactions with TAs than with teachers and experienced half as many interactions with peers as other pupils in the class.
2. Deployment	TAs often planned and delivered interventions for pupils with Statements of SEN and were principally responsible for pedagogical decision-making pertaining to these pupils.
3. Practice	The pedagogical input for pupils with Statements of SEN was of a lower quality than that of their peers.
4. Positioned as experts	Teachers considered TAs to be experts in meeting the needs of pupils with Statements, despite equivalencies in the weakness of their understanding.
5. Provision for pupils with SEND	The primary provision for pupils with Statements of SEN was allocation of TA hours, and an absence of other evidence-based approaches was evident.

There are some clear limitations to these studies. There is an inevitable degree of

subjectivity in the interpretation of the nature of interactions observed in a classroom (even when approached systematically), and of the qualitative data obtained through staff and parent interviews. However, these results are indicative of an over-reliance on TAs to deliver the curriculum to pupils with SEND, and findings were replicated in a secondary school context through the SEN in Secondary Education (SENSE) study, again conducted by Webster and Blatchford (2017).

The findings of the SENSE study suggested that TAs were a consistent feature in the lives of pupils with Statements of SEN/EHCPs, and that interactions with TAs constituted approximately one-fifth of all interactions these pupils experienced across their school week. Qualitative analysis of interviews suggested that TAs reported "bridging" (p.71) the learning moment-by-moment by repeating instructions and modifying their language, simplifying and re-explaining tasks, deepening understanding and differentiating tasks and targets. The authors stated that TAs did not report using any specific strategies or approaches in their one-to-one interactions with pupils. Though the authors acknowledge the limitations of this study, namely the focus on cognition and learning needs without consideration of the complex interplay of co-occurring needs in many pupils, they still claim that their study raises important questions about the lack of "an effective and theoretically grounded pedagogy for pupils with SEND in the instructional approaches used by either teachers or TAs" (p.4).

Although the three large studies cited here were conducted by the same researchers, other smaller-scale research has supported the concerns raised. As noted in a case study by Roffey-Barentsen and Watt (2014), the main entry-route into the job of TA was through the role of parent-helper, and although TAs reported having a range of

previous experiences relevant to the role, they did not mention explicit pedagogical training. Much of the recent research raises important questions about the deployment of support staff in roles requiring pedagogical instruction (Giangreco, 2010; Lyons, 2012; Fisher & Pleasants, 2012; Rutherford, 2012; Sharples, Webster and Blatchford, 2015).

The overall implications of the research in this area studies seems clear: TAs are regularly relied upon to act as primary educators of pupils with SEND, and TAs are not generally effective in raising attainment when this is the case. The findings of the MAST and DISS studies lead to a report by the Reform Research Trust suggesting ministers should empower schools to reduce their TA numbers (Thorpe, Trewhitt and Zuccollo, 2013). Furthermore, these concerns have prompted some to claim that the time has come to pursue alternatives to TA support (Giangreco, Doyle and Suter, 2012). However, Blatchford, Russell and Webster (2012) suggest that TAs require better training and communication with teaching staff on a day-to-day basis, and that if trained and deployed appropriately, TAs can continue to be an extremely valuable resource in schools.

2.1.3. Addressing concerns about TA practice

Despite the negative implications of this large-scale research, TAs remain a widely-accessed resource in schools. According to the DfE, the number of full-time equivalent TAs in English mainstream schools has increased from 219,800 in 2011 to 265,600 in 2016 (with the first slight reduction in numbers observed for 2017), and TAs account for 28% of the school workforce (DfE, 2018). Giangreco (2010) states, “it is interesting

and somewhat perplexing that TA utilisation has advanced steadily … despite lacking both a theoretically defensible foundation and a substantive evidence base" (Giangreco, 2010, p. 341). It has therefore become imperative that the concerns regarding TA practice and deployment are addressed to ensure the best outcomes for pupils.

The SEND Code of Practice (DfE/DoH, 2014) attempts to address the concerning implications of the research in this area. When referring to TA support, the Code describes teachers' responsibility for the deployment of support staff (DfE/DoH, 2014) and the requirement for the needs of pupils with SEND to be met primarily by teachers with pedagogical expertise, stating that SEND provision is "compromised by anything less" (DfE/DoH, 2014, p.25). Approaches to addressing these concerns were addressed in a document by Sharples, Webster and Blatchford (2015) published by the Education Endowment Fund (EEF). The document contains guidelines for mainstream schools regarding the most effective way to deploy TAs, and includes these important recommendations:

- Avoiding replacement of teacher-support with TA-support
- Improving the nature and quality of TA talk
- Focusing on fostering independence and avoiding task completion
- Using TAs to deliver brief, regular, evidence-based interventions and offering robust support and training

Although the EEF guidelines have implications for teachers' practice, the most significant implications are for school leaders: reviewing the TA role, arranging

appropriate and comprehensive training and providing sufficient teacher-TA planning and feedback time. The guidelines make it clear that staff training will play a central role in ensuring better provision for pupils with SEND, and as TAs continue to be used as a significant resource for delivering the curriculum to pupils with SEND, the implications of research for their practice need to be carefully considered and addressed through training. Webster and Blatchford (2017) argue that those professionals in charge of pedagogical delivery need to develop confidence and competence in relation to supporting pupils with SEND through training on "effective and theoretically grounded pedagogy" (p.4).

Radford et al. (2015) argue that in light of the research and current landscape regarding TA deployment in schools, what is required is "further detail regarding the moment-by-moment experiences of the learners themselves when directly supported by an adult" (p.3), and crucially a focus on effective TA-pupil learning interactions. Specifically, they argue that TAs need greater pedagogical understanding regarding scaffolding, a concept rooted in Vygotsky's sociocultural theory, where interactions with others assist children in developing higher cognitive functions such as thinking and reasoning (Vygotsky, 1981). The theory posits that for these interactions to be effective, they must occur within the learner's Zone of Proximal Development (ZPD), or the distance between what they can achieve on their own and what they can achieve with assistance (Vygotsky, 1978). The suggestions made by Radford et al. (2015) align with findings from classroom observations conducted by Webster and Blatchford (2017), which suggested that TAs often work reactively with pupils, as opposed to having pre-planned approaches. TAs in the study conducted by Bowles, Radford and Bakopoulou

(2017) reported that they often differentiate teacher instructions in the moment by using strategies such as repetition, simplification, modelling and visual prompts. The authors state that, “Although these strategies could be regarded as useful, there is a danger that without sufficient planning and knowledge of learning principles, they could be offering too high a level of initial support, failing to give children enough responsibility for their own learning” (p.8).

Scaffolding in its original form was strongly criticised for positioning the learner as a passive participant who receives assistance from the scaffolds offered by the teacher (Daniels, 2001), as opposed to an active participant in the interaction. More recently, Radford et al. (2015) determined three roles of scaffolding in teaching and learning interactions (p.1): “1) a support role that maintained learner engagement, on-task behaviour and motivation; 2) a repair function that focused on learning and fostered independence when children were in difficulty; and 3) a heuristic role that encouraged students to use their own learning strategies”. These roles align with the findings of Bowles, Radford and Bakopoulou (2017), where TAs identified key aspects of scaffolding within their role in supporting learning to be providing emotional support, praise and encouragement, assisting pupils in sustaining their attention and concentration, simplifying and repeating teacher instructions as a means of in-the-moment differentiation, using visual prompts and practical tasks with concrete resources and promoting pupil independence and participation in the lesson. However, the authors of this study found that although TAs were aware of the importance of fostering independence in pupils, they found it more difficult to be explicit about the ways in which this can be achieved, with one TA suggesting that “You sort of reach the

conclusion with them" (p.8). The authors therefore argue that fostering independence is one area of pedagogy in which TAs are less experienced and confident, and is therefore a crucial focus for practice development.

Upon reading these findings and the argument presented by Radford et al. (2015), it became clear that the concept of mediation as used in the field of dynamic assessment incorporates these key roles of scaffolding and effectively meets the criteria deemed necessary for improving TA-pupil learning interactions and the "moment-by-moment experiences of the learners" (Radford et al., 2015), whilst maintaining a strong focus on fostering independence and ensuring that the pupil is an active and independent participant in the learning process through encouraging base-lining, making connections in their learning and focusing on higher-order learning skills. The concept of mediation will be discussed in detail in Section 2.2.

2.1.4. Self-efficacy and TA-effectiveness

There is broad agreement in the literature regarding self-efficacy (SE) that the construct has its roots in two key theoretical perspectives: Rotter's locus of control theory and Bandura's SE theory (Denzine, Cooney and McKenzie, 2005; Skaalvik & Skaalvik, 2007). Rotter's theory (1966) considers the extent to which individuals believe that their actions determine the outcomes in their lives, and Bandura (1977) described SE as "beliefs in one's capabilities to organise and execute the course of action required to produce given attainment" (p. 3). Higgins and Gulliford (2014) note the importance of "efficacy expectancy", or the belief in one's ability to exert influence over an outcome, and "outcome expectations" (p.123), or the confidence that by

exerting one's influence, a desired outcome will be reached, in an individual's experience of SE.

The literature focusing on TA SE is scarce. A survey by Hammett and Burton (2005) identified perceived status and self-esteem as the most significant motivators for TAs, and Higgins and Gulliford (2014) state that these motivators directly influence TA SE, or belief that they can influence positive outcomes for the pupils with whom they work. They analysed TA responses during a focus group following a two-term training intervention targeting classroom practice. Responses such as, "We are undermined on a regular basis..." (p.132) suggested that perceived devaluing by other staff members can be extremely detrimental to TA SE. They concluded that schools should implement processes to promote TAs' perceived status and self-esteem, and state that "people who feel that they have very little influence over their work behaviour can experience a de-motivating lack of involvement in their work" (p. 300).

This finding is supported by the voices of TAs interviewed by Roffey-Barentsen and Watts (2014), who indicated that they felt "undervalued" (p.19), of low status and unsupported, despite having to carry out work similar to that of teachers. Furthermore, a study by Lehane (2015) found that some TAs reported being perceived as somehow "lesser" professionals ("only being a TA you're so at the bottom of the ladder", "not really wanted in this classroom", "we include the students … but … we're apart from the school", "what do we know?", "it takes a lot of getting used to from the teachers that [we] may know … quite a lot", p.13).

Although all of these studies were small case studies with limited sample sizes, their findings suggest a need for school leaders to actively endorse more mutually-respectful relationships between TAs and other staff to promote TA self-esteem and SE and to facilitate the most positive outcomes for pupils. A larger study by Bennet, Ng-Knight and Hayes (2016) elicited questionnaire data from 429 teachers and TAs, and found that teachers report significantly more autonomy-supportive teaching (or pedagogical practices that support independence) than TAs, and the more teachers experience feelings of competence, the more they report autonomy-supportive teaching. The authors claim that their findings support the idea that a lack of perceived competence and the related lack of autonomy-supportive teaching may account for the apparently negative impact of TA support on pupil academic progress. Combining this with Bandura's findings that higher levels of SE are associated with greater commitment to goal achievement and greater persistence towards these goals in the face of setbacks (Bandura, 1989) presents a compelling case for the promotion of TA SE in schools and aligns with the argument that the development of whole-school policies which ensure that TAs have access to the necessary resources to be effective in their role and which deepen their sense of control over pupil outcomes is crucial (Higgins and Gulliford, 2014).

The publication of draft standards for TAs was a positive step towards this, and the DfE document stipulates that, "School leaders should value and hold teaching assistants in the same esteem as fellow educational professionals..." and should ensure that, "their skills and expertise in raising pupil achievement are recognised and developed..." (2015, p.5). In this respect, it is hypothesised that the purpose of the

current research to empower TAs through professional training to support pupil learning would not only provide quality development of TA expertise equal to the opportunities afforded to other staff within the school, but also increase TA SE with regards to fulfilling their role in a meaningful way.

2.2. Dynamic Assessment-Inspired Mediation

2.2.1. Dynamic Assessment and mediation

The concept of mediation arose in the field of psychology through the development of dynamic assessment (DA), an interactive model of assessment where intervention from an educator is necessary to determine how a pupil learns. Lidz (2002) states that "interaction is the most defining feature of DA" (p.82) and describes DA as offering a unique insight into how the learner responds to intervention, which can then be linked to classroom practice and the curriculum. According to Haywood and Lidz (2007), DA involves acquiring information about baseline performance, establishing the obstacles to learning, determining the type and quantity of mediation required to improve learner performance, determining response to mediation and finally establishing what long-term intervention will be needed to support performance. There are various differing models of DA in the literature (Feuerstein, 2002; Lidz and Elliot, 2000; Tzuriel, 2001; Haywood and Lidz, 2007), but as Deutsch and Mohammed (2010) remark, they all share a focus on the potential to learn, the rejection of fixed intelligence, the centrality of interactions between the teacher, learner and task and the absence of norm-testing. The focus on pupil response to intervention means DA rejects the static approach of other forms of assessment, such as norm-referencing (e.g. psychometric testing), where pupil performance is judged against population norms, and criterion-referencing

or curriculum-based assessment, where pupil performance is judged against predetermined criteria or curriculum standards (Hintze, Christ and Methe, 2006; Nazari and Mansouri, 2014; Lok, McNaught and Young, 2016). As noted by Haywood and Lidz (2007), DA works particularly well in educational settings as "the curriculum is a moving target and traditional psychometric practices are not particularly good at measuring moving targets" (p.76).

The term 'mediation' refers to the process of intervening to enable the pupil's learning. Deutsch and Mohammed (2010) describe mediation as "the nature (quality and quantity) of the interaction between mediator (often the parent or teacher) and learner (the mediatee)" (p.9) during a specific learning task. In this respect, DA is looking at what is possible for a learner with the right kind of intervention and instruction from their teacher. Haywood (1992) suggests the term *dynamic* refers to interactions where "there is actual teaching (not of answers but of cognitive tools), within the interaction and in which there is conscious, purposeful, and deliberate effort to produce change in the subject" (Haywood, 1992, p. 233).

It is this deliberate and purposeful mediational teaching that has a place in the classroom practice of TAs, who are often working with learners who require the greatest intervention with their cognitive functioning, as well as non-intellective factors crucial to the learning process. As described by Haywood and Lidz (2007), DA-inspired mediation serves to "identify obstacles to more effective learning and performance, to find ways to overcome those obstacles, and to assess the effects of removal of

obstacles on subsequent learning and performance effectiveness" (p.3), providing a more positive and optimistic approach to teaching pupils.

DA and its associated mediational practices have been criticised for their complexity in terms of administration due to the necessity to "hypothesise about and respond adaptively to a child's needs" (Missiuna and Samuels, 1989, p.15), threatening its practicality as an assessment method. This has repercussions in terms of its use by TAs in schools who have limited pedagogical experience and training. Furthermore, it is has been acknowledged that the level of intensity and individualisation required to deliver DA and mediation means this is a difficult approach to carry out in classrooms, particularly where staff shortages necessitate group-oriented approaches to assessment and intervention (Missiuna and Samuels, 1989). However, despite these limitations, in schools where TAs are employed and available, they are well-placed to carry out this form of intervention in their day-to-day support of pupils, both in and out of the classroom, as long as the appropriate level of training and experience of mediational techniques is provided.

2.2.2. Theoretical background

The theoretical basis of DA can be traced back to Vygotsky's social constructivist theories of learning, including his Sociocultural Theory of Development (Vygotsky, 1978). This theory includes the concept of the ZPD, where learning is seen as an interactive process occurring at the level where a pupil requires mediation to make progress. Vygotsky's ZPD emphasises the need for effective adult guidance and the role of the sociocultural environment in the learning process.

Feuerstein was also interested in the impact of environmental disadvantage on children's cognitive functioning. Although he studied with Piaget, his approach differs from Piaget's hierarchical theories of learning described in his Theory of Cognitive Development (Piaget, 1936), which do not consider the gaps that can arise as a result of environmental factors, or social and mediational influences on learning. Like Vygotsky, Feuerstein viewed the potential to learn as adaptable, flexible and dependent on the sociocultural context. This is reflected in Feuerstein's theory of Structural Cognitive Modifiability (SCM), where cognitive development is seen as "plastic" (Feuerstein, 1990, p78). Feuerstein and colleagues created a list of cognitive functions (or "the prerequisites for learning", Feuerstein et al., 1986, p.50) that can be observed and analysed by an assessor to identify an appropriate focus for mediation (see Table 3). The assessment of these functions describes a current state (not fixed traits) with the potential to be modified through effective intervention and mediation.

Feuerstein introduced the Mediated Learning Experience (MLE: Feuerstein, Rand and Hoffman, 1979), where the adult is seen as a crucial element in the learning process, supporting the child to construe the world from birth through mediation of the cognitive functions, as well as emotional, behavioural and cultural functions. The theory encapsulates the development of learning and problem-solving skills through dynamic interactions between the mediatee (learner), the mediator (teacher) and the task, and interaction is seen as adaptable to facilitate the learner's progress towards specific targets (both educational and behavioural). Deutsch captures this relationship in her Tri Partite Learning Partnership (Deutsch, 1998), where the three partners in the

learning process are seen as the pupil and their cognitive functions, the mediator and the nature of the task.

Feuerstein et al. (1986) present the cognitive functions in their programme entitled 'Instrumental Enrichment' (IE), which is grounded in the SCM theory and which stresses the importance of exposure to a quality MLE in early life. They describe the functions in terms of common "deficiencies" (p.53) that one may observe in a learner, and The Feuerstein Institute (2014) have produced a comprehensive list of cognitive functions from the IE programme. The cognitive functions are described as being "arbitrarily divided… into three stages of the mental act" (Feuerstein et al., 1986, p.52): Input, Elaboration and Output (see Table 3).

Table 3: Typical deficiencies in cognitive functions at each phase of the mental act (taken from Feuerstein et al., 1986, p.52-53) and list of cognitive functions as described by The Feuerstein Institute (2014, p.17-19)

Phase of mental act (p.52)	**Typical deficiencies in cognitive functions (p.53)**	**Cognitive functions described by The Feuerstein Institute (2014, p.10)**
Input (where information is gathered)	• Blurred and sweeping perception • Unplanned, impulsive, and unsystematic exploratory behaviour • Impaired receptive verbal tools and concepts • Impaired spatial and temporal orientation, including the lack of stable systems of spatial and temporal reference • Lack of or impaired conservation and constancy in face of transformations in one or more attributes • Lack of need for precision and accuracy • Lack of or impaired capacity for relating to two or more sources of information simultaneously	• Clear and detailed perception • Systematic exploratory behaviour • Well-developed verbal tools used for labelling objects, events, relationships, etc. • Well-established system of spatial orientation • Well-developed temporal concepts and orientation in time • Conservation of constancies (size, shape, quantity, direction) across various object domains • Well-developed need for precision and accuracy in data gathering • Ability to consider two or more sources of information at once

Phase of mental act (p.52)	**Typical deficiencies in cognitive functions (p.53)**	**Cognitive functions described by The Feuerstein Institute (2014, p.10)**
Elaboration (where gathered information is processed)	• Inadequacies in the definition of a problem • Inability to select relevant cues • Lack of spontaneous comparative behaviour • Narrowness of the mental field • Lack of need or impaired need for summative behaviour • Difficulties in projecting potential relationships • Lack of need for logical evidence. • Lack of or limited interiorisation • Lack of or restricted hypothetical or inferential reasoning • Lack of or impaired strategies for hypothesis testing • Lack of planning behaviour • An episodic grasp of reality	• Ability to identify and define the problem • Ability to distinguish between relevant and non-relevant cues in defining a problem • Well-developed spontaneous comparative behaviour • Broad mental field • Ability to integrate different aspects of reality • Need for and ability to pursue logical evidence • Well-developed internalization processes • Ability to use inferential-hypothetical thinking • Availability of strategies for hypothesis testing • Well-developed summative behaviour • Well-developed planning behaviour • Availability of verbal concepts that support reasoning processes

Phase of mental act (p.52)	**Typical deficiencies in cognitive functions (p.53)**	**Cognitive functions described by The Feuerstein Institute (2014, p.10)**
	• Non-elaboration of certain cognitive categories because the necessary labels are not part of the inventory on the receptive level or are not mobilised at the expressive level	
Output (where the products of elaboration are expressed)	• Egocentricity • Blocking • Lack of or impaired verbal tools for communicating adequately elaborated responses • Deficiency in visual transport (e.g. completing a given figure on the left side of a page by finding the missing part on the right side and transporting it visually) • Lack of or impaired need for precision and accuracy in responding • Trial-and-error behaviour • Impulsive, acting out behaviour	• Ability to communicate well-elaborated responses • Need for precision and accuracy in communicating one's responses • Ability to project virtual relationships • Well-developed self-regulation and ability to avoid trial-and-error responses • Well-developed functions of visual transport • Ability to restrain impulsive or acting-out behaviour

The MLE also aims to foster metacognition in order for learners to gain insight into their own cognitive skills. Feuerstein describes three universal and essential features of an MLE interaction (Feuerstein, 2002):

1. Intentionality (of the mediator to facilitate cognitive change) and reciprocity (of communication between mediatee and mediator);
2. Communication of meaning and purpose (i.e. why the learning is important and useful);
3. Transcendence and generalisation (from the specific task to other applications).

He also describes additional features that are more context-specific, such as feelings of competence and regulation of behaviour (Feuerstein, 2002). However, a review by Lidz (1991) of the evidence base for the relationship between developmental variables such as social and emotional development or level of achievement and the mediational interactions suggested by Feuerstein indicated that effective mediation relies on more than just the three universal features (see Table 4).

Lidz (2002) concludes that the evidence regarding the MLE suggests that these interactions can lead to improved cognitive functioning in learners, and states that it is reasonable to hypothesise that exposure to mediational environments across home, school, and community settings can enhance a learner's development of their higher-order cognitive functions.

2.2.3. Operationalising mediation

Lidz (2002) describes the MLE as illuminating what happens within the ZPD (Vygotsky, 1978), or what the learner is able to achieve with mediation from a teacher. She commented on the MLE's capacity to "enhance the assessor's ability to create and explore ZPDs with children with a variety of different learning difficulties and needs" (p.69), and created a scale influenced by the MLE as a method of capturing the main aspects of an interaction that enable the development of the pupil's "higher mental functioning" (Lidz, 2002, p.68). This scale was named the MLE Rating Scale (MLERS) and focused on the mediator's behaviour and not the learner, who is assessed separately, due to Lidz's feeling that relying solely on the learner's reciprocity can lead to "the loss of a great deal of information about the nature of the interaction" (Lidz, 2002, p.72). Lidz comments that the mediational behaviours presented in Table 4 "promoted self-regulation, active learning, strategic problem-solving and representational thinking" (p.70). It is important to note that the evidence cited by Lidz (1991) is largely based on interactions between mothers and children as opposed to those occurring within an educative context, although there is likely some implications for learning interactions taking place in schools.

Table 4: MLERS (taken from Lidz, 2002, p.70-71) and associated evidence (summarised from Lidz, 1991)

Type of interaction	**Description**	**Evidence/Theory**
Intent	Intentionally engaging and maintaining the child's involvement in a way that promotes the child's self-regulation of attention	Levenstein (1979) found that mothers' intention to converse with their child was a key factor in orienting the child to the task and appropriate cognitive functions.
Meaning	Highlighting and elaborating upon the child's perceptual experiences in a way that helps the child know what to notice and how to go about noticing	Carew (1980) identified a significant relationship between children's cognitive development and the parents' labelling of objects and relationships to clarify meaning.
Transcendence	Promoting the child's ability to make connections among current, previous and future experiences, as well as the ability to make causal and inferential connections among past, future and current events	Theoretically related on Sigel's (2002) concept of distancing to explain representational and abstract thought

Type of interaction	Description	Evidence/Theory
Praise/encouragement	Offering praise and encouragement, but also providing feedback about what seems to be helpful and what seems to obstruct the child's learning	Streissguth and Bee (1972) found that children of mothers who gave positive feedback enhanced cognitive performance; Feshbach (1973) identified a significant positive association between parent and child use of negative statements during a learning task; Finkelstein and Ramey (1977) found that issuing positive feedback immediately improved learning ability.
Joint regard	Ability to read the child's cues and messages to enable helping the child to express and articulate thoughts and reactions to experiences	Bakeman and Brown (1980) showed a correlation between the mother's responsiveness and the child's responsiveness.
Sharing	Making the child aware of experiences and thoughts of others that may relate to and enhance the child's experiences	Carew (1980) concluded that the sharing of information between mother and child was crucial in the child's cognitive development.
Task regulation	Presenting new learning in a way that promotes competence and mastery in the child (e.g.	Hess and Shipman (1965) concluded that mothers with lower socio-economic statuses took significantly less time for reflection and planning than middle class mothers.

Type of interaction	Description	Evidence/Theory
	scaffolding), while promoting strategic and planful thinking within a child	
Challenge	Presenting new learning at a level just above the child's current level of competence, encouraging the child to reach beyond his current level	Described as the step beyond feelings of competence and overcoming feelings of anxiety regarding the unfamiliar (Lidz, 1991), linking to Vygotsky's ZPD (1978).
Psychological differentiation	Maintaining the role of facilitator to the child's learning, avoiding the temptation of intrusion by doing too much and taking away the experience of learning from the child;	Streissguth and Bee (1971) found that children's feelings of "participation and autonomy" (p.159) were affected by how much physical involvement the mother had with the task; Wood (1980) concluded that gradual reduction of parental input into problem-solving helped develop the child's problem-solving approach.
Contingent responsivity	Responding to the child in a timely and appropriate way.	Bakeman and Brown (1980) identified an association between the emotional and verbal responsivity of mothers of infants and their children's longer term social and cognitive development; Levenstein

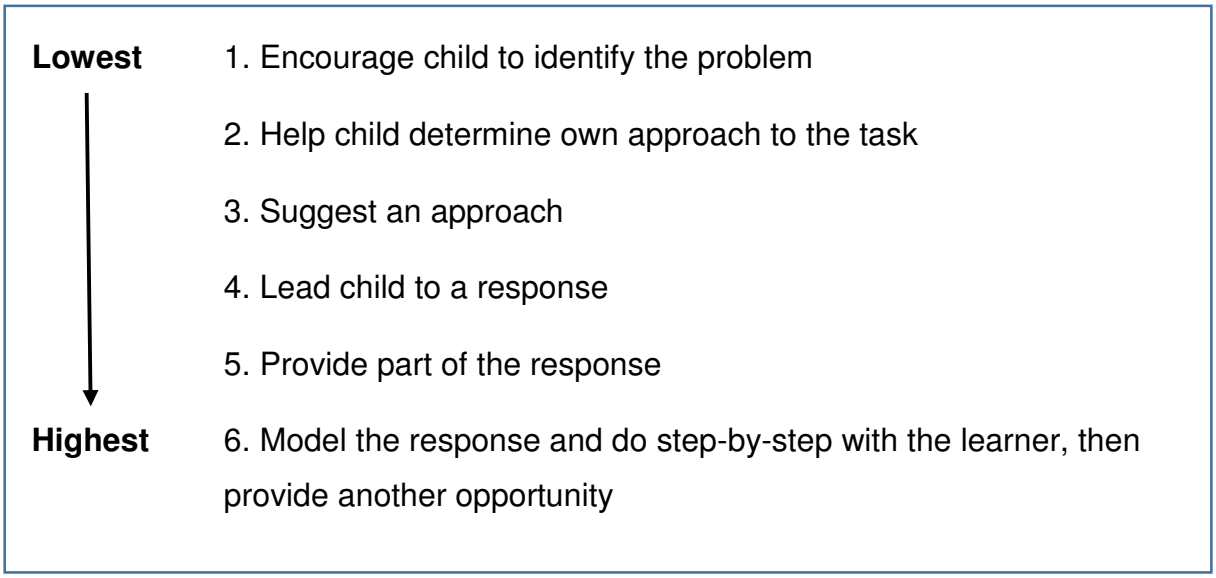
Type of interaction	Description	Evidence/Theory
		(1979) found that maternal responses to their children's requests was important for their cognitive and task orientation.
Affective involvement	Showing warmth and caring in interacting with the child, taking pleasure in being with the child.	As with praise/encouragement but with the addition of the "warmth factor" (Lidz, 1991, p.87).
Change	Communicating to the child that she has been successful in learning and is developing increased competence.	As with praise/encouragement but specifically aimed at the child's ability to be positively changed through the interaction.

Lidz (2002) states that from the list of interactions, five are particularly important in that the mediator can consider their incorporation in advance of working with the learner: meaning, transcendence, task regulation, challenge and change. She describes the other interactions as more intuitive and "assumed" (p.72) across all learning tasks.

Although the MLERS provides a cohesive list of mediational techniques for the purposes of the current research, it is lengthy and conceptually inaccessible for TAs with no prior knowledge in this area. Several other researchers have attempted to operationalise mediation through the use of observation checklists with differing levels of complexity (Mentis, Dunn-Bernstein and Mentis, 2008; Haywood and Lidz, 2007). Section B of the Cognitive Abilities Profile (CAP: Deutsch and Mohammed, 2010), a tool designed to be used to assess learners' cognitive functioning and affective factors through consultation and observation, draws on Lidz's MLERS, as well as Black and colleagues' thinking skills targets (Black et al., 2002), to provide a checklist to analyse the use of mediation through learners' responsiveness. The focus of the CAP is on the learner's response as opposed to the quality of mediation to offer a less judgemental approach for teaching staff. Deutsch and Mohammed (2010) describe the purpose of Section B as "to develop strategies that can be used by the teacher to develop, strengthen or 're-mediate' intellective, as well as emotional and behavioural cognitive abilities" (p.12).

The manual for the CAP presents a scale with guidance for levels of assistance to be provided by the mediator (p.174):

Figure 1: Scale of mediational assistance (taken from Deutsch and Mohammed, 2010, p.174)



Yeomans (2016) has also made attempts to operationalise mediation in a practicable manner by drawing on the manual for the Learning Propensity Assessment Device (LPAD: Feuerstein et al., 1972), a tool designed for the dynamic and ongoing assessment of learners. She describes the four main foci for mediation as regulation of behaviours affecting learning, rule-teaching (inductive and deductive), facilitating insight into problem-solving skills and encouraging organisation and sequencing. She also presents a scale depicting different levels mediation in her booklet for TEPs on DA: hand-over-hand guidance, modelling, pointing out general characteristics, bridging skills to new contexts, teaching how to choose the appropriate approach to a task and eventually withdrawing mediation where the learner becomes fully self-regulating.

The practice of mediation at these different levels is further facilitated through the development of verbal prompts (Haywood, Tzuriel and Vaught, 1992; Deutsch and Mohammed, 2010), whereby the mediator can choose from a list of useful questions

and statements appropriate for the mediatee's level of competence with the task. Yeomans (2016) provides a list of mediation strategies with examples of the type of question that a mediator can ask. These are drawn from Feuerstein's LPAD manual (Feuerstein et al., 1972: see Table 5). This list aligns with the comprehensive list of specific mediational strategies and example questions provided for each area of cognitive and behavioural functioning in the CAP manual (Deutsch and Mohammed, 2010) that can be used flexibly depending on the needs of the learner, and will be utilised within the training package that will be delivered to TAs during the current project. It is important to note that the utility of these prompts depends on the capacity of the learner to access information presented in the verbal modality.

Table 5: Yeomans' mediation strategies (2016, p.4), drawn from Feuerstein's LPAD manual (Feuerstein et al., 1972)

Strategy	**Related aspects of Lidz's MLERS (2002)**	**Example questions**
Focus on process (help the pupil to focus attention on thinking processes)	Intent, meaning, sharing, task regulation, psychological differentiation, change	*That's right, how did you know?* *How else could you do that?* *What should you do first?* *How can you find out what to do next?*
Ask for justification and make challenges (Challenge the pupil by asking them to justify their response. Help the pupil to focus on their own competence as a learner and to develop a sense of responsibility for their own learning. Make sure that correct answers are challenges; this helps a pupil understand that a challenge doesn't always mean that they are wrong)	Sharing, challenge, psychological differentiation, change	*Yes you are right, it could be that way. You could also look at it another way and find a better answer.* *Yes… but* *Yes, that's right, how did you know?* *Why is it better than that one?* *What could be wrong with this one?* *Why not…?* *Can you show/tell me how you thought about that and found the right answer?*

Strategy	**Related aspects of Lidz's MLERS (2002)**	**Example questions**
Teaching about rules (help pupils to generalise learning to future, similar situations)	Transcendence, task regulation	*Can we make a rule about this kind of problem?* *Would it help us to have a rule here?*
Emphasise order and predictability	Transcendence, task regulation	*What do you need to do next?* *How did you do that?* *What do you think would happen if…?* *When's another time you need to…?* *What have you done before that has helped you?* *Let's make a plan so we don't miss anything.*
Emphasise problem solving sequences and strategies	Transcendence, task regulation	*How did you do that?* *Stop and look carefully.* *What do you think the problem is?* *How can you find out?* *How is… different from…?*

Strategy	**Related aspects of Lidz's MLERS (2002)**	**Example questions**
Bridging (applying cognitive concepts, principles and strategies to familiar contexts. Concepts are learned and made secure through bridging. It is important to bridge cognitive functions, rather than content. Elicit from pupils if possible, don't tell (although some initial examples may help). Bridge to events and circumstances that are familiar to the pupil. Bridging examples should be simple, logical and straightforward. Elicit bridges in several domains of experience: other school (learning) contexts, home and peer group.	Transcendence	*When else is it good to:* *Say what you have to do?* *Note what information you've been given?* *Decide what rules you need to follow?* *Work out how to go about solving the problem?* *Decide where you are going to start?* *Check your answers?* *Look at all the possibilities?* *Concentrate and focus on what you're doing?*

2.2.4. Using mediation in educational settings

Haywood and Lidz (2007) argue that DA and its associated mediational practices should be incorporated into the delivery of the curriculum if it is to have optimal beneficence to learners. The very essence of teaching and learning in schools is captured through the interaction between teacher and learner, and therefore DA-inspired mediation is applicable to, and in fact integral to, quality-first teaching and learning. They argue that DA and the associated mediational interactions are the responsibility of "all professionals who are involved in the education and diagnostic intervention of the learner" (p.76). They describe DA as "ecumenical" (p.76) due to its focus on learning processes and not content, which aligns with the suggestions of advocates of scaffolding (Radford et al., 2015; Black and William, 1998) and reinforces the purpose of the current research to equip TAs with the tools to carry out mediation during their interactions with pupils.

Literature exploring the use of DA-inspired mediational techniques in classrooms is scarce, but has suggested that sociocultural pedagogies that involve in-the-moment mediation to support pupil independence in learning are unfamiliar and demanding and may not align with teachers' existing constructions of what it means to teach (van Compernolle and Henery, 2015; Williams, Abraham, and Negueruela-Azarola, 2013). Research has suggested that teachers found it difficult to make in-the-moment decisions about how to respond effectively to pupils' discourse as is required in mediation (Davin & Troyan, 2015; Walsh, 2006). Davin, Herazo and Sagre (2017) trained four teachers to use DA and observed their subsequent ability to employ graduated and contingent mediational techniques and track pupil responses to

mediation. They acknowledged that attempting to mediate pupil learning and deliver appropriately-pitched intervention in whole-class contexts with a diverse range of learners is challenging. For this reason, the TAs in the current project will be given the opportunity to learn and practice their mediation skills with one target pupil as opposed to with a larger group. The authors found improvements in all four teachers' mediation skills and their ability to provide graduated and contingent responses to support their independence and self-regulation. However, they also found that some teachers grasped the mediational techniques more effectively than others, and suggested that further mediation and follow-up would have been important for these teachers. As a result, the current project will involve ongoing support in the form of coaching to assist TAs in embedding their newly-acquired skills in their practice (as discussed in Section 2.3).

2.2.5. Assessment of target pupils

To establish key cognitive functions for the target pupils and suitable mediational techniques, some form of DA needs to take place. The earliest and perhaps most eminent model is Feurestein's LPAD (Feuerstein et al., 1972). Distinct features of the LPAD are that assessment of learning is ongoing and focuses on changes in the pupil's underlying cognitive functions as opposed to their performance on a test, as well as the emotional and behavioural responses to mediated learning and a consideration of the modality in which learning tasks are presented.

The CAP (Deutsch and Mohammed, 2010) is a tool designed to be used to assess learners' cognitive functioning and affective factors through consultation and

observation, based on heavily on Feuerstein's LPAD and drawing on Luria's domains of cognitive processes (divided into Attention, Perception, Memory, Language, Reasoning and Metacognition: Luria, 1973), the MLERS (Lidz, 2002) and Haywood and Lidz's mediational strategies (2007). It was developed in response to the increasing time pressures on EPs, making training in and delivering thorough individual DA problematic. The CAP offers a time-efficient questionnaire for observing and monitoring cognitive abilities, identifying targets and making recommendations for in-class differentiation, which can be completed by any individual working with the pupil (Deutsch and Mohammed, 2010).

Due to the cohesive and time-efficient nature of the CAP and the potential for triangulation with views from staff who know the most about the pupils' needs, Section A of this tool will be used in the current research to identify and monitor the cognitive functions to be targeted for each pupil and to facilitate the negotiation of appropriate mediational approaches with TAs.

2.3. Facilitating and embedding practice change through coaching

2.3.1. Training to enhance TA SE

When researching staff training and SE, a number of studies highlight the importance of taking steps to ensure that trainees move beyond being passive recipients towards the actual implementation of acquired knowledge or skills (Lave and Wenger, 1991; Balchin, Randall and Turner, 2006; Opfer and Pedder, 2011; Turner, Nicholson and Sanders, 2011; Higgins and Gulliford, 2014). Gibb (2007) states that training of a collaborative and supportive nature is more likely to develop SE than simple delivery of content within group training, suggesting that some form of supportive follow-up is crucial for building confidence in the newly-acquired skills. Erdem and Demirel (2007) describe a "sink-or-swim" approach to staff training as being highly detrimental to SE (p.575), where the content is delivered and staff are expected to make the necessary changes without further input or support. Higgins and Gulliford (2014) highlight a strong need to understand how TA SE might be influenced through training, and utilised a 'coach– consult' method designed to be highly supportive of TA SE regarding behaviour management (although they give no further details regarding the precise nature of this approach). The outcomes of their research suggested that effective training involves providing opportunities for "positive experiences, vicarious learning, verbal support and 'persuasion' and positive physiological conditions" (p.133), all of which they were able to address through their 'coach-consult' approach to build TA SE in behaviour management. This strongly suggests the efficacy of ongoing support and collaboration between the trainer and trainee following the initial training input.

2.3.2. Coaching psychology

Higgin's and Gulliford's (2014) use of the 'coach-consult' model prompted me to further explore the use of coaching in psychology. The Association for Coaching (AC) defines coaching as "a collaborative, solution-focused, results-oriented and systematic process in which the coach facilitates the enhancement of work performance, life experience, self-directed learning and personal growth of the coachee" (AC, 2018). This definition aligns precisely with the type of approach to training implicated by Gibb (2007) and Higgins and Gulliford (2014) as being the most SE-enhancing and consequently the most effective in influencing positive practice change. A literature search into coaching within the field of psychology lead me to the discipline of coaching psychology, a branch of applied psychology heavily influenced by positive psychology (Seligman and Csikszentmihalyi, 2000). The key principles of coaching psychology are "the facilitation of goal attainment, well-being, and positive change" (Adams, 2016, p.231). Cameron & Monsen (1998) highlight the relevance of coaching as a tool for EPs, and research in the area of coaching in schools suggests that teacher coaching and development through education has a positive influence on pupil outcomes (Edwards, 2015; Grissom, Loeb, & Master, 2013). This led me to consider its value as a tool for embedding the practice change which I was intending to instigate through training the TAs to use mediation.

Adams (2016) describes coaching as "an unregulated two-billion-dollar industry", an issue which lead Seligman to describe it as a discipline "in need of a backbone" informed by a rigorous evidence base (2011, p.70). Several studies have highlighted the utility of psychological theory and research in capturing the interactive processes

through which change is accomplished, the optimal conditions for such change and the role of the coach and coachee in moving towards goals and positive outcomes (Murphy and Duncan, 2007; Ryan and Deci, 2000; de Shazer, 1988; Berg and De Jong, 2002). Adams (2016) lists an assortment of psychological models and frameworks, most of which originate from the therapeutic domain, that can be applied to the coaching process in various ways depending on the context. These include person-centred and cognitive-behavioural approaches (Rogers, 1961; Beck, 1976), and Solution-Focused Brief Therapy (SFBT: de Shazer, 1988). Upon further investigation of the principles of SFBT, I felt it had relevance and utility in the context of the current research.

2.3.3. Solution-focused approaches and Solution-Focused Brief Therapy

Solution-focused (SF) practice was originally developed by de Shazer and colleagues in the United States in the 1980s. De Shazer et al. (1986) describe the key to brief therapy as, “utilising what clients bring with them to help them meet their needs in such a way that they can make satisfactory lives for themselves” (p.207), and describe its purpose as helping clients to do things differently and change their behaviour and/or interpretation of situations to achieve a solution.

Franklin (2015) describes the purpose of SF approaches such as SFBT as emphasising an individual’s strengths and resources and concentrating on their future goals and possible solutions. De Shazer et al. (1986) highlight the importance of pointing out what individuals are already doing well regarding the situation, before moving on to what may help move things further towards the desired goal in small

steps. De Shazer et al. (1986) also stipulate that “only a small change is necessary” and that therefore “only a small and reasonable goal is necessary” (p.208) to make significant and lasting positive changes to the individual’s situation and increase the likelihood of success. They also state that a full exploration and understanding of the problem is not necessary, as long as the therapist and client will know when it has been solved and what that will look like. This felt applicable in terms of the intended aims of the TA sessions, which would focus on small-step changes to practice in line with the principles of mediation as a means of gradually embedding these approaches in their classroom practice.

Furthermore, as the TAs had not come to the project with specific problems that they wanted to explore and change, the focus on what positive changes would look like in the context of mediation was entirely appropriate for the current project. In this respect, the SF approach to coaching is more suitable for the current project than other psychologically-informed approaches such as person-centred or cognitive-behavioural coaching, due to the greater focus on initial exploration of the problem before moving on to solution-finding involved in these approaches. Grant and O’Connor (2010), Grant (2012) and Neipp et al. (2015) all found that in comparison to questioning that explores the nature and origins of the problem, or problem-focused questioning, SF questioning instigated a greater increase in positive affect and an increased sense of SE and perceived progress towards goal attainment. This suggests that looking forward to potential solutions has a greater influence on an individual’s confidence in their ability to manage their problems than exploring the problem in greater depth. Although all of these studies recruited university students as participants and not real-world coaching

clients or school staff, the findings have interesting implications for the efficacy of SF questioning in assisting TAs to move towards the goal of practice change to incorporate mediation. These findings align with research that suggests that SF approaches increase SE in a wide range of therapeutic contexts (Rakauskiene & Dumciene, 2013), and support the effectiveness of SF questioning in motivating individuals to pursue their goals as increased SE has been related to a greater commitment to goals and greater persistence following setbacks (Bandura, 1989).

Some research has investigated the use of SF approaches in educational settings (LaFountain & Gardner, 1996; Franklin et. al., 2001). Kelly et al. (2011) highlight the efficacy of a SF classroom intervention called 'Working on What Works' (WOWW). WOWW aims to promote teacher wellbeing and reduce 'burnout' by increasing SE regarding managing pupil behaviour, as well as improving academic and social, emotional and behavioural outcomes for pupils, through building on strengths and focusing on goals and solutions. Kelly and Bluestone-Miller (2009) found that teachers who had participated in a WOWW intervention viewed their pupils as being better behaved and perceived themselves as being more effective classroom managers, suggesting the positive influence of a SF approach on teacher SE as well as staff-pupil relationships.

2.3.4. Solution-focused coaching

Due to the appropriateness of the principles of coaching psychology and SFBT to the goals of the training involved in the current study, I was prompted to further explore SF approaches to inform the structure of the coaching sessions for the TAs, which led me

to the SF Coaching approach (SFC: Hicks and McCracken, 2010). Roeden, Maaskant and Curfs (2012) describe SFC as “a competence-based approach aimed at assisting individuals or groups to make desired changes in their personal or work life” (p.588).

Research into the use of this approach is growing. SFC has been demonstrated to enable positive change within educational settings, with benefits observed in high schools and for teaching staff (Green, Grant, & Rynsaardt, 2007; Grant, Green, & Rynsaardt, 2010). Rhodes (2000) found that when using SFC with staff working with pupils with SEND, staff valued the focus on strengths and the process of engendering solutions through building on their existing skills. Furthermore, Roeden et al. (2012) found that SFC led to increased SE in staff of pupils with SEND and improved relationships between staff and their pupils. Roeden, Maaskant and Curfs (2014) found that SFC was more effective than “coaching as usual” (p.18) in terms of its influence on proactive thinking and the quality of the relation between teachers and pupils with ID (closeness, lack of conflict and lack of over-dependency). The authors suggest that the SFC process may facilitate staff in thinking about how to improve practice through generating goals based on perceived previous successes, which in turn improves their SE.

Hicks and McCracken (2010) describe the three basic principles of SFC as follows:

1. “You don’t have to have a detailed understanding of the problem to find a solution;
2. Focusing on the future creates more useful outcomes than focusing on the past;

3. Effective change is more likely to occur through small steps rather than large ones" (p.62).

These principles align with the intended purpose of TA practice change as although they originate from the therapeutic realm of SFBT, they suit the more practical purpose of making positive changes to what people actually do in their work with pupils in schools. Hicks and McCracken's definition of the differences between SFC and more problem-focused approaches is presented in Table 6:

Table 6: Differences between solution and problem-focused thinking (taken from Hicks and McCracken, 2010, p.62)

Problem-focused thinking	**Solution-focused thinking**
Problem description	Goal/outcome formulation
Focus on the past	Focus on the future
Problem-focused questions: • About problems • About mistakes • About causes	Solution-focused questions: • About solutions • About strengths • About actions

SFC felt like the most appropriate approach to use with TAs who had a) not brought along a specific a problem from which they were looking to move forward and were instead hoping to move towards a greater sense of SE in supporting pupil cognitive functioning; b) had not have volunteered to take part in the training and coaching intervention (as although sessions were closely negotiated with TAs, they were not optional), and; c) may have felt that their efficacy as practitioners was threatened by the implication that they needed such an intervention. The lack of focus on a *problem*,

the emphasis on strengths and future actions and the positioning of TAs as experts in their own professional development was considered to mitigate some of these potential threats to TA SE and willingness to participate. Furthermore, the small-step approach to practice change aligns well with the intention to build TA SE, enhancing their sense of accomplishment by allowing for frequent experiences of success (Higgins and Gulliford, 2014). As Hicks and McCracken acknowledged, "SF thinking pivots around small but meaningful steps that the individual feels they have control over" (2010, p.63).

Hicks and McCracken (2010) define three steps of SFC and some associated examples of questioning:

Table 7: Steps of SFC (taken from Hicks and McCracken, 2010, p.63)

Steps of SFC	**Examples of SF questions**
1. Identify the desired outcome	• *What would you like to be different going forward?* • *I understand what you don't want; what is it that you do want instead?* • *What would you experience differently if you achieved that goal?* • *How will you know if you're making progress?* • *What would be the pay-off from achieving that outcome?* • *How confident are you that something can be done about this?*
2. Building on existing strengths and capabilities	• *Tell me about a time when you were able to successfully deal with a situation like the one you're facing with now. What did you do? How did*

Steps of SFC	Examples of SF questions
	you do it? What did you draw upon that made you successful? • *Can you think of a time in the past when you were successful in demonstrating behaviours similar to the ones you want to develop now?* • *What are the positives you can build on to achieve what you want?*
3. Build commitment to small steps forward	• *On a scale of 1-10, where are you now?* • *What would you need to do to get to an X?* • *On a scale of 1-10 how confident are you that the actions you've described will take you in a useful direction?* • *On the same scale, what's your commitment to taking these actions?*

The steps detailed above were used to inform the structure of the coaching sessions with TAs throughout the duration of the mediation intervention.

2.4. Summary

Research into the effectiveness of TAs and their work with children and young people has suggested some fundamental concerns with the current model of TA practice and deployment in schools (Blatchford, Russell and Webster, 2012; Webster and Blatchford, 2013; Webster and Blatchford, 2017). As a result, a document was released entitled 'Making Best Use of Teaching Assistants' (Sharples, Webster and Blatchford, 2015), which provided guidance for TA deployment and practice and suggested, among other things, the necessity to improve the nature and quality of TA talk, focus on fostering independence and avoiding task completion and to utilise TAs to deliver regular, brief, structured, evidence-based interventions with the appropriate level of support and training. Other research has suggested that a focus on the pedagogical approaches of TAs is required, particularly with regards to the concept of scaffolding, where learner engagement, motivation, independence and autonomy in selecting learning strategies are central (Radford et al., 2015). I noted that DA-inspired mediation incorporates the fundamental aspects of scaffolding necessary to improve the moment-by-moment experiences of learners with an emphasis on pupil independence and autonomy through the use of base-lining, bridging and a focus on the cognitive functions essential for effective learning (Lidz, 2002). Combined with suggestions by Haywood and Lidz (2007) that mediational practices should be used alongside the delivery of the curriculum, I judged that training TAs to use these approaches in their learning interactions with pupils would be an advantageous undertaking within a school setting.

When viewed in light of research exploring TA SE, which suggests that TAs feel

frequently undermined and undervalued with regards to their role, and that this is of detriment to their feelings of SE (Higgins and Gulliford, 2014), it became clear that recognition and development of TA skills to the same degree as other professionals is crucial (DfE, 2015). Furthermore, research suggesting that collaborative and supportive training can develop a positive sense of SE for TAs regarding the acquisition of new skills (Higgins and Gulliford, 2014) led to the decision that a supportive follow-up in the form of coaching sessions would be offered to TAs to facilitate the embedding of mediational approaches into their classroom practice. For this, a weekly SFC approach delivered over a six-week period was selected due to the focus on moving forward in small steps towards agreed goals and the emphasis on strengths and action (Hicks and McCracken, 2010). It was anticipated that the amalgamation of the mediation training and follow-up SFC sessions would lead to positive changes in TA practice with regards to supporting pupil cognitive functioning and in TAs' reported SE in relation to this aspect of their role, as well as improving outcomes for pupils with whom they were working in terms of their cognitive functioning.

CHAPTER 3: DESIGNING THE RESEARCH

3.1. Research aim and questions

The aim of this research was to explore the influence of a coaching intervention focusing on mediation delivered by a TEP to a small number of TAs in a primary school. As a result, the following research questions were formulated:

- **Research question 1:**

  How did the introduction of a coaching intervention for TAs in dynamic assessment-inspired mediation influence TA practice and self-efficacy in a primary school?

- **Research question 2:**

  How did the introduction of a coaching intervention for TAs in dynamic assessment-inspired mediation influence pupil outcomes in relation to targeted cognitive functions?

3.2. Design frame and superordinate methodology

3.2.1. Philosophical underpinnings

When selecting the most appropriate research design frame, careful consideration was made with regards to the research purposes. Thomas (2009) states that emerging research questions will inevitably determine the design frame. Using Thomas's vocabulary, I am asking "what happens" to TA practice and SE regarding the support

of pupil learning when a mediation intervention is carried out in a primary school, as well as “what happens” to pupil outcomes as a result of this intervention (2009, p.10).

“What happens when” questions lend themselves to an experimental design. However, this was not considered appropriate for my research due to my ontological and epistemological position. According to Hitchcock and Hughes (1995) a researcher's ontological perspective inescapably shapes their approach to exploring reality, and consequently the design frame and methodologies utilised. Empiricism requires the isolation of variables to infer causal relationships, assuming a realist ontological position where there is an external reality that is measurable and independent of subjective interpretations (Gray, 2004). Although such empiricism can be advantageous in that it allows for robust causal assertions, generalisable findings pertinent to a wider population and future replication in subsequent research (Cohen, Manion and Morrison, 2011), the assumption of an objective reality is problematic when considering social phenomena, which are inexorably entangled with individual lived experiences (Robson, 2002). It is here that the principles of holism, which suggest that the only real elements of the world are the wholes, not the individual parts that comprise the wholes (Smuts, 1927), become pertinent. As a TEP, I am passionate about these principles, and the work of psychologists such as Bronfenbrenner (1979) emphasises exploring the individual within the ecosystems in which they function (e.g. families, communities) as opposed to as a separate entity.

Consequently, Collaborative Action Research (CAR, which will be described in Section 3.2.2) was considered philosophically appropriate due to its alignment with the

principles of holism in that it does not attempt to isolate variables which arguably cannot be isolated and its interest in the lived experiences of participants. Furthermore, as will be described in Section 3.2.2, the nature of CAR means findings are processed and shared with stakeholders, highlighting the importance of shared understanding in line with the principles of social constructivism and its concern with "the local, specific, unique and changing contexts in which people work together to facilitate change" (Kelly, Woolfson and Boyle, 2008, p.101).

However, as this research aimed to make some causal claims with regards to the impact of the coaching intervention in the school, Realistic Evaluation (RE) was used, an approach grounded in the realist paradigm, where there is an assumption that some form of social reality exists independently of subjective stakeholder perceptions. RE was used to uncover underlying social mechanisms regarding the influence of the mediation intervention, as well as to engage in action-planning for future iterations of the intervention. As acknowledged by Wilson and McCormack (2006), the realist philosophy underpinning RE also assumes that "social reality is largely an interpretative reality by social actors" (p.56), and that "the role of causation consequently requires a more thorough examination beyond the usual cause-and-effect emphasis of traditional research methods" (p.51). This acceptance that any findings are mediated by the subjective interpretations of the stakeholders and myself is in line with a critical realist (CR) approach (Bhaskar,1975). CR, also referred to as "scientific realism" by Pawson and Tilley (1997, p.55), is a modernised version of what is sometimes referred to as "naïve realism" (Robson, 2002, p.31), or the idea that our senses provide us with a direct awareness of the world and reality. CR suggests that

researchers cannot directly access social realities through scientific method, and that attempts to do so are fallible. However, as social mechanisms with observable properties are assumed, they are worthy of investigation, with the caveat that any outcomes are mediated by subjective interpretations and are subject to fallibility due to the dynamic nature of the social world (Sayer, 2000). RE was considered the most appropriate method of evaluating the intervention due to its emphasis on any identified causal mechanisms operating in context to produce outcomes, and its interest in the role of stakeholder choices and stakeholders' capacity to enact those choices within the social context.

3.2.2. Collaborative Action Research

This project was conducted as action research (AR), where "the action drives the research and is the motivating force" (Mcniff, Lomax & Whitehead, 1996) and the aim was to improve practice within the school. Thomas (2009) defines AR as "research that is undertaken by practitioners…for the purpose of helping to develop their practice" (p.112). He describes it as "empowering" practitioners and being done "by" them and not *to* them (p.113). He proposes ten steps of AR which can be revisited in an iterative manner to encourage evaluation and ongoing development:

Table 8: Steps of AR (taken from Thomas, 2009, p.113)

Action cycle 1	**Action cycle 2**
1. Have an idea or see a problem	6. Have a revised idea
2. Examine the idea or problem and gather information about it	7. Examine and gather information about the (revised) idea or problem
3. Plan action	8. Plan action
4. Take action	9. Take action
5. Reflect on the consequences	10. Reflect on the consequences

This model has significant applicability to educational contexts, where reflective practice and continuing professional development are central. According to Sagor (1992), AR can be collaborative in nature where it draws together "teams of practitioners who have common interests and work together to investigate issues related to those interests" (p.10), therefore promoting strong relationships between these professionals to improve practice. As a result, the current research is collaborative in its involvement of many other individuals (TAs, teachers, pupils) and the emphasis on shared ownership of practice, leading to "a research-based self-developing community" (Lomax, 1990, p.5). The research was done *with* the staff and not *to* them, and they were involved at every step of the process.

Thomas (2009) discusses a "spiral of steps", whereby the research is approached in cycles of action, and reflection involves "moving forward, always building on what you are discovering" (p.113). The ongoing, cyclical nature of CAR allows for the

intervention to be customised to suit the specific context. This means that at the evaluation stage, if positive change has not been observed, changes to the intervention can be made accordingly. Myers et al. (1989) state that the centrality of the subjective realities of stakeholders at successive stages in CAR avoids a top-down sense of implementing change by promoting greater ownership of the outcomes by stakeholders. As the coaching intervention had a danger of feeling oppressive in its assumption that TAs needed to change practice, CAR allows TAs to take ownership of the project and use the iterations to adapt the process until it works for them. This also upholds part of the criteria defined by Oja and Smulyan (1989) for conducting successful CAR: democratic leadership, where the changes are not imposed upon TAs but where they have an equal role in determining how the intervention is conducted. Other criteria stipulated by Oja and Smulyan (1989) are communication between participants and positive relationships. In the case of the current project, the weekly coaching sessions and meetings involving all stakeholders aimed to enable regular communication between participants and to promote supportive and positive relationships.

CAR is an attractive design frame as it promotes ethical research by ensuring beneficence to stakeholders through the focus on positive change (British Psychological Society: BPS, 2014). The practice of sharing and processing findings with stakeholders aims to facilitate their comprehension of the implications of outcomes and allow them to play an active role in subsequent action-planning, as these experiences of ownership will likely lead to more established change. CAR also endorses the ethical standard of transparency (BPS, 2014), as research is done alongside stakeholders and not *to* them (Reason and Bradbury, 2008).

The cyclical nature means the CAR design frame can be a time-consuming enterprise, and its collaborative approach necessitates reaching a level of participant agreement, which can have time costs. This volume presents Thomas's first five steps of AR (2009) which were followed during Phase 1 of the CAR project, and an action plan for a further cycle (Phase 2) is presented, although the implementation of this action plan and any further cycles will take place beyond the completion of this volume.

Furthermore, it was recognised that the need to renegotiate ongoing consent from busy staff can threaten the project's continuity, and TA resistance to being coached could further intensify this threat. However, I judged that the centrality of participants in the process should act as a suitable buffer for such concerns, and that ethically, CAR was an appropriate design frame for research conducted in a stressful school environment.

The structure of the CAR project is detailed in Table 9. The stages are based on Thomas's initial five stages of AR (2009), but instead of initial examination of TA practice within the school, it was felt by the SENCo that findings from my previous research project regarding TA practice were also relevant in this setting (as discussed in Table 9). It was therefore considered appropriate that the current project jumped immediately to implementation of the 'Medi8' and coaching intervention.

Table 9: Structure of the CAR project

Stage of CAR (taken from Thomas, 2009, p.113)	**Description of actions taken**
"Have an idea or see a problem" / "Examine the idea or problem and gather information about it" *September 2017*	Interviews with TAs during a professional practice research project conducted during my training within a local primary school identified that they spent most of their time supporting pupils 1:1 in the classroom, but that this was often in a behaviour management capacity and not in terms of supporting learning, and that although learning interventions are the most rewarding aspect of their work, they rarely spend time involved with these. It was these TAs that were the intended focus of the current research. However, due to time constraints the original school unfortunately did not feel they could support the project. In a planning meeting with another primary school on my caseload, it became apparent that the concerns raised by TAs in the original study were not unique to that school, and the SENCo reported that the intended research would be of equal value to TAs within her school.
"Plan action" *September 2017*	• Initial meeting with the SENCo and head teacher to explain the details and structure of the project and to identify a small number of TAs as potential participants • Recruitment of three TAs to be the focus of the mediation intervention by the SENCo and informed consent obtained

Stage of CAR (taken from Thomas, 2009, p.113)	**Description of actions taken**
	• Facilitation of discussions between the SENCo and TAs about potential target pupils • Recruitment of three target pupils and informed consent from pupils and their parents obtained • Initial meeting conducted with key stakeholders (TAs, SENCo and the class teachers of target pupils) to discuss the research, negotiate logistics of the training and coaching sessions and highlight any contextual factors that may influence or hinder the progress of the research
"Take action" *October – December 2017*	• A baseline of the target pupils' cognitive functions with the TAs and class teachers using the CAP • A baseline of TA SE using a SE scale designed by myself • An initial training session with the TAs, whereby the principles of mediation and the list of cognitive functions were explained, and TAs were provided with a 'Medi8' pack included resources to scaffold the mediation process and some modelling of mediation in the form of a video clip • Weekly SFC slots of 20-30 minutes for six weeks
"Reflect on the consequences"	An RE to determine how the coaching intervention influenced TA practice and SE and pupil outcomes, involving the following:

Stage of CAR (taken from Thomas, 2009, p.113)	**Description of actions taken**
December 2017 – March 2018	• Semi-structured interviews with TAs and the SENCo to identify key contexts, mechanisms and outcomes involved in the intervention • Focus groups for class teachers and target pupils to key contexts, mechanisms and outcomes involved in the intervention • Completion of post-intervention CAP assessments to explore how the project influenced pupil outcomes in relation to their targeted cognitive functions • Completion of TA SE scales post-coaching intervention • Building of a realistic programme theory which describes the ways in which actions taken in the context triggered various mechanisms to generate complex outcome patterns (Pawson and Tilley, 1997)
"Have a revised idea"/ "Plan action" *March 2018*	Following the RE, the results were disseminated to stakeholders, and a focus for the next iteration (Phase 2) was agreed whereby changes will be made in light of the findings to enable the deeper embedding of the mediation practice.

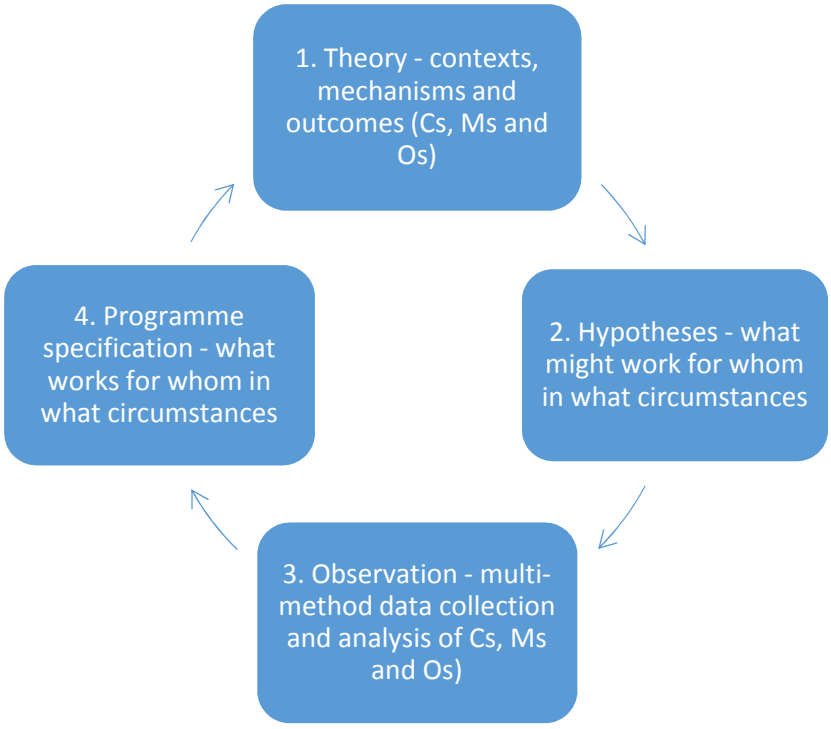
3.2.3. Realistic Evaluation

Robson (2002) defines evaluation as "an attempt to assess the worth or value of some innovation, intervention, service or approach" (p.202). Evaluation in the EP field is widely accepted as a means of judging the efficacy of interventions (Baxter and Fredrickson, 2005), and therefore as vital. Robson (2002) differentiates between outcome and process evaluation, where outcome evaluation is the more traditional approach concerned with assessing the outcomes of an intervention or programme, and process evaluation is concerned with ascertaining how and why programmes work. Psychologists often adopt an outcome-based approach to evaluation when assuming the role of scientist-practitioner (Shapiro, 2002). However, Pawson and Tilley (1997) criticise such experimental approaches in the psychological domain for their reductionism and their failure to consider the complex interplay of factors within social programmes and the centrality of context. Maynard (2000) argues that for outcome evaluations to be truly meaningful, they must be accompanied by process evaluations that consider the *hows* and *whys* of a programme's efficacy within the specific context.

Realistic Evaluation (RE: Pawson and Tilley, 1997) is a framework designed to uncover the social mechanisms (or generative causal elements) within social programmes (or programmes developed to address social problems) that lead to certain outcomes. RE is interested in how these mechanisms work together within complex social programmes to enable social change (i.e. changes in TA practice, SE and pupil outcomes), so "what it is about a programme that makes it work" (Pawson and Tilley, 1997, p.26). RE is concerned with what works for whom and in what context. The aim

of RE is to develop, refine and evaluate theories about social programmes to create programme theories, where “a set of explicit or implicit assumptions by stakeholders about what action is required to solve a social, educational or health problem and why the problem will respond to this action” is illuminated through the research (Chen, 2014, p.66). Figure 2 depicts the RE approach.

Figure 2: Overview of RE framework taken from Pawson and Tilley (1997, p.85)



According to Pawson (2013), social programmes are inherently complex as they comprise human subjects within complicated social, historical, cultural and political contexts. It is therefore necessary that the identification of generative causal mechanisms, which are viewed in RE as accounting for any uniformities within the outcomes of social programmes, includes the variety of stakeholder perspectives and interpretations, and is seen as firmly embedded within the wider context (Maxwell,

2012). As a result “the relationship between causal mechanisms and their effects is not fixed, but contingent” (Sayer, 1984, p.107). Merton and Merton acknowledge that the process of developing “a unified theory that will explain all the observed uniformities of social behaviour, social organisation, and social change” is not possible without taking into account “the minor but necessary working hypotheses that evolve in abundance during day-to-day research”, and therefore suggests “middle range” programme theories, which lie somewhere between the two (Merton and Merton, 1968, p.39).

In order to explicate causal elements of a programme theory, Pawson and Tilley (1997) describe the creation of context, mechanism and outcome configurations (CMOCs), whereby the outcome will only occur within similar contexts where similar mechanisms are fired. Table 10 presents what is meant by each of the aspects of CMOCs:

Table 10: Aspects of Pawson and Tilley’s context, mechanism and outcome configurations (summarised from Pawson and Tilley, 1997)

Aspect of CMOCs	**Description**
Contexts	Social conditions (norms, rules, values) which exert influence over and place restrictions on the efficacy of mechanisms acting in a social programme.
Mechanisms	Underlying processes embedded within social realities which help to explain what it is about a social programme that makes it work (or not) in relation to

Aspect of CMOCs	Description
	stakeholder choices and their capacity to put these into practice.
Outcomes	Regularities and patterns ensuing as a result of the mechanisms for change acting in context.

Pawson and Tilley (1997) present the following equation to demonstrate the relationship between these elements:

"Outcome = mechanism + context" (p.57)

The current RE took place through semi-structured interviews (alongside quantitative measures of TA SE and pupil progress with cognitive functions) which aimed to test my programme theory, derived from the literature review, that CAR and a coaching intervention focusing on mediation would enable TAs to practice in a way that supports the cognitive functioning of the pupils with whom they work, and improve their SE, "with eyes open for other possibilities" (Pawson & Tilley, 1997, p.87). From this I intend to "build a realistic theory making sense of the ways in which actions taken, in the context, triggered various mechanisms to generate complex outcome patterns" (Pawson and Tilley, 1997, p.87). Table 11 presents the development of the programme theory that took place following the literature review:

Table 11: Development of programme theory based on literature review

Aspect of CMOCs	**Programme theory**
Contexts	• TAs take pedagogical responsibility for the education of pupils with learning needs in the classroom • TAs do not have specific training in pedagogical approaches and supporting pupils' learning skills • TAs feel devalued and have low-SE about their role • A supportive school environment exists where school leaders are willing to hold TAs and their professional role in the same esteem as other practitioners
Mechanisms	• Employment of a CAR model, creating channels to facilitate positive communication between key stakeholders and encouraging communication between TAs, teachers, pupils and the researcher to promote the efficacy of the intervention • Bespoke training in mediational practices (involving carefully-scaffolded resources with prompts and a pack of mediation tools) • SFC for six weeks following the initial training to embed mediational approaches in TA practice, and to allow for individualised target setting for TAs (and pupils) to ensure that coaching and subsequent mediational approaches used are pitched appropriately (i.e. within the TAs' and pupils' ZPDs) • Opportunities for modelling and observation of mediational approaches by myself to promote effective TA practice

Aspect of CMOCs	Programme theory
Outcomes	• Increased TA SE in supporting cognitive functions • Changes in TA practice: TAs are able to more effectively support pupil cognitive functioning • Improvements in targeted aspects of pupil's cognitive functioning

3.3. Access and ethical considerations

Table 12 details the numerous access and ethical considerations that were taken prior to the undertaking of the CAR project through the consultation of ethical guidance issued by the BPS (2014).

Table 12: Ethical considerations based on the BPS Code of Human Research Ethics (2014)

Feature of ethical guidance	**Steps taken to address this feature**
Informed consent	• The three TAs consented to participating in the coaching intervention by signing a consent form following an initial meeting where the project information sheet for staff was read out and explained in detail by myself (Appendix 1 & Appendix 2). • The SENCo and class teachers of the target pupils consented to participating in the CAR process by signing a consent form following an initial meeting where the project information sheet for staff was read out and explained in detail by myself (Appendix 3). • Parents/guardians of the target pupils consented to their children's participation in the intervention by signing a consent form after reading a detailed project information sheet (• Appendix 4 & Appendix 5). *The three target pupils consented to participating in the intervention following a simple description of the project by myself and by signing a child-friendly consent form which was explained in person by myself (* • Appendix 6).
Confidentiality	• Although full confidentiality could not be offered as some aspects of what the participants said was reported, participants were assured of their anonymity in the recording of findings, whereby the mechanisms extracted from the data will be anonymised using codes (TA1, 2 and 3 for TAs, T1, 2

Feature of ethical guidance	Steps taken to address this feature
	and 3 for teachers and P1, 2 and 3 for pupils). Furthermore, to help maintain participant confidentiality, the school were asked to agree to keep their participation in the research confidential. • Due to the small sample size, it may be possible that staff and parents will be able to identify individual participants in some of the findings. Participants were informed that due to the nature of the CAR project, the information is being utilised to realistically evaluate the intervention in order to make it more effective within the school context and not to pass judgement on individual participants.
Withdrawal	• Participants' rights to withdraw were explicitly stated in the participant information sheets and consent forms for the TA, pupils, parents, SENCo and teachers. In addition, I spoke in person to the target pupils about their right to withdraw and different ways that they could do this. All participant information sheets stated that they had one month after the project's completion in which to inform me if they did not wish their data to be included. It was made clear that there would be no consequences for the participants if they chose to withdraw from the study.
Beneficence	Benefits to the school: • Delivery of an evidence-based coaching intervention aimed at enabling TAs to effectively support learning in their interactions behaviour from the TEP • Potential change in the target pupils' cognitive functioning and the TA's pedagogical approach

Feature of ethical guidance	Steps taken to address this feature
	Benefits to the research community: • A practical response to the need to improve TA practice and the way in which EPs can be used in a coaching capacity and to facilitate CAR to enable positive change, as well as an exploration of the mechanisms by which dynamic assessment-inspired mediation can influence TA practice and pupil outcomes in similar contexts in a positive way.
Status relationships	• It was acknowledged that due to status relationships within the school, TAs and teachers may be reluctant to disclose information that may appear critical of school management. To negate this, the anonymity of participants in the report was reinforced prior to interviews and the focus on positive change was emphasised. To avoid the TAs feeling under scrutiny and as though they were being performance-managed through the process, the introduction to the research was framed very carefully in terms of the opportunity it would afford for professional development and the idea of up-skilling and carving out a more fulfilling role with the learning of pupils at the centre.
Data ownership	• It was emphasised to staff in the initial meeting that they would be able to take ownership of the findings in order to take the programme forward in the school with an aim to embedding the

Feature of ethical guidance	Steps taken to address this feature
	mediation techniques within TA practice, initially with continued support from the EPS but eventually autonomously.
Thesis accessibility	• A summary of the key findings of the RE were presented in a brief and accessible information sheet to the key stakeholders of the project (Appendix 7). A child-friendly version was disseminated to the target pupils which I also explained in person (Appendix 8). A further summary detailing the agreed programme adaptations for the subsequent research cycle was presented to the stakeholders to support the staff in taking the project forward (see Section 5.4). The key stakeholders were also informed that (on request) they can gain access to the final write up of the research project as it appears in Volume 1 of my thesis.

3.3.1. Ethical considerations in researcher-practitioner research

When taking on a researcher-practitioner role in the research process, empirical objectivity is not possible as a foundation for ethical decision-making, meaning that there is a greater emphasis on responsibility and accountability (Mohr, 1996). CAR and RE are subject to a set of distinct ethical considerations, which Zeni (2001) describes as five 'checkpoints': location, relationships, interpretation/definition, publication and institutionalisation (p.17). A summary of the ways in which I adhered to Zeni's checkpoints is presented below:

Table 13: Considerations of Zeni's checkpoints in the current project (2001, p.17)

Checkpoint	**Definition**	**Ethical question**	**Consideration in the current project**
Location	What the researcher brings to the inquiry – gender, race, class, roles, status in the institution	How do these aspects of culture connect or divide the researcher from the participants?	My position and identity as a researcher is explored in the rationale for conducting TA research (Section 1.2.1), and the influence of my world views on the design of the study is explored in the section on philosophical underpinnings (3.2.1). Throughout the research, I considered my role and location in the CAR process and documented this in my reflective journal, and adaptations to the coaching sessions were made where appropriate as a result of my reflections.
Relationships	The human dynamics, friendships, and professional responsibilities that may be threatened or enhanced by the research	To whom is the researcher accountable?	As the link EP for the school involved in the CAR, a positive working relationship had already been established with the SENCo, which facilitated the negotiation and progression of the project. This also meant that I needed to ensure the beneficence of the school as a result of the project due to my responsibility to support positive outcomes for pupils and staff. The benefits of the project were discussed in depth at the initial meeting with stakeholders and were further iterated in the information sheets issued to participants. A feedback session was also conducted to

Checkpoint	Definition	Ethical question	Consideration in the current project
			communicate the findings of the project following the RE and to highlight the positive outcomes to stakeholders. Creating a positive rapport with TAs was also considered fundamental to the efficacy of the project, and the selection of collaborative approaches such as CAR and RE, alongside the ongoing SFC sessions, was intended to foster positive relationships with the TAs through empowering them to present their views (Pawson and Tilley, 1997), positioning them as crucial to the success of the project and as experts in their own lives.
Interpretation/ definition	The ways in which the researcher considers multiple perspectives and presents the subjective experiences of participants	How do research participants define the matter?	To strengthen the credibility of the highly-subjective process of creating a programme specification from the semi-structured interviews and self-reported data, a feedback session was conducted where the programme specification that had been developed through the RE was shared with the participants. They were asked to confirm whether the specification accurately represented their views, and that we were able to reach a consensus regarding the theory that was derived as a result.

Checkpoint	Definition	Ethical question	Consideration in the current project
Publication	The ways in which the researcher conveys the research to a wider audience	How does the researcher present a complex picture in a trustworthy and respectful manner to wider audiences?	A summary report detailing the findings of the RE will be provided to the EP service and the school, with a child-friendly version for the target pupils. Steps taken to ensure anonymity of participants are discussed in Table 12. I intend to submit the final thesis for publication in an academic journal (e.g. Educational Psychology in Practice).
Institutionalisation	Legal/procedural stipulations in organisations (e.g. University or school)	What requirements must be adhered to when research involves various organisations?	School staff were informed of the necessity to adhere to the BPS Code of Human Research Ethics (2014), the University of Birmingham's Code of Practice for Research (2012) and data protection protocols. There were no conflicts between the school's policies and procedures and the requirements of the project, as senior managers were happy to release TAs in order to access the weekly coaching sessions.

3.4. Reliability and validity

Thomas (2009) defines reliability as "the extent to which a research instrument such as a test will give the same result on different occasions" (p.105). In the case of the current project, it could be argued that replication is unlikely to produce similar results due to the influence of participant and researcher interpretations and biases, diminishing the reliability of the findings. Thomas states that the concept of reliability is a largely "irrelevant" in the field of social science (p.105), particularly in research involving interpretation, and states that being "alert" to biases and acknowledging your position as a researcher is more relevant to such research (p.106).

As opposed to reliability, the concepts of "credibility" and "trustworthiness" are perhaps more appropriate in the current research, where vividness and authenticity when describing the phenomena and the degree to which this description can be trusted following appraisal of the processes and procedures utilised in the research are key (El Hussain, Jakubec and Osuji, 2015, p.1183). Both the credibility and trustworthiness of the findings were further promoted through the feedback session which I conducted in order to clarify with the stakeholders that my interpretation accurately reflected their views regarding the project. El Hussain, Jakubec and Osuji's (2015) also propose the concept of "auditability" (p.1183), whereby a detailed record of all methodological decisions (e.g. "sources of data, sampling, decisions and analytical procedures and their implementation", p.1183), is used to improve the "confirmability" (p.1183) of findings and allow for other researchers to repeat the same research process. As a result, a detailed account of the research process is included in this chapter to enhance the trustworthiness of my findings and to allow for future replication, although it is

acknowledged that CAR and RE are inherently subjective processes and therefore any replication of results cannot be anticipated.

Thomas (2009) suggests that in research where there is no random sampling and the researcher may not have clear expectations regarding what the research will find, the concept of validity (or the degree to which instruments measure what they are supposed to measure) also becomes unserviceable. Furthermore, in line with my philosophical views and those of CR, the realities of staff and pupils within the context of the focus school are interpreted, rendering the findings solely relevant to the current participants and the current school, with no attempts at wider generalisation. El Hussain, Jakubec and Osuji (2015) refer to “fittingness” or “transferability” of findings (p.1182), or the demonstration through the data analysis that the findings have some applicability to others in similar contexts, and these are more appropriate concepts to consider when appraising the rigour of the current study.

CHAPTER 4: METHODOLOGY

4.1. Research context

4.1.1. The Local Authority

This research took place in a school within a LA in the Midlands (UK). As of January 2016, this LA consisted of 85 mainstream primary schools and academies. Of the compulsory school age pupils attending primary schools in the LA, there was an above average percentage of pupils with SEND, an above average percentage of pupils eligible for free school meals and an above average percentage of pupils with English as an additional language (EAL) at the time of the current project (DfE, 2017a).

4.1.2. The school

The school in which this research took place is a community-maintained primary school for boys and girls aged 3-11 years. The school is above average in size and three classes of 30 pupils from reception to Year 4 and two classes in Year 5 and 6. A high number of pupils are supported by pupil premium funding (approximately one third) and have EAL (approximately three quarters). Nine out of ten are not White British, and the largest ethnic population attending the school is Pakistani. The school's most recent Ofsted report (June 2016) states that 'a higher proportion (of pupils) than usual receive school support because they have SEND, although very few are in receipt of an EHCP or a Statement of SEN'. The school was rated as 'Good' in this inspection, with teaching, learning and assessment listed as their key areas for development. Appropriate differentiation of work to match pupil needs and adapting tasks based on

pupil responses were explicitly mentioned in the Ofsted report, suggesting that the mediation intervention is well-placed to meet the development needs of the school.

4.1.3. The researcher

The personal rationale for conducting this research is discussed in Section 1.2.1. During my training for a career as an EP, I have developed an interest in research which improves practice in schools and facilitates systemic change to benefit the largest number of pupils possible. I was therefore interested in exploring the ways in which coaching the TAs to use an effective learning intervention in the form of dynamic assessment-inspired mediation could influence their practice and their perceived SE, and anticipated that it would do so in a positive manner. I have also become a strong advocate of strengths-based interventions rooted in positive psychology (Seligman and Csikszentmihalyi, 2000), which draw on practitioner successes and not difficulties to engender positive change, which has led to the SF approach to the coaching sessions. Furthermore, as discussed in the section on philosophical underpinnings (3.2.1), my world views are in line with the principles of CR, rendering the CAR and RE processes appropriate frameworks for the research design.

4.2. Recruitment of participants

4.2.1. Teaching assistants

The TAs (and target pupils) were recruited opportunistically within the participating school (which was also recruited opportunistically from my caseload). Following the negotiation of the CAR project with the school, a discussion took place with the SENCo

and head teacher about the recruitment of three TAs who would be appropriate for participation in the coaching intervention. It was made clear that this was a professional development opportunity for TAs and should be presented to them as such. The SENCo and head teacher put forward three TAs who they felt would benefit from the intervention and who they thought would value the development opportunity. It was necessary to rely on the appraisal of senior management in the school regarding which TAs would be appropriate participants due to practical factors such as capacity and availability. This did however mean that the purposes behind recruiting TAs as participants were not transparent, and this may have had implications for the findings of the study.

As their line manager, the SENCo was then asked to introduce the CAR project informally to TAs, and all three TAs showed an interest in participating in the project. They were therefore invited to the initial meeting with myself, the SENCo and class teachers whose classes they regularly supported, where the details of the project were explained in greater depth using the project information sheet for staff (Appendix 1) and the consent forms were administered (Appendix 2 & Appendix 3). The TAs involved were all females who had been working in the role for 12, 19 and 20 years. The model of TA delivery in the school meant that TAs were deployed to support specific year groups, and moved between classes depending on where they were most needed to provide support. The TAs selected for the project were attached to Years 1, 2 and 6, and this therefore guided the recruitment of target pupils as it was necessary to select pupils from these year groups.

4.2.2. Teachers and SENCo

The SENCo was included as a participant due to her role as line manager for the TAs, as well as the fact that she was a member of the senior leadership team in the school, meaning she would be instrumental in communicating with the head teacher and facilitating any change on an organisational level. The class teachers who became participants in the project were those whose classes the TAs regularly supported and who the SENCo felt would be comfortable with and competent in making the necessary adjustments to support the TAs in their endeavour to make changes to their practice.

4.2.3. Target pupils

During the initial meeting, TAs and class teachers were asked to identify a pupil who would benefit from targeted one-to-one support of their cognitive functions, and with whom the TAs were happy to work with on a regular basis for the duration of the intervention. During this discussion as part of the CAR process, it was decided that the target pupils should not be those with the most severe SEND, but who experienced needs in some areas of their learning. This decision was made in order to render the pupils more representative of other pupils at the school and to facilitate the TAs in acquiring mediation skills, as it was felt that it may be more challenging for them to initially utilise mediational strategies with pupils with significant needs. The selected pupils were therefore not on the SEN register, but were considered to experience needs in specific areas of their learning, meaning they would benefit from targeted mediation. The pupils were recruited from the year groups to which the TAs were attached (Years 1, 2 and 6), and consisted of two girls (Years 1 and 2) and one boy (Year 6).

Once the TAs and teachers had agreed on three target pupils, the SENCo introduced the project to them and their parents in an informal manner to gauge their interest. Information sheets and consent forms were then sent to parents (see

Appendix 4 & Appendix 5), and I met with the three pupils to explain the project and obtain consent from them in person (

Appendix 6).

4.3. The ‘Medi8’ intervention

Drawing on the relevant theory behind mediational practices detailed in Section 2.2.2, a training package was created to introduce TAs to dynamic assessment-inspired mediation. This package consisted of a PowerPoint presentation, a video, a demonstration and some hand-out materials, including the ‘Medi8’ pack. Table 14 provides details of the various aspects of the training package and the theory and research underpinning the inclusion of these aspects, and Figure 3 presents an image of the elements involved in ‘Medi8’ pack. The materials are included in full in Appendix 9.

Figure 3: Image of the 'Medi8' pack

Table 14: Aspects of the 'Medi8' training package

Aspect of 'Medi8' (and underpinning theory/research)	**Description**	
PowerPoint presentation	Introduction to mediation and the ZPD (Feuerstein, 1979; Haywood, 1992; Lidz, 2002; Haywood and Lidz, 2007; Deutsch & Mohammed, 2010; Vygotsky, 1978)	The opening slide of the presentation involves a description of the concept of mediation as 'the process of intervening to enable the pupil's learning' and the 'quality of the interaction between mediator (often the parent or teacher) and learner (the mediatee) during a specific learning task'. The slide also includes an explanation that mediation allows them to see 'what is possible for a learner with the right kind of intervention and instruction from their teacher', and that they will be focusing on 'teaching pupils how to use skills to learn instead of just getting the answers correct'. The next slide is an introduction to the ZPD using a graphic to make it clear that learning occurs in the zone between what is known and what is unknown, and where the skills are too difficult for the child to master on their own, but can be achieved with guidance and encouragement from a teacher. The following slide involves a statement as to why it is important for TAs to learn how to mediate. They are described as 'well-placed' to carry out mediation due to their one-to-one work with pupils both inside and outside the classroom.

Aspect of 'Medi8' (and underpinning theory/research)	**Description**	
	Before you start: Task analysis and cognitive functions (Feuerstein, 2009)	This slide replicates the information on the 'Medi8' planning sheet. Prompt questions are provided to encourage TAs to conduct a task analysis (e.g. 'What cognitive functions does the task require? Does the pupil have the basic skills or knowledge to attempt this task? Do you need to change the task to make it more accessible?). A list of cognitive functions is then provided, and during the training an example task of writing a paragraph about a holiday was discussed in relation to the relevant cognitive functions, as well as how this task could be adapted to support needs in various areas (e.g. speech and language, attention).
	Before you start: Planning mediation strategies (Deutsch and Mohammed, 2010)	This slide replicates the information on the 'Medi8' planning sheet. TAs are referred to their list of intervention strategies from the CAP (discussed below).

Aspect of 'Medi8' (and underpinning theory/research)	**Description**	
	Before you start: Base-lining and level of mediation scale (Deutsch and Mohammed, 2010; Yeomans, 2016)	This slide replicates the information on the 'Medi8' planning sheet. Base-lining is explained and TAs are asked to let the pupil have a go before intervening. The level of mediation scale is then depicted from the lowest level of mediation (encouraging the child to identify the problem themselves) to the highest (hand-over-hand modelling). An example task of recalling an array of images was then given to TAs and mediation was demonstrated by myself (e.g. "How could you help yourself remember?").
	The eight components of 'Medi8' with prompt questions (Lidz, 1991; 2002; Haywood & Lidz, 2007; Yeomans, 2016)	The eight elements of 'Medi8' were created by grouping aspects of Lidz's Mediation checklist (2002) and simplifying the language to make the concepts more accessible to TAs. The elements are preceded by the phrase "During the task, help the pupil to…" in order to focus the TAs on their intention to intervene with the pupil's cognitive functions, and the eight elements are as follows: 1. Be independent! 2. Pay attention! 3. Understand the task! 4. Share thoughts!

Aspect of 'Medi8' (and underpinning theory/research)	Description	
		5. Make a plan! 6. Master the task! 7. Challenge themselves! 8. Make connections! Helping the pupil to 'Enjoy' is a final element that is expected to permeate the entire learning experience. The elements are presented in an order that fits the chronological progression of the majority of learning tasks, but it was explained to TAs that they can revisit elements or skim over any that the child is already doing effectively. Each element includes some elaboration that explains the concept further. The subsequent slides then offer visual support for each element to assist the TAs in their understanding, as well as prompt questions and statements in speech bubbles to model each element to the TA and to support them in using the elements of 'Medi8' in practice.
	Observing and practising	The following slides provide a link to a Youtube video of Carol Lidz performing mediation with a hearing impaired pupil who is engaging in a grouping task

Aspect of 'Medi8' (and underpinning theory/research)	Description	
	mediation (Modelling: Black and Wiliam, 1998; Higgins and Gulliford, 2014)	involving colourful bricks. TAs are invited to utilise mediation checklist grids to identify the aspects of 'Medi8' that Lidz carries out, which include the 'Before you start' steps as well as the eight main elements. The slide notes section included some pre-prepared prompt questions to support the TAs in this task (e.g. "Where would you start with this pupil to make sure you were pitching the mediation effectively?"). The final tasks on the PowerPoint invite the TAs to practice mediation with each other using the Complex Figure Drawing (CFD: Feuerstein et al.,1979), with support from myself, and for them to finish the session by considering how mediation may look when working with their target pupil, and by familiarising themselves with the intervention strategies from the CAP that are appropriate for their target pupil.
Hand-out materials	Mediation reflection checklist	TAs were provided with checklists detailing the three 'Before you start' stages and the eight elements of 'Medi8'. These checklists were used to identify the aspects of 'Medi8' utilised during the training video, and TAs were given extra copies of

Aspect of 'Medi8' (and underpinning theory/research)	**Description**	
	(Boud, Keogh and Walker, 1985)	this for them to use to regularly reflect on their mediation sessions with their target pupils, referred to by Boud, Keogh and Walker (1985) as an important facilitator in recapturing and evaluating human experiences.
	Mediation planning sheet (Scaffolding: Radford et al., 2015; Black and Wiliam, 1998)	These hand-outs are structured to help the TAs move through the 'Medi8' process, starting with identifying what the learning task is. The hand-outs include the three 'Before you start' stages with a checklist of cognitive functions for TAs to tick, a box for recording useful mediation strategies, a reminder to do the baseline and the 'level of mediation' scale to help them pitch their mediational approach. The other side of the hand-out presents the eight main elements of 'Medi8' and some prompt questions in large speech bubbles.
'Medi8' pack *(see Figure 3 for an image depicting the elements of this pack)*	'Medi8' laminated prompt cards (Scaffolding: Radford et al., 2015; Black and	TAs were provided with a set of laminated prompt cards for the eight elements of 'Medi8' to more explicitly scaffold their mediational practice. The cards include the visual representation and the prompt questions in speech bubbles from the PowerPoint. Davin, Herazo and Sagre (2017) suggested that to mediate effectively, teachers must "carefully plan their discursive responses to student

Aspect of 'Medi8' (and underpinning theory/research)	Description	
	Wiliam, 1998; Davin, Herazo and Sagre, 2017)	errors" (p.25). They suggested that initial use of scripted mediational prompts would be an appropriate way of facilitating teacher mediation. Although Davin (2013) found that scripted prompts were restrictive and did not always fit with the unfolding discourse in the classroom, Davin, Herazo and Sagre found that teachers were able to deviate from their prompts and be flexible where appropriate.
	'Let's make a plan' laminate (Deutsch and Mohammed, 2010)	A laminated 'Let's make a plan' card was included in the pack to prompt TAs to engage in planning and sequencing with the pupil as an effective mediation strategy. The laminated card can be used to break tasks down into small steps or to draw a mind-map or picture to support memory.
	'Attention' laminate and highlighter (Lidz, 1991; 2002; Haywood & Lidz,	A laminated sheet with prompts to remind the TAs to implement strategies to mediate the pupil's attention was included in the pack (e.g. "Let's cover some of this information to help you pay attention"). A highlighter was also included to prompt TAs to highlight elements of any worksheets provided by teachers that may be overwhelming for the pupils in terms of the quantity of information.

Aspect of 'Medi8' (and underpinning theory/research)	Description	
	2007; Deutsch and Mohammed, 2010)	
	Intervention strategies from the CAP (Deutsch and Mohammed, 2010; Haywood & Lidz, 2007; Lidz, 2002)	A photocopy of the intervention strategies from the CAP was given to each TA to provide them with a bank of possible mediation strategies for use with their target pupil but also with other pupils with different needs who they may work with in the future as a way of building their independence following the completion of the coaching intervention.

4.3.1. Training TAs using 'Medi8'

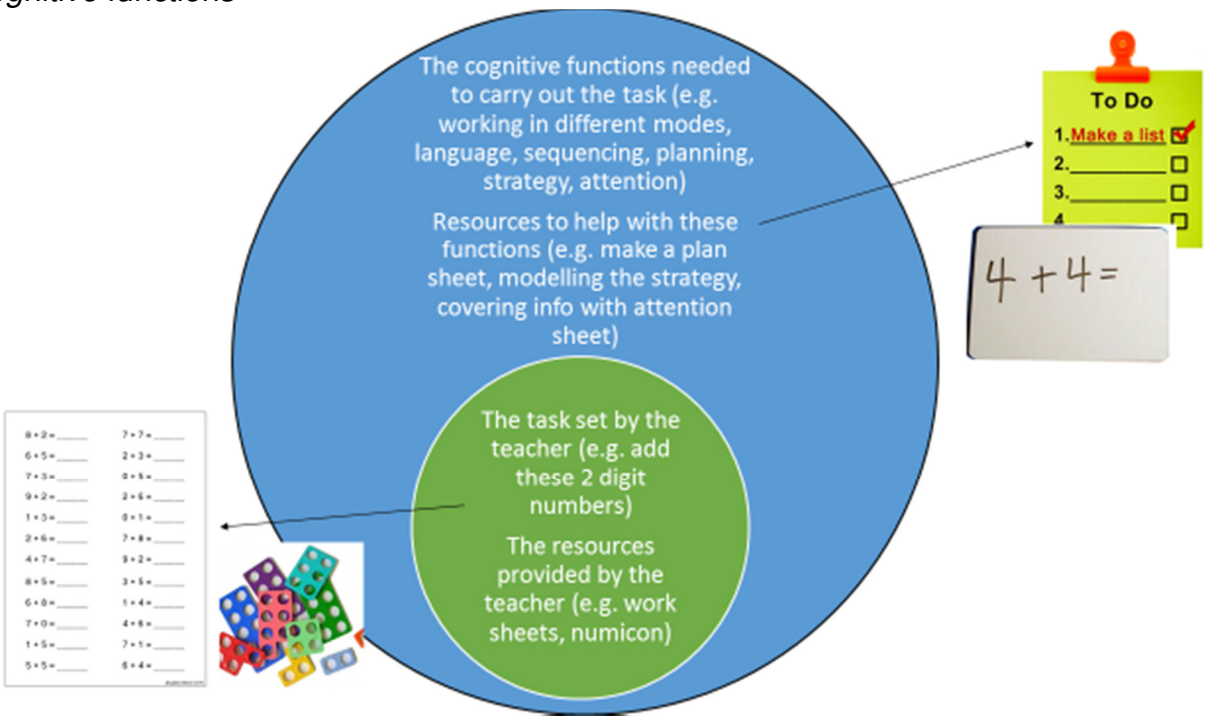
TAs attended an initial one-hour training session, where the first half of the PowerPoint was delivered (covering the 'Before you start' steps and the eight elements of 'Medi8'). A further hour-long training session was then conducted to consolidate their understanding of mediation and to give them the opportunity to observe mediation in the video. I deemed it appropriate following the observation task that the 'Medi8' process and how to utilise the resources be modelled explicitly to TAs, and I demonstrated the stages of the process using the CFD task with one of the TAs, narrating the process being followed at each stage.

4.3.3. Adaptations to the 'Medi8' training package

After the initial training session, the TAs asked some questions about the difference between what they were being asked to do and what they typically do already. I therefore judged it appropriate to offer further explanation of the role of cognitive functions and the difference between the resources provided by the teachers for the task and the resources in the 'Medi8' pack to support cognitive functions. Firstly, an additional task was added to illustrate cognitive functions in action. TAs were asked to consider how they would prepare for Christmas. The responses they gave (e.g. making lists, grouping presents, following recipes) were then mapped against the relevant cognitive functions (e.g. planning, sequencing, grouping). TAs were then asked where else they use those cognitive functions (e.g. planning holidays, managing work load). They were then asked how a five year-old would approach the same task, and it was reiterated that the cognitive functions are something which need to be explicitly taught. In addition, Figure 4 presents the diagram that was added to the PowerPoint as a

means of depicting the difference between supporting task completion and supporting the cognitive functioning of pupils.

Figure 4: Diagram explaining the difference between supporting task completion and cognitive functions



4.4. Solution-focused coaching

Coaching sessions were carried out weekly for a period of six weeks. The sessions lasted twenty minutes and were negotiated with TAs to fit in with their schedules. This was possible due to the flexibility I experienced as a TEP with a reduced caseload. Although Higgins and Gulliford (2014) found that learning from other's experiences (or vicarious learning) was an important contributory factor to TA SE, I judged that due to the diverse profiles of the pupils with regards to cognitive functioning and the different levels of TA understanding regarding mediation, a more personalised approach was necessary.

To structure the SFC sessions, a form was designed to be filled out in collaboration with the TAs (see Appendix 10). The form included SF questions which built on their existing strengths ('Were there any moments where you felt you were using mediation effectively?'), identified desired outcomes ('What would you like to be different next time you use mediation?'), and evaluated success ('How will you know if you're making progress?'), and SF scaling was used to encourage a commitment to making small steps forward ('What would you need to do to get a higher number?'). Finally, TAs were asked how confident they were that they could make these changes before two outcomes were agreed.

However, following the first couple of coaching sessions, I deemed it necessary to make some changes to refocus the TAs on identifying cognitive functions and planning subsequent intervention, as not all of the TAs were engaging in this crucial aspect of mediation. To do this, a starter question was added to the form asking the TAs to specify which aspects of 'Medi8' they had been able to carry out that week by running through the reflection grids, as a means of explicitly highlighting any aspects they had missed and the importance of all the steps in effective mediational practice.

4.5. Data collection

A timeline of the data collection process is included in Appendix 11.

4.5.1. Data collection methods

A mixed methods approach was considered appropriate, where rich, detailed qualitative findings are triangulated with quantitative findings, both of which are mediated by the subjective experiences and interpretations of those involved in the research (Bhaskar, 1975). Rather than diluting the potency of findings from the two distinct positions by the fraternisation of qualitative and quantitative data (Cohen, Manion and Morrison, 2011), such methodological triangulation strengthens the perceived credibility of the findings and avoids simply offering a 'snapshot' of stakeholder perceptions (Denzin, 2006), as well as allowing the research questions to be answered from multiple standpoints (Creswell, 2015). This also fits with my CR positionality, where the diverse perspectives of stakeholders are central to gaining a full understanding of the situation (Robson, 2002). The methods used to answer each research question are presented below:

Table 15: Research questions and related methods

Research questions	**Quantitative methods**	**Qualitative methods**
1. How did the introduction of a coaching intervention for TAs in dynamic assessment-inspired mediation influence TA practice and SE in a primary school?	TA SE scales	Semi-structured interviews with TAs and SENCo Focus groups with target pupils and class teachers

2. How did the introduction of a coaching intervention for TAs in dynamic assessment-inspired mediation influence pupil outcomes in relation to targeted cognitive functions?	Assessment of target pupils using the CAP	Semi-structured interviews with TAs and SENCo Focus groups with target pupils and class teachers

Semi-structured interviews with stakeholders were combined with data from SE questionnaires and SF scaling with the TAs to develop a rich and detailed picture of how the TAs have experienced the coaching intervention and how they and other staff consider it to have influenced TA practice and SE. Furthermore, results of the CAPs regarding pupil cognitive functioning were triangulated with qualitative responses in the semi-structured interviews to present a more holistic view of how pupil outcomes were influenced by the mediation intervention.

4.5.2. Quantitative methods

4.5.2.1. Assessment of target pupils using the CAP

The CAP (Deutsch and Mohammed, 2010) was used as a quantitative measure of the cognitive functioning of target pupils both pre- and post-intervention to look for any improvements as a result of the ongoing mediation from the TAs (research question 2). As described in the introduction, the CAP was designed to assess pupils' cognitive functioning and affective factors through a questionnaire which is administered to staff who work with the pupil. The CAP involves questions on different areas of pupils'

cognitive functioning: attention, perception, memory, language and communication, reasoning/logic, strategic thinking/metacognition and behaviours affecting learning. For example, staff are asked questions such as, “How well can the learner regulate their attention?”, “Does the learner plan the steps in the stages of problem-solving and show a systematic approach in the organisation of their work?”, “Does the learner have the necessary language (verbal, sign or symbols) to give their answer?” and “Does the learner show persistence and a need for task completion?”. The questionnaire also indicates whether the cognitive functioning and behaviours affecting learning are instrumental at the input, elaboration or output stage of the learning task. Scores are then awarded for each aspect of the pupil’s cognitive functioning to indicate their independence in performing the related skills. The rating scale is as follows: 1: Not able even with support; 2: Able only with support; 3: Sometimes able/inconsistent; 4: Independently able.

Despite the quantitative nature of the outcomes of the CAP (numbers representing areas of strength and deficit in cognitive functioning), and the associated criticisms that can be made of the attempt to quantify something as complex as cognitive functioning, as well as the subjectivity of using measures reported by TAs and teachers, the assessment fits with the CR position of CAR due to the fact that it gives precedence to the perspectives of the individuals working with the pupil and allows for triangulation of these perspectives to reach a greater understanding of the needs of that pupil. Furthermore, the additional triangulation of these findings with the findings of the semi-structured interviews and focus groups renders the limitations of the CAP less significant.

CAPs were administered in consultation with TAs and teachers. This was important as I was able to offer examples of the different cognitive functions and affective factors to facilitate their understanding of the different aspects of the assessment. The results of the TA and teacher CAPs for each pupil were then averaged, and the lowest areas of functioning were highlighted, from which three target cognitive functions were selected and became the focus of the coaching sessions and TA mediation. Pupil progress with these cognitive functions was monitored through repeating the CAP questions for the targeted cognitive functions only with TAs every other coaching session, and through completing a final post-intervention CAP with TAs and teachers during the interviews and focus groups. This resulted in four CAP ratings overall for each cognitive function provided by TAs (TA2 provided only three of the four CAP ratings due to absence), and two ratings (pre- and post-intervention) provided by teachers (the pre- and post-intervention ratings were an average of the TAs' and teachers' responses).

4.5.2.2. TA SE scales

In order to explore the influence of the coaching intervention on TA SE, or their confidence and perceived capability to support pupils' cognitive functioning through mediation, I created an SE scale. According to Bandura (2006), no all-purpose measure exists, meaning scales must be "tailored to the particular domain of functioning that is the object of interest" (p.308). Bandura also stipulated that the items on the scale should be framed as 'I can do' as opposed to 'I will do', which suggests intention instead of capability. When designing the SE scale, it was therefore necessary to perform an analysis of the key areas of the function domain (supporting

pupils' cognitive functioning), and as a result, eight items were created spanning the mediation process, from task analysis to the bridging of targeted cognitive functions to other contexts.

When designing the rating scale, I decided that a scale of 0 to 100 with increments of 10 would be utilised, as this type of scale has been found to be a stronger predictor of performance than 5-point scales (Pajares, Hartley, & Valiante, 2001). Furthermore, Bandura (2006) suggests a practice item to familiarise participants with the rating scale, and consequently a practice rating of how able TAs felt to lift objects of increasing weights was included before the main scale. The practice rating and the rating for capability to support learning are presented in Appendix 12.

A further SE scale was used as part of the SF coaching sessions. TAs were asked 'On a scale of 1-10, where are you now with your mediation skills?' They were then asked 'Why didn't you give yourself a (lower number)?' as a means of emphasising strengths and progress, and 'What would you need to get a (higher number)?' to help build commitment towards small steps of progress in the future. Although the scale was included as an SF tool, it was possible to gain an overview of changes to TAs' reported SE levels on a week-by-week basis.

Again, the subjectivity of the self-reported SE is a significant limitation of such tools, a concern which is magnified as a result of the fact that I was acting as both researcher and interviewer, creating a likelihood that TAs would be influenced by social desirability when responding to my questioning. To diminish this effect, the teachers and SENCo

were questioned regarding any changes to TA SE as a means of triangulating the results of the SE questionnaire. Furthermore, the fact that these scales were completed by TAs outside of the coaching sessions and anonymity was assured reduced the potential bias introduced by social desirability when asking TAs about their SE.

4.5.3. Qualitative methods:

4.5.3.1. Semi-structured interviews with TAs and the SENCo

Staff views were gathered using semi-structured interviews to allow for flexibility in the approach to engaging in discourse around the project. The questions were based on topic areas related to the project (the CAR process, the 'Medi8' intervention training and coaching sessions, the influence on TA practice and SE and the influence on the target pupils), and were tailored depending on the staff member being interviewed (see Appendix 13 & Appendix 14 for TA and SENCo interview schedules).

A semi-structured interview schedule allows the preparation of questions to elicit the relevant information (in this case the experiences of different aspects of the project) whilst allowing the line of inquiry to be adapted in the moment to follow-up on interesting points made by interviewees (Cohen, Manion and Morrison, 2011). Additionally, the ability to interpret the non-verbal cues of the interviewees facilitates understanding of their responses, strengthening the efficacy of communication between interviewer and interviewee (Cohen, Manion and Morrison, 2011). Furthermore, the interviewer is able to utilise non-verbal cues and employ active listening skills (Geldard and Geldard, 1998) such as summarising, reflecting back and

allowing space for emotional expression to communicate their understanding of the situation to the interviewee, which may help foster a positive rapport and facilitate open and honest communication. Although there are clear limitations of this approach to data collection, namely the time-consuming nature of conducting interviews (for both interviewer and interviewee), the time required to transcribe and analyse the interview script, the dependency on the skill of the interviewer and the susceptibility to interviewer bias through the use of leading questions (Cohen, Manion and Morrison, 2011), as well as the possibility of social desirability effects due to my dual role as researcher-interviewer, the triangulation of interview data with quantitative methods which were completed anonymously outside of the coaching sessions attempted to diminish these limitations.

4.5.3.2. Focus group with teachers and target pupils

Two focus groups were used to gather the views of the teachers and the target pupils as it was agreed with staff that this would promote and develop the discourse around the project amongst participants who were involved to a lesser extent and amongst pupils who may otherwise find it challenging to respond to questioning. I also judged that a focus group would be a more enjoyable experience for the pupils as it fosters a more informal atmosphere and reduces the pressure to provide responses. A semi-structured approach was also used for preparing questions to ask in the focus groups to allow for flexibility and adaptability depending on responses (see

Appendix 15 &

Appendix 16). The focus groups were also considered a useful approach due to their efficiency in terms of time, as it allowed for simultaneous collection of data from all three teachers and all three pupils (Cohen, Manion and Morrison, 2011). Limitations of the focus group include the lack of confidentiality for participants when offering responses, which may have an influence on their willingness to give open and honest responses, and the fact that some individuals may dominate the group discussion (Cohen, Manion and Morrison, 2011).

Furthermore, as with the TAs, my dual role as researcher-interviewer may have had an influence on teacher and pupil responses due to social desirability effects. Again, the use of triangulation of methods in the current study goes some way to reducing these limitations.

4.5.4. Reflective journal

Keeping contemporaneous notes is widely recommended in qualitative research in order to record important rich, contextual information (Phillippi and Lauderdale, 2018), and to strengthen the trustworthiness, credibility and auditability of qualitative research by allowing for the influence of any contextual factors to be explored at the time of analysis (El Hussain, Jakubec and Osuji, 2015). I kept a reflective journal throughout the course of the intervention consisting of notes regarding the TA's anecdotal experiences of delivering the mediation in lessons and any contextual factors that were highlighted as having an impact on the progress of the intervention (e.g. time pressures).

4.5.5. Feedback meeting and action-planning

A feedback meeting was arranged with the staff involved in the project following the data analysis and RE. The purpose of the meeting was to process the findings of the RE with stakeholders and to agree on an action-plan for Phase 2 of the CAR project. Furthermore, such a meeting allowed enhancement of the trustworthiness and credibility of the RE (El Hussain, Jakubec and Osuji, 2015), as I acknowledged that the process of creating a programme specification from the data was idiosyncratic and therefore open to researcher bias and interpretation. It was felt that the feedback meeting was a preferable method of promoting the trustworthiness and credibility of the findings to asking participants to check the transcripts themselves, as it was considered important to reduce the bureaucratic burden on participants following the level of additional work that they engaged in during the course of intervention (British Educational Research Association, 2014). A feedback meeting was also conducted with the pupils to communicate the relevant, child-friendly outcomes of the RE.

The staff feedback meeting comprised a presentation of the CMOC that had been derived from the data (using the flow diagrams included in Figure 8, Figure 9 & Figure 10). A discussion was then encouraged with regards to whether there was anything that participants felt was important that had not been included in the CMOC. Each theme was introduced and explained, and then participants were invited to comment on the inclusion of the theme. This process allowed for the assumption of data saturation (El Hussain, Jakubec and Osuji, 2015), as participants reached a point where they had no new information to add and felt that everything relevant had been

covered. During the meeting, participants were in agreement with all of the themes that had been included in the CMOC, including those that had only been mentioned by two participants in the interviews. Participants did not tend to elaborate on their agreement and little discussion took place during this part of the meeting. This may suggest that there was nothing controversial within the CMOC that prompted discussion or debate, but it may also indicate that participants could have been reluctant to offer views in the context of a meeting involving other staff members who may be implicated negatively. However, discussion and debate was more prominent during the second part of the meeting, where the action plan for Phase 2 was agreed, particularly regarding the need for further weekly coaching for the TAs as opposed to termly drop-in sessions. The TAs were forthcoming in offering disagreement with the SENCo and teachers regarding this point, suggesting that they felt able to express their disagreement in the context of the meeting.

The action plan was created collaboratively during the feedback meeting. A list of next steps was compiled with the principle aim of further embedding mediation into TA practice and the wider school community. I was able to begin the list before the meeting as several of the staff members had identified ideas for next steps during the interview process. Ideas were discussed and amended, and further ideas were added during the meeting. The final action plan is included in Chapter 5 (Section 5.4).

4.6. Data analysis procedure: Realistic Evaluation

The initial stage of data analysis was dedicated to the quantitative measures used in the current study. The outcomes of the CAPs were recorded periodically throughout

the intervention, and were plotted onto graph as a visual representative of pupil progress to share with TAs and teachers as the project progressed. Following the interviews, where the final CAP score was determined by TAs and teachers, the graphs were finalised to demonstrate pupil progress on target cognitive functions across the whole intervention. The pre- and post-intervention TA SE scales were then compared and the changes were noted descriptively. Due to the small sample size (N = 10) and the CR philosophical position of the research (where any emerging truths are mediated by personal perspectives and interpretations), depth and interpretivism and not statistical generalisability were the aims of the data analysis (Thomas, 2009). Consequently, the quantitative data were presented using descriptive statistics only (the number of 'steps' made on the CAP for each pupil in terms of independence in the target cognitive functions and the difference in scale points between the pre and post-intervention TA SE scores). These findings were then considered in light of the interview data when determining the Cs, Ms and Os.

4.6.1. Programme specification

The CMOC was configured through scrutiny of the interview and focus group transcripts for interesting features which were then coded as either a C, M or O. In this respect, the data analysis was inductive in that the over-arching categories were pre-determined by the realistic programme theory (Pawson and Tilley, 1997). During the first read-through of the transcripts, all interesting and relevant features with regards to the intervention were highlighted and descriptively coded in the transcripts (see Appendix 17 for examples of the coding process). As some questions were deliberately

tailored to elicit answers in response to the research questions, it was possible to identify and code features of the transcript that related directly to the research questions regarding TA practice and self-efficacy and pupil outcomes. However, as the research questions also involved asking *how* aspects of the intervention influenced these outcomes, and as I was aiming to further develop and refine the programme theory with regards to this type of intervention, it was necessary to keep my "eyes open for other possibilities" during the coding process (Pawson & Tilley, 1997, p.87). As a result, some features of the transcript were coded despite not being directly related to TA practice/self-efficacy or target pupil outcomes (e.g. influence on the wider school community).

Following the initial coding process, I utilised a constant comparative method (Thomas, 2009), where I scrutinised the entire data set repeatedly, comparing each code with others that had emerged in other transcripts. By moving back and forward through the data set, comparing new information with previous codes and reframing or altering codes accordingly, I was able to engage in a "recursive" process to produce refined themes in relation to the influence of the intervention (Braun and Clarke, 2006, p.16). These refined themes were recorded next to the original codes on the transcripts in capital letters (see Appendix 17). This refinement included consideration of the key findings reflected in the quantitative data (SE scales and the CAP data – see Figure 6 & Figure 7).

To strengthen the credibility of the findings, themes were included based on their prevalence in the data set, and those mentioned by only one participant were not

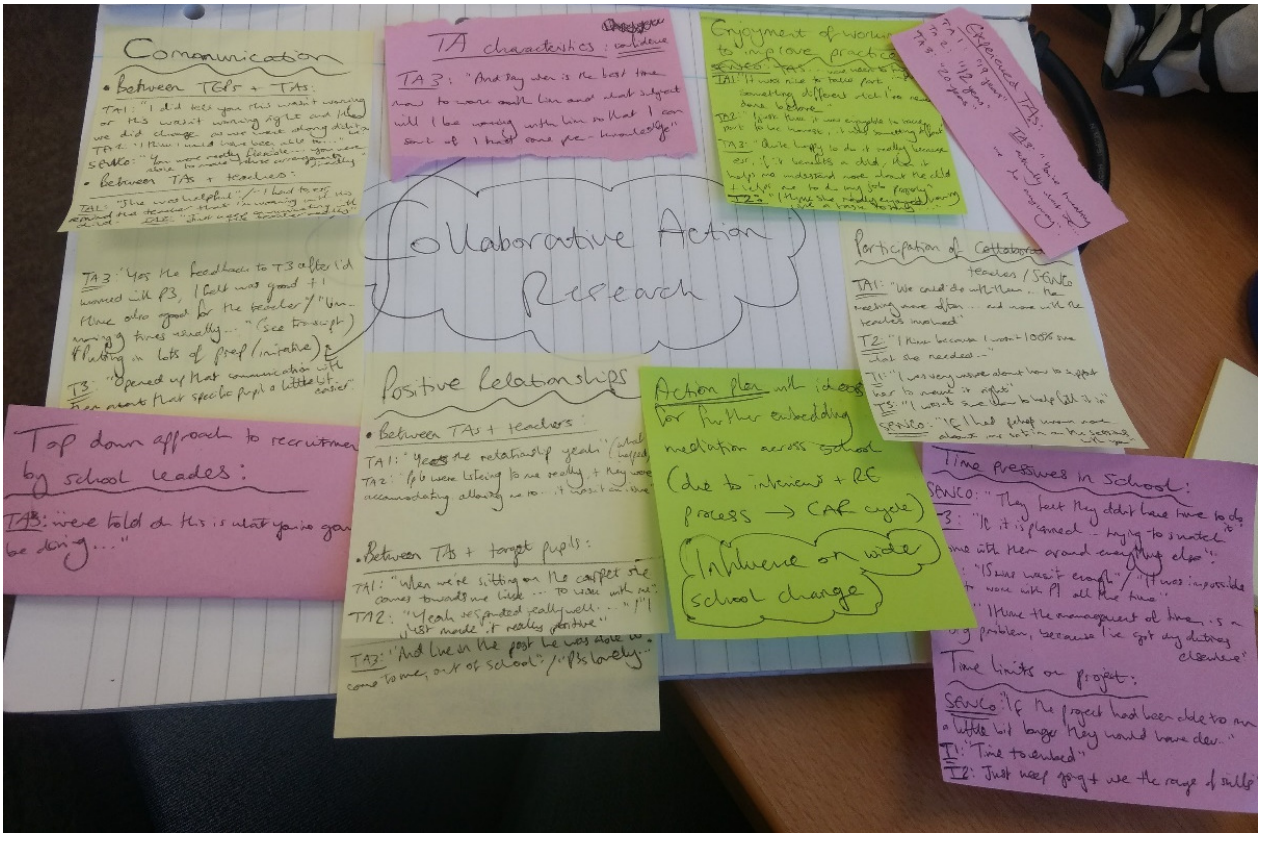
included. This approach ensures that the most significant factors are being drawn upon to shape practice and policy within the school. Themes which had only been mentioned by two participants were deliberated during the feedback meeting and included in the final CMOC depending on whether the other participants felt they were important, although it is acknowledged that they were likely not the most significant factors influencing the success of the intervention (the number of participants mentioning each theme is recorded in Figure 8, Figure 9 & Figure 10).

Finally, the themes were ascribed to the category of C, M or O. This was performed using guidance from Porter (2015), where contexts are pre-existing or established mechanisms within the social system, and mechanisms are those related to the novel programme being implemented in the context (e.g. the intervention). Each theme was colour-coded on the transcript depending on the category it was assigned to (purple = context, yellow = mechanism, green = outcome). The themes under each category were then included in a table, where participant codes were used to identify the source of the utterances contributing to each theme and the number of participants mentioning each theme was recorded (see Appendix 18).

The CMOC is presented in three flow-charts (Figure 8, Figure 9 & Figure 10). I determined that it was not feasible to write individual 'context + mechanism = outcome' equations as it is likely that the majority of contextual features and mechanisms contributed in some way to the outcomes. Therefore, the findings of the current research are presented as one collective CMOC which represents the interplay of this particular set of contexts and mechanisms to trigger outcomes. The specific

interactions between the Cs, Ms and Os were then explored in greater detail under the categories of the CAR process, the ‘Medi8’ training and the coaching sessions. This was conducted by hand to allow my full immersion in the data, using colour-coded post-it notes (pink = contexts, yellow = mechanisms, green = outcomes), and an example is provided in Figure 5. This process informed the basis of the discussion (Chapter 6).

Figure 5: Example analysis of the interplay between Cs, Ms and Os in relation the CAR process, ‘Medi8’ training and coaching sessions



CHAPTER 5: FINDINGS

The following chapter will present the findings in relation to the two research questions. The chapter is divided into quantitative and qualitative findings, and the quantitative data has been presented in tables and charts to improve accessibility. For the qualitative data, the same coding system has been used as for the interviews, with TA1/2/3 representing the TAs, T1/2/3 representing the teachers and P1/2/3 representing the pupils. In this respect, the participants can be viewed as being linked together in triads, with TA1, T1 and P1 being from the same class.

5.1. Findings in relation to research question 1: How did the introduction of a coaching intervention for TAs in dynamic assessment-inspired mediation influence TA practice and SE in a primary school?

5.1.1. Quantitative data: SE scales

The ratings awarded by TAs for the different aspects of their SE both pre- and post-intervention are presented in Table 16. The data suggest that all three of the TAs experienced an increase in their SE regarding each of the features of mediation addressed in the 'Medi8' intervention, with progressions ranging from 25-50 scale points (on a scale of 0-100).

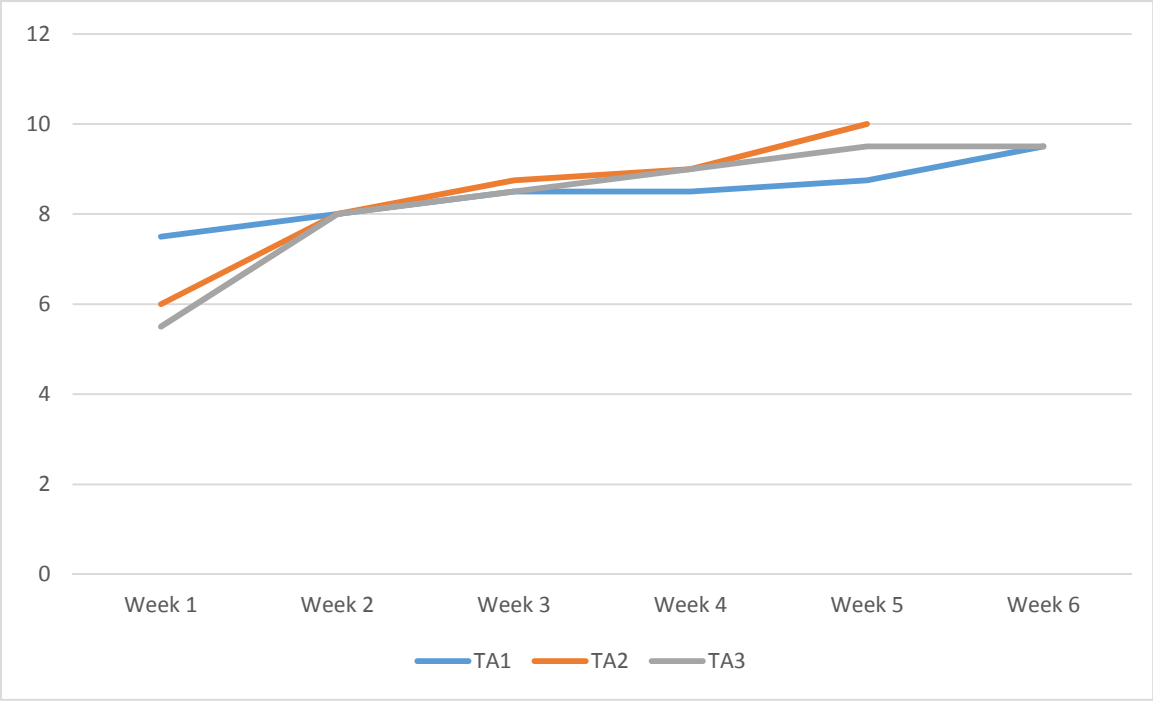
Table 16: TA pre- and post-intervention ratings for SE in supporting pupil cognitive functions

Self-efficacy item	**TA code**	**Pre-Medi8 rating**	**Post-Medi8 rating**
I can identify the cognitive (thinking) skills necessary for effective learning.	TA1	50	100
	TA2	40	100
	TA3	60	90
I can identify the cognitive skills with which a pupil is having difficulties.	TA1	50	95
	TA2	50	100
	TA3	70	100
I can identify the cognitive skills required for a pupil to complete a task.	TA1	60	95
	TA2	60	100
	TA3	70	100
I can use strategies to support the thinking skills of pupils with whom I work.	TA1	40	100
	TA2	65	100
	TA3	60	100

Self-efficacy item	TA code	Pre-Medi8 rating	Post-Medi8 rating
I can make sure the help I offer pupils is appropriate for their skill level (so I am not helping too much or too little).	TA1	70	95
	TA2	50	100
	TA3	70	100
I can encourage pupils to reflect on how they approached a task.	TA1	70	98
	TA2	60	100
	TA3	70	100
I can help students identify the strategies required to succeed in tasks.	TA1	50	100
	TA2	50	100
	TA3	70	100
I can help students make connections between their learning and other contexts.	TA1	50	95
	TA2	40	100
	TA3	70	95

The graph in Figure 6 presents the weekly ratings (out of ten) selected by the TAs with regards to their perceived competence in performing mediation with their target pupil (TA2 only underwent five of the six coaching sessions due to absence). Again, the data suggest that the TAs all experienced a steady increase in their perceived competence in delivering mediation throughout the six-week intervention.

Figure 6: TA weekly ratings out of 10 for competence with mediation



5.1.2. Qualitative data: outcomes emerging from interviews in relation to TA practice and SE

5.1.2.1. TA SE

The RE revealed that 5 participants (TAs and teachers) had reported an increase in TA SE in supporting pupil cognitive functions as a result of the 'Medi8' intervention:

Table 17: Quotations in support of the outcome 'TA SE'

TA2	*I just feel more able to support children, you know in the areas that I've been sort of working on*
T2	*I think often because we are telling them what to do and when they just are going through that, like, procedure, whereas actually that did give them more time to reflect on what impact they were having which was quite nice, we had like, I remember having one conversation with my TA, she was like ooh this bit really worked I was like that's nice let's try that again in a different lesson*

These comments were further supported through the questionnaire data, which suggested that all the TAs increased in their reported SE on all measures on the questionnaire.

5.1.2.2. TAs' enjoyment of working to improve practice

One outcome that emerged through the RE that was not explicitly predicted in the programme theory but which relates to TA SE was the TAs' enjoyment of working to develop their practice in this manner (4/10 participants):

Table 18: Quotations in support of the outcome 'TA's enjoyment of working to improve practice'

TA1	*It was nice to take part, something different which I've never done before*
T2	*Um, I think she really enjoyed having like, a task to try and develop her skills I think she really did appreciate that time to be able to try something out and work on that*

SENCo	*Um the TAs when I spoke to them were keen to try and implement what you had taught them*

TAs and teaching staff reported the positive attitude that TAs expressed pertaining to their professional development and opportunities to develop their skills and participate in the research process.

5.1.2.3. TA practice:

A further outcome emerging from the RE was characterised as 'Changes to the TA role', and was subcategorised into their use of mediational strategies to support cognitive functions (mentioned by 9/10 participants) and a change in their role to a facilitator of learning (mentioned by 2/10 participants).

5.1.2.3.1. Use of mediational strategies to support cognitive functions

All of the TAs, teachers and pupils reported that TA practice had adapted during the course of the intervention to incorporate the mediational strategies introduced to them through 'Medi8':

Table 19: Quotations in support of the outcome 'Use of mediational strategies to support cognitive functions'

TA3	*Obviously using the cards with P3… and I've been able to, um, prompt myself to use different strategies, with the help of Medi8, to think right we can try, and through talking to you, right we'll try this this time, we'll try, different things*

T2	*Towards the end I saw my TA using the make a plan sheet, and I've seen the praise cards*
P2	***P2:*** *She writed the plan but, she writed the plan and, and I copied it, I copied it in Maths* ***R:*** *Oh brilliant and did you find that helped you to remember how to divide?* ***P2:*** *Yes*

Although TAs were focusing on different mediational strategies depending on the cognitive functions that were being targeted for the pupils (e.g. systematic planning, applying rules, sharing thoughts: see Figure 7), the RE highlighted that each of the TAs were using new approaches related to the steps of 'Medi8' in their classroom practice, and that these new approaches had been noted by the teachers and target pupils.

5.1.2.3.2. Difficulties in applying mediational techniques

It is important to note that it took two of the TAs more time to begin to embed the approaches in their practice (as noted by T2 above), and another outcome that emerged from the RE was the difficulties that TAs experienced in applying mediational practices, particularly in the initial stages (mentioned by 6/10 participants). Difficulties were largely related to a lack of understanding of how mediation can be applied ad hoc in all learning tasks set by the teacher during one-to-one work with pupils by following the 'Medi8' process:

Table 20: Quotations in support of the outcome 'Difficulties in applying mediational techniques'

TA1	*Sometimes you couldn't do it in like every lesson… It all depends on what you're doing what lesson, what they're learning about*
T2	*Um, my TA found it quite tricky to um do the plan within a lesson situation and I think she probably finds it too busy and she preferred to take the child out and then do her intervention that way*
SENCo	*Um the TAs when I spoke to them were keen to try and implement what you had taught them, I think they were confused initially about how they were to do that, felt it was like just had to do kind of a one-to-one withdrawal kind of session, and they felt that they didn't have time to do it and, as the project evolved, they began to get the idea that this is something you could use within the classroom and within whatever lesson that you're doing*

These difficulties were also noted during coaching sessions and became the focus of the support that I was offering. This resulted in further scaffolding of how to implement the strategies we had agreed through modelling and the creation of bespoke resources for the TAs to use (e.g. modelling a plan for the division process). The TAs' initial reluctance to be observed persisted throughout the intervention, and this was acknowledged and respected in order to maintain the positive relationships that had been built. However, despite the difficulties noted above, all TAs were able to demonstrate an ability to utilise mediation strategies in the classroom by the end of the intervention, a success which is likely attributable to the coaching sessions.

5.1.2.3.3. Facilitating learning

Another way in which the RE indicated that TA practice had changed as a result of the intervention was with regards to their role as a facilitator of learning. Although only two participants mentioned this change, it was agreed during the feedback meeting that it was a relevant outcome of the intervention and it is therefore included in the CMOC:

Table 21: Quotations in support of the outcome 'Facilitating learning'

T3	*So it was more about like what are the learning strategies then for that child rather than potentially like giving answers, more like how are we going to get to the point of getting that answer, for yourself*
SENCo	*I think definitely two of the TAs felt like they were more a facilitator of learning rather than someone there just to kind of prompt them with the right answer, so I think their style of support, has changed*

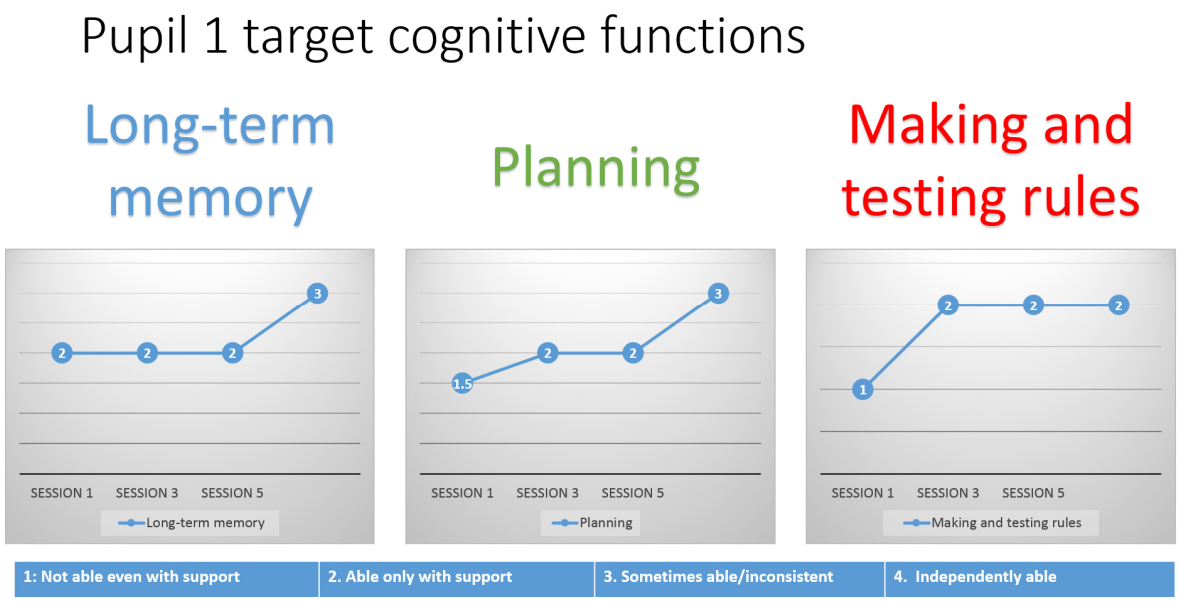
5.2. Findings in relation to research question 2: How did the introduction of a coaching intervention for TAs in dynamic assessment-inspired mediation influence pupil outcomes in relation to targeted cognitive functions?

5.2.1. Quantitative data: Cognitive Abilities Profiles

From the initial CAPs that were carried out with the TAs and teachers, three target cognitive functions were selected and became the focus of the coaching sessions and TA mediation. Pupil progress with these cognitive functions was monitored through repeating the CAP questions for the targeted cognitive functions with TAs every other

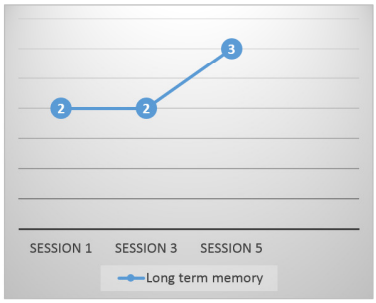
coaching session, and through completing a final post-intervention CAP with TAs and teachers (TA2 provided only three of the four CAP ratings due to absence). The results were represented visually using graphs on a PowerPoint slide to make the findings accessible to participants (see Figure 7). The CAP results are displayed on the vertical axes of the graphs below, with the descriptions of each score from 1 to 4 presented below the graph (1: Not able even with support; 2: Able only with support; 3: Sometimes able/inconsistent; 4: Independently able). The graphs indicate that steps of progress towards independence in the target cognitive functions were observed across all three targets for all three pupils, with the most significant progress being two steps (from 2 – 'Only able with support' to 4 – 'Independently able') in P2's persistence and P3's expressive language.

Figure 7: Step-changes made in pupils' independence in targeted cognitive functions over the 'Medi8' intervention

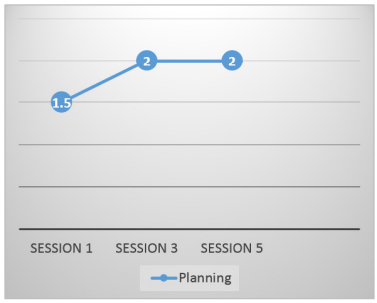


Pupil 2 target cognitive functions

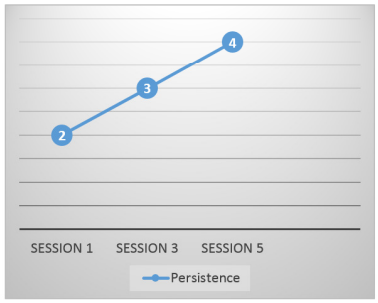
Long-term memory



Planning



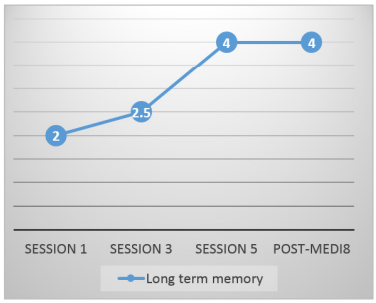
Persistence



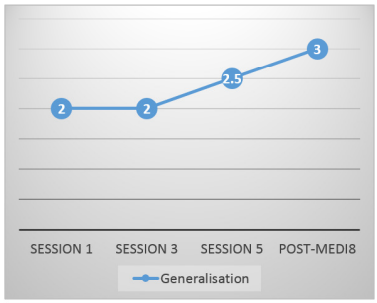
1: Not able even with support	2. Able only with support	3. Sometimes able/inconsistent	4. Independently able

Pupil 3 target cognitive functions

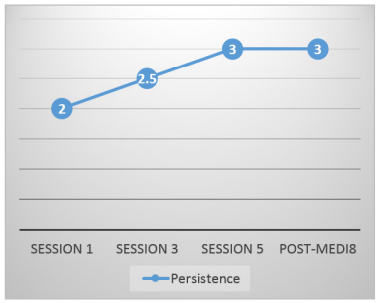
Expressive language



Generalisation of skills



Persistence



1: Not able even with support	2. Able only with support	3. Sometimes able/inconsistent	4. Independently able

5.2.2. Qualitative data: Outcomes emerging from interviews in relation to pupil outcomes

5.2.2.1. Improvements in cognitive functions

One of the most significant pupil outcomes of the RE was in relation to the progress made by the target pupils with regards to their cognitive functions. Improvements were demonstrated through the CAP graphs that were used to monitor the pupils' progress over the course of the intervention (see Figure 7). The graphs demonstrate that small steps of progress towards independence were made by all pupils in relation to all targeted cognitive functions. This also emerged as a strong theme in the interviews and was mentioned by 6/10 participants, providing triangulation for the self-reported improvements made by TAs and teachers through the CAP:

Table 22: Quotations in support of the outcome 'Improvements in cognitive functions':

P3	*I think it helps me by putting my hand up because, sometimes, when I was little I used to be shy*
TA2	*And um, and also in her learning, you know, itself really, because obviously that's helped her to, the plan itself has helped her to remember you know the steps of her division for a starter, and we also applied it to everyday life*
TA3	*I love sitting back and watching him put his hands up because if I'm in the class not working with him specifically maybe working in a different group and he puts his hands up he always looks over and smiles as if look at me I'm doing this without you saying or anyone saying. He does it no problem at all, without any prompting, automatically puts his hand up… That's*

	through the roof yep, and he's quite proud of himself to doing this cos he actually tells me I put my hand up

Despite this positive picture regarding pupil outcomes, a discrepancy arose in the data, with T1 stating the following:

"Um the, the child is, she's not as confident in the class situation but I think she did open up with the TA, I haven't seen as much impact just yet, so I think that might be yet to come"

This raises the issue of pupils generalising skills developed when working with the TA to lessons where the TA is not present. The quantitative data displayed in the graphs highlights that although small steps of progress towards independence were made, full independence was not achieved in the majority of cases, and further rehearsal of strategies to support cognitive functions, followed by a strong focus on bridging these skills to other contexts (the final step of 'Medi8') would help to further support pupil independence. There is also a possibility that TA1 had overemphasised the progress made by P1 as a result of social desirability effects due my dual role as coach-interviewer. It is also important to consider that despite the exemplars provided as part of the CAP process to assist participant understanding of what independence may look like with regards to the different cognitive functions (Deutsch and Mohammed, 2010), subjectivity inevitably exists in the perception of constructs such as independence, which may have had an influence on the quantitative scores awarded for the CAP. However, despite this discrepancy, the teachers and TAs agreed on the final CAP scores for each pupil (as displayed in the graphs in Figure 7), suggesting that the

intervention had enacted a positive influence and helped the pupils make small steps of progress towards independence.

5.2.2.2. Increased pupil SE in learning

Another positive outcome that emerged for target pupils from the RE was their improved learning SE, and this was mentioned by 6/10 participants, including all three pupils, one TA and two teachers:

Table 23: Quotations in support of the outcome 'Increased pupil SE in learning'

P2	*I think I got better at, at dividing by 4*
P1	*I always remember to underline*
T1	*It did help that child in the lesson, develop confidence and the child was able to progress further in that lesson because she had the support of the teaching assistant*

All three pupils expressed that they felt they had improved in aspects of their learning and in using strategies to support their cognitive functions. Two of the teachers also indicated that they had seen improvements in the confidence of the target pupils with regards to their learning.

5.2.2.3. Enjoyment of learning with targeted support from TA

Another positive outcome for pupils was their enjoyment of learning with targeted support from TAs (mentioned by 7/10 participants):

Table 24: Quotations in support of the outcome 'Enjoyment of learning with targeted support from TA'

P2	*I think they're very helpful*
TA2	*Yeah responded really well, she enjoyed working with me, and um, obviously getting a certificate at the end of it as well*
TA3	*And that every time we turned the card we'd smile, cos I'd say you've only got four fingers on that card (laughs), cos he only drew four fingers, so and so it's a sort of joke but he remembers you know and I think that's it it's just, I made it fun*
T3	*Yeah (laughs) it makes her feel, you know like, ooh I'm getting all this learning hands this extra time just for me, she really enjoys it and when she does come back into the classroom it's like I've had my little fix (all laugh), I'm gonna come back in now and I'm gonna join in a bit more and she just like, she just tries to join in more, and like obviously I target her quite a lot anyway, um, but yeah you can just tell when she does come back in she has a bit of a buzz (all laugh)*

5.3. Outcomes for wider school and community

Although not explicitly included as a research question or in the initial programme theory, the goal of CAR is to initiate positive change within the organisation, and the RE revealed that the participants felt the 'Medi8' intervention had begun to have an influence on the wider school context in several ways.

5.3.1. Greater understanding of pupil needs

The CAR process and mediation training had enabled staff to gain a greater understanding of pupil needs (mentioned by 3/10 participants):

Table 25: Quotations in support of the outcome 'Greater understanding of pupil needs'

TA3	*Um, yeah I think the sessions every week actually feeding back to you, because you've, when I explained something to you and you've been able to break it down and say oh this is why he has done this and this is why he's done that, it's, it's gave me a bit of understanding of how, his coping mechanisms and stuff like that*
T1	*I think with the little child that I'm thinking about she is, she tries hard and actually in the lesson, she could do the work that she needs to do, but the difficulty for her is that distance from learning, …so whether these plans that are already made are then brought to her at that point when she is learning about something away from that point of being taught it… maybe the planning could help her away from the point of the lesson*
T3	*Um I think that um having the teaching assistant work with a specific pupil, that made the, sort of opened up that communication with them about that specific pupil a little bit easier and discussing the specifics of what the needs of that child were*

The above comments suggest that the intervention not only helped TAs develop mediational practices to support students, but the process of completing the CAP questionnaires and then monitoring cognitive functions regularly enabled the TAs and

the teachers to gain a more detailed perspective of the needs of individual pupils. This experience is likely to facilitate their formulation regarding the needs of other pupils they work with in terms of their cognitive functioning.

5.3.2. Influence on pupils beyond the target pupils

The RE suggests that there was some influence of the intervention on other pupils beyond the target pupils (mentioned by 2/10 participants):

Table 26: Quotations in support of the outcome 'Influence on pupils beyond the target pupils'

TA2	*Mm, yeah, when I've worked with some other children I've been… you know sort of, thinking about how they can develop their memory and things like that cos obviously that's one of the areas that we were trying to work on with P2, and… um, yeah I've encouraged, really I've encouraged making a plan with other children in other areas of learning as well*
TA3	*A lot of children at that age don't want to make a mistake and be seen to make the mistake, they think it's I'm not even gonna apply I'm not gonna put my hand up because I don't wanna be seen as silly and making mistakes, so a lot of the children his age hold back, from simple answering questions and it's getting that through to them, we all make mistakes, and to correct your mistake that's how we do it, we all don't get everything right, so I'll have a better understanding working with the other children and we do have lots of other children in the past*

These comments suggest that even at this early stage of learning to use mediation, TAs were beginning to understand how the approaches they were using could be applied to other pupils with similar needs, indicating that they had gained a greater understanding of the unique contribution of mediating cognitive functions beyond the one-to-one intervention.

5.3.3. Generation of ideas for further embedding mediation across the school

Another significant outcome regarding the wider school community was the generation of ideas for further embedding mediation across the school (mentioned by 5/10 participants). These ideas were used as the basis of the action plan for Phase 2 of the CAR. Some of these ideas were regarding using mediation with groups of pupils as opposed to individuals in the future:

Table 27: Quotations in support of the outcome 'Generation of ideas for further embedding mediation across the school': using mediation with groups of pupils

TA2	*I haven't really (used mediation with other pupils) no because it's been a bit more sort of indirect, working with them, cos they've not been a target pupil, you know, but I could in the future*
TA3	*I think it would work lovely in a group because I think they would bounce off each other… And it's to do with the self-esteem and the confidence that they give each other, would give each other, rather than just a one-to-one with me*
SENCo	*But when they haven't got to use it with just that one child… They can use it with any group that they're working with*

The staff also mentioned several ways of disseminating the practice of mediation beyond the target TAs:

Table 28: Quotations in support of the outcome 'Generation of ideas for further embedding mediation across the school': involving other TAs in the school

SENCo	*A staff meeting might be, would've been a nice idea, like to perhaps just go over like, mainly most people would be unaware that this project was happening… You know we've been doing this er TAs, and like use them as your experts, these are the resources this is what you know the support that they've been offering to children and how it could be rolled out through the school*
T3	*If we know those strategies we can maybe say well in this lesson today that's what's going to work for that child use that cos we have a bank of all our teaching and learning strategies it's then having that bank of support strategies that will match with what we've planned*
TA3	*Um but for new, as I said for new TAs, um I think it would probably it would be an excellent idea… The new younger TAs coming out with degrees I'll say, that's maybe never worked with children and stuff, that, it's a good stepping stone for them… I think Medi8's a good stepping stone, cos it's somewhere for them to start*

In addition, in my reflective journal it was noted that one TA had suggested having the flashcards with the steps of 'Medi8' photocopied and accessible in every classroom to be used where appropriate, and this idea was also included in the Phase 2 action plan.

The programme specification configured from the extraction of the CMOC from the data indicates that the mechanisms that were deliberately implemented in order to trigger the desired outcomes (the CAR model, 'Medi8' training and SFC) were considered facilitatory by the majority of participants in achieving the above outcomes, and the complex interplay of Cs, Ms and Os under each of these mechanisms are explored in Chapter 6 as a means of answering the research questions of *how* these mechanisms contributed to positive change.

5.4. Action Plan for Phase 2

During the feedback session to verify the findings with participants, an action plan for Phase 2 of the CAR was collaboratively generated. This took the form of a list of action points to be carried out as a means of further embedding the mediation practice within the school (see Table 29). During this meeting, it was agreed that further one-to-one coaching on a weekly basis was not necessary, as TA SE was strong enough that they felt they could continue mediation practice on their own using the flashcards and 'Medi8' pack. It was therefore agreed that a more informal drop-in would be appropriate, where TAs could come to me with concerns or questions regarding their practice on a termly basis and I could offer support and coaching at this time. It was agreed that other TAs utilising mediation (further to the whole-staff training) could also take this opportunity to receive support. In the interim periods, the three TAs involved in Phase 1 of the project would act as mediation mentors for any TAs who were struggling with the process.

Table 29: 'Medi8' Phase 2 – Action Plan

Agreed action	**To be actioned by…**
Staff meeting to explain the project and introduce the 'Medi8' cards	SENCo to organise appropriate time for staff meeting and TEP to deliver training
TAs to have access to the cards during lessons to support small groups or individual pupils they are working with	TEP to provide laminated cards for school staff and to hand out at the staff meeting
Teachers to consider embedding 'Medi8' strategies in lesson planning by considering which step/s would be helpful to work on with a group/individual pupil	Teachers to start doing this following staff meeting
Termly drop-ins with EP to answer questions/support mediation practice	TEP to discuss with SENCo during next term's planning meeting
Three TAs to act as mentors to other TAs utilising 'Medi8'	TAs to make themselves available on informal basis to provide support where necessary

5.4.2. Context, Mechanism and Outcome Configuration

Following the analysis of the various data sources, it was possible to create the programme specification in the form of an all-encompassing CMOC (see section 4.6 for details on the procedure used to create the CMOC). The flow diagrams below present the range of Cs, Ms and Os which emerged from the RE, and the numbers in brackets represent the number of participants who mentioned that particular feature:

Figure 8: Contexts emerging from the Realistic Evaluation

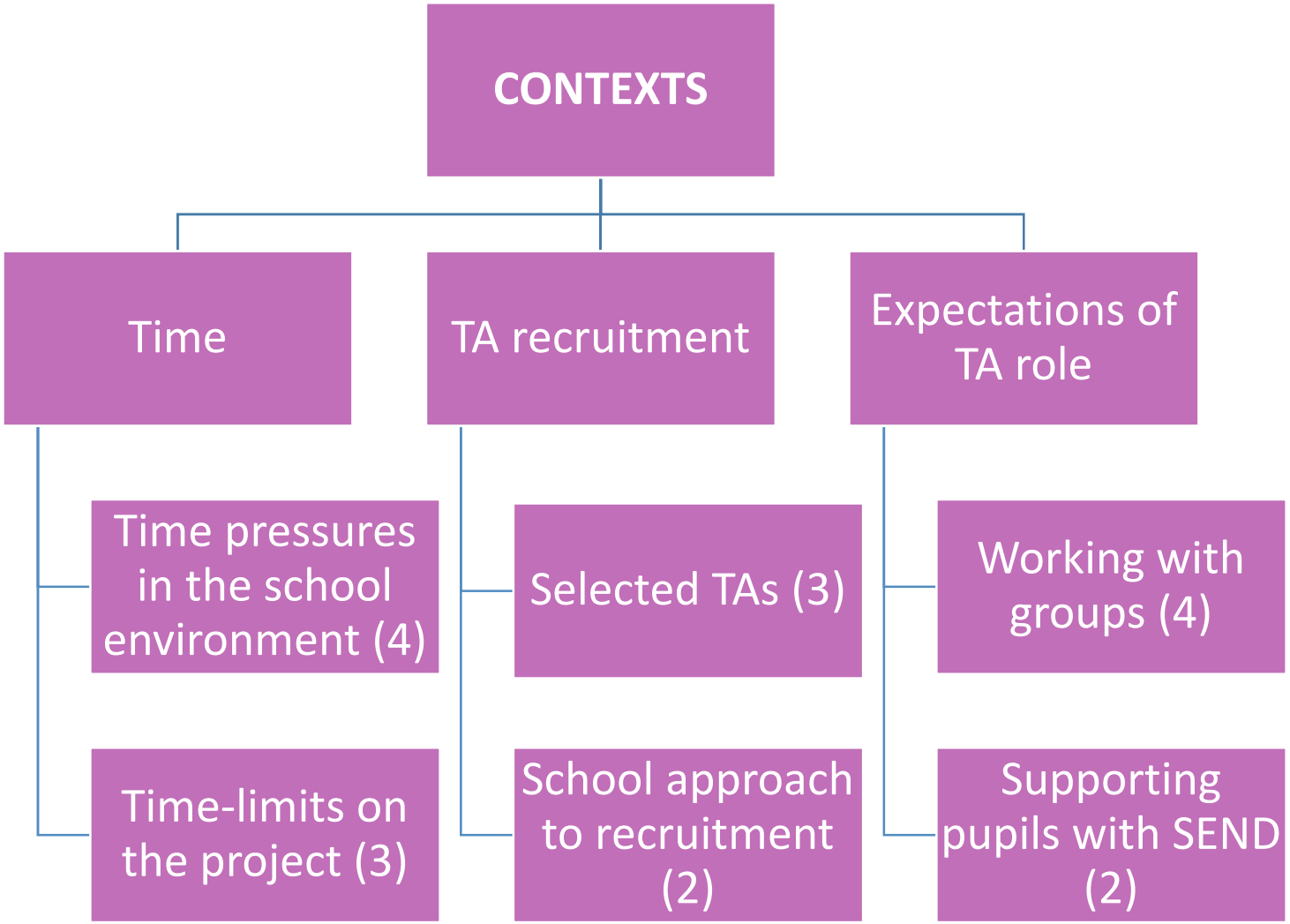


Figure 9: Mechanisms emerging from the Realistic Evaluation

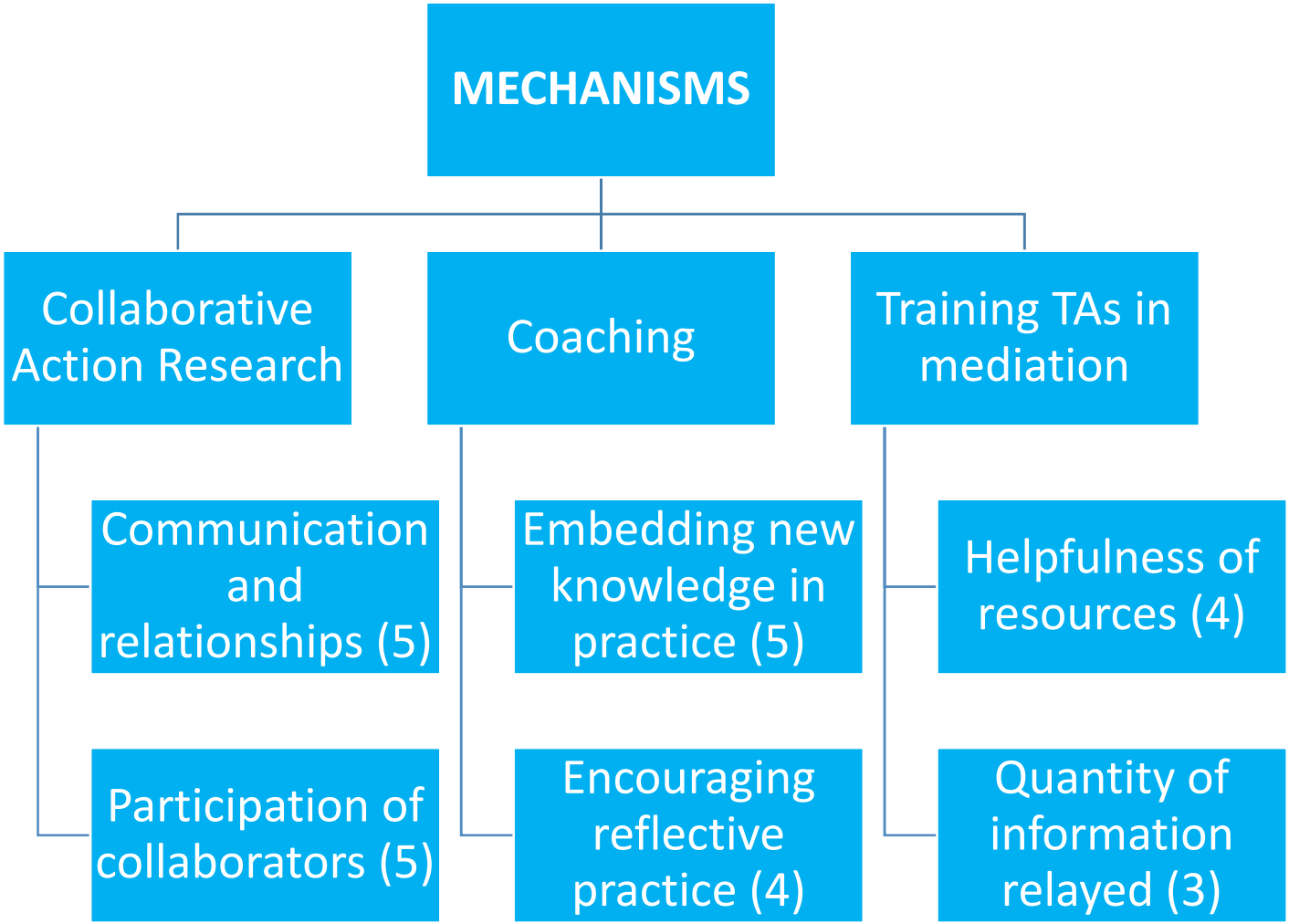
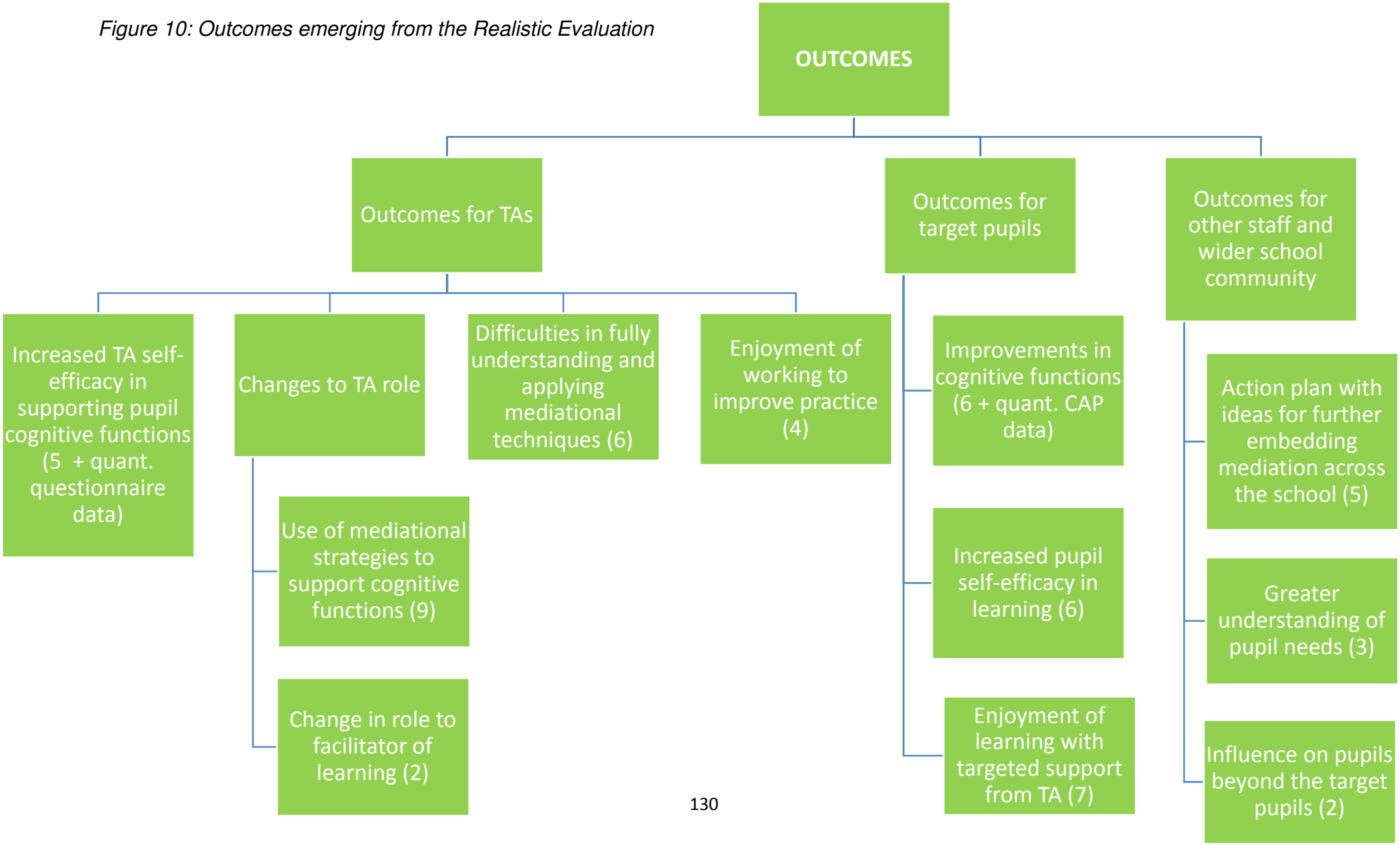


Figure 10: Outcomes emerging from the Realistic Evaluation



CHAPTER 6: DISCUSSION

In beginning to make sense of the complex interplay of Cs, Ms and Os extracted from the data in the current project, it is important to consider the purpose of conducting an RE of a programme. Pawson and Tilley (1997) describe three guiding determinations of realist research strategy as increasing our specificity of 1) “our understanding of the mechanisms through which a programme accomplishes change”, 2) “our understanding of the contextual conditions necessary for triggering programme mechanisms”, and 3) “outcome pattern predictions according to context and mechanism triggered” (p.114). This increase in specificity can then be used to refine and revise the initial programme theory (presented in Table 11). Sections 6.1 and 6.2 of this chapter intend to capture the increase in specificity regarding the answers to the research questions that were the focus of the CAR project based on the findings presented in Chapter 5. Section 6.3 discusses the implications that this has for the revision of the programme theory. Finally, the limitations of the research are explored before implications for EP practice and future research.

6.1. Increasing specificity in response to the research questions

The research questions that the CAR project aimed to answer using RE were as follows:

- **Research question 1:**

  How did the introduction of a coaching intervention for TAs in dynamic assessment-inspired mediation influence TA practice and self-efficacy in a primary school?

- **Research question 2:**

  How did the introduction of a coaching intervention for TAs in dynamic assessment-inspired mediation influence pupil outcomes in relation to targeted cognitive functions?

Attempts were made to implement the appropriate mechanisms to trigger the outcomes of improved TA SE and positive changes to practice, as well as pupil outcomes in relation to cognitive functions, and an RE was conducted to answer the research questions above. However, the inherently unpredictable and complex nature of social programmes means that manipulation of conditions to create the ideal context for positive change was not possible. Therefore, although some conditions were set up to test the theory, data analysis necessarily included keeping an open mind for other factors influencing the efficacy of the intervention (or "eyes open for other possibilities": Pawson & Tilley, 1997, p.87).

6.1.1. Exploring the interplay of contexts, mechanisms and outcomes related to Collaborative Action Research, 'Medi8' training and solution-focused coaching

6.1.1.1. Collaborative Action Research

6.1.1.1.1. Communication and relationships:

One of the strongest mechanisms that emerged through the RE with regards to the CAR process was the role of effective communication and positive relationships in supporting the TAs in their practice (mentioned by 5/10 participants). Effective communication between the TAs and myself was highlighted in the data:

Table 30: Quotations in support of the mechanism 'Communication and relationships': TA-researcher communication

TA1	*Most of the time I did tell you this wasn't working right or this wasn't working right and then we did change as we went along didn't we?*
SENCo	*You were really flexible which was great and you, you know you adapted so that you came in on different days to see the TAs, you know it, it evolved as it went along to make sure it was getting the best for everybody concerned so that was fine, no problem, but actually in the end I think you… were able to make those arrangements directly after you'd met them*

It is hypothesised that the ongoing communication and subsequent adaptations made to the project contributed to TA SE (and subsequent pupil outcomes) as they felt able to bring concerns to me and discuss things they needed more help with. However, it is important to acknowledge that my dual role as both author of the intervention and as coach responsible for supporting its implementation may have influenced responses in terms of social desirability.

Further effective communication reportedly took place between the teachers and TAs:

Table 31: Quotations in support of the mechanism 'Communication and relationships': TA-teacher communication

TA3	*Yes um… the feedback to T3 after I'd worked with P3, I felt was good and I think also good for the teacher*
T3	*Um I think that um having the teaching assistant work with a specific pupil, that made the, sort of opened up that communication with them about that specific pupil a little bit easier and discussing the specifics of what the needs of that child were*

This was partly related to the TA's level of confidence with regards to approaching the teacher to ask for what they needed:

Table 32: Quotations in support of the contextual factor 'Selected TAs': TA confidence to approach teacher

TA1	*I had to, err, remind the teacher that I'm working with this child, I need to work with this child*
TA3	***TA3:*** *I was able to say what P3 was able to do while I, you know while I worked one-to-one with him, whereas you wouldn't have had feedback like that before* ***R:*** *She wouldn't have had that on him* ***TA3:*** *No* ***R:*** *And did you have specific times to do that or did you just always just informally do it*

	TA3: Um… morning times usually, or of a lunch time, even if it was just a 5 minute conversation of how, how it went today with him, um… ***R:*** *And did you take the initiative to initiate that or would she ask?* ***TA3:*** *Well um a bit of both* ***R:*** *A bit of both yep* ***TA3:*** *Yeah but usually I'm quite because (laughs) because I'm on a strict timetable type thing I'd try, I would run up and try and fit in, fit in what I'd done with him* ***R:*** *Yeah* ***TA3:*** *Um, and let the teacher know, like where I was with him what's happening and what um, I was gonna do next with him really*

This was not mentioned by TA2, and notes in my reflective journal described that she had experienced some initial difficulties executing the mediation practice, resulting in the cancelling of a coaching session (as a result, the 'Week 2' SE score for TA2 as presented in Figure 6 refers to the second coaching session I conducted with her as opposed to the second week of the intervention). When I probed this issue further with her and the teacher, it emerged that she had not managed to negotiate one-to-one time with the pupil, which may be a reflection of the fact that TAs in the school are more frequently deployed to work with groups of pupils as opposed to individuals. I was subsequently able to explain to the teacher in more detail what was required and a regular slot was scheduled for TA1 to work with P1. Therefore, personal characteristics of the TAs in terms of their perceived capability to challenge the normal

practices of the classroom played an important role in the initial levels of communication during the project, and this emerged as another contextual factor (mentioned by 3/10 participants). These findings align with research by Lehane (2015), who stated that the initiative for communication between TAs and teachers rested largely with TAs, and TAs in the study reported a necessity to feedback to teachers in the period after lessons, and that "It's down to TAs … very rare a teacher will come to see us" (p.11). One TA in Lehane's study reported that communication is "very much dependent on the teacher … and your relationship", and another reported that "there isn't really an opportunity to feedback … unless you literally go and seek them out … at lunchtime" (p.11). This is clearly a pertinent concern with regards to the teacher-TA relationship, and suggests that more needs to be done to promote opportunities for positive communication between staff that does not rely on TA initiative.

The effective communication reported in the data could have also been threatened by time pressures within the school, which was a relatively strong contextual factor (mentioned by 4/10 participants), as staff suggested it was difficult to find time to meet with each other to discuss pupils:

Table 33: Quotations in support of the contextual factor 'Time pressures in the school environment'

T3	*This is easier time if it is planned than, trying to snatch time with them around everything else*
TA3	*I think the management of time… is a big problem, because I've got my duties elsewhere, I've got my timetables elsewhere*

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Higgins and Gulliford (2014) also found that TAs in their focus groups referred to time pressures that they experienced within the school and the negative influence this had on their ability to carry out their role. This is a strong indication that TAs need to be afforded the appropriate time to access training and put their newly-acquired skills into practice if they are to effectively fulfil their role in supporting pupil learning.

However, despite these pressures, the RE suggested that the project opened up effective communication channels between staff. This was largely due to the positive relationships that already existed and were further fostered between TAs and teachers, as well as the development of positive relationships between TAs, teachers and myself, both of which were reflected in the data:

Table 34: Quotations in support of the mechanism 'Communication and relationships': positive relationships between TAs, teachers and the researcher

TA1	***R:*** *I think we were, in our meetings together we were able to talk about that and if, with the teachers did you feel you were able to be honest about…* ***TA1:*** *With my teacher yes I was yeah* ***R:*** *Ok good* ***TA1:*** *Yeah she was helpful*
TA2	*People were listening to me really, and they and they were accommodating, allowing me to, you know, it wasn't an issue with me working with P2, um… so I knew that I was being supported by the school, and by yourself*

These findings align with criteria stipulated by Oja and Smulyan (1989) regarding successful CAR: the need for communication between participants and positive relationships. These findings also suggest that this project was able to achieve the goal of CAR proposed by Sagor (1992), where "teams of practitioners who have common interests … work together to investigate issues related to those interests" (p.10), therefore promoting strong relationships between these professionals with the goal of improving practice. The emphasis on shared ownership of the project ensured that the research was very much being done *with* and not *to* the TAs, promoting their sense of being equal participants in this research and consequently their confidence to approach teachers and ask for time with target pupils or opportunities to feedback (although some further support was necessary to achieve this in one case).

A threat to positive relationships could have come from the top-down approach that was adopted regarding TA recruitment. Although this was only mentioned by two participants, it was agreed at the feedback meeting that this was an important factor in the project:

Table 35: Quotations in support of the contextual factor 'School approach to recruitment'

SENCo	*I think what we chose were TAs that we felt would benefit from some CPD but maybe it was a step too far for them*
TA3	*Although, um, were told oh this is what you're gonna be doing, it was sort of, thrown upon us as in, you've been chosen, that's it (laughs), so um might have been… (laughs), you're doing it that's it*

It is possible that this may have had an influence on the TAs initial feelings of SE to support pupil learning (as they had been selected for a project that required them to improve their practice), as well as their response to the training and their initial feelings of ownership regarding the project. In their practice guidelines for the WOWW intervention, Kelly et al. (2011) suggest that researchers only work with teachers who offer voluntary participation. One of the researchers (Bluestone-Miller) recounted working with two class teachers who were selected by the head teacher and who did not consider themselves in need of help, and reflected that although the teachers allowed him to access their classes and interview pupils about the use of SF scaling, they did not engage in any scaling when he was not in the lesson.

However, despite this threat, the findings do not suggest that this damaged the positive relationships between staff in the project, and in contrast to the findings of Kelly et al. (2011), some TAs did report utilising the mediational approaches outside their work with target pupils. This was perhaps due to in part to the existing positive relationships between the teachers and TAs. Lehane 2015 states that “communication and collaboration (between teachers) is dependent on rapport and relationships… which is dependent on teacher disposition rather than a matter of professional routine or school systems” (p.12). However, according to Myers et al. (1989), the centrality of the subjective realities of stakeholders in CAR diminishes the sense of imposition by promoting shared ownership of outcomes. Through the coaching sessions, TAs were given a regular platform to express their views on the intervention and to participate fully in the target setting for the following sessions, sending a strong message that their perceptions were valued and indeed crucial to the progress of the project. This

addresses Oja and Smulyan's (1989) concept of democratic leadership, as changes were not imposed upon TAs but agreed collaboratively with them.

A further mechanism that was reported to have been generated through the CAR process was positive relationships between TAs and their target pupils (mentioned by 7/10 participants, including all pupils and TAs), which likely had an influence on the pupil outcomes of improved SE and enjoyment of learning:

Table 36: Quotations in support of the mechanism 'Communication and relationships': positive relationships between TAs and target pupils

TA1	*Yeah responded really well, she enjoyed working with me, and um, obviously getting a certificate at the end of it as well*
TA3	*Yeah so there's definitely a positive relationship, this morning I had him standing up shouting I rock, that would never have happened (laughs) never!*
P2	*I think they're very helpful (about TA2)*

Lidz's MLERS (2002) stipulates that affective involvement (showing warmth and caring in interacting with the child and taking pleasure in being with the child) and praise and encouragement from mediators are crucial to effective teaching and learning interactions, and therefore the positive relationships between TAs and target pupils likely also played a significant role in pupil enjoyment of learning during the intervention. In addition, Higgins and Gulliford (2014) highlight the importance of fostering positive relationships between staff and the pupils they work with in terms of building SE. Furthermore, research has suggested that the qualities of teacher–pupil

relationships have a direct impact on pupil learning, school adjustment and behaviour (Kelly et al., 2011; Baker, Grant and Morlock, 2008) and that pupils with teachers who are responsive and able to dedicate greater amounts of time to learning tasks have more successful outcomes (Connor et al., 2005). This suggests that the positive outcomes for pupils in terms of their cognitive functioning were also attributable to the personalised nature of the work being carried out, as well as the positive relationships which had been built during the CAR project.

One of the outcomes that emerged in relation to the CAR process was the TAs' enjoyment of working on their practice. The TAs in the project were long-serving with many years of experience (12, 19 and 20 years), but had not had a chance to participate in research with a focus on their own professional development prior to the current project. It can be hypothesised that TAs may have benefitted in terms of their SE regarding fulfilling their roles by being treated as professionals of equal status to other teaching staff in the school. The CAR process facilitated TAs in feeling their views were not only valued but crucial to the success of the project and that they could make a positive difference to the children they were working with, as suggested by TA2:

"People were listening to me really, and they and they were accommodating, allowing me to, you know, it wasn't an issue with me working with P2, um… so I knew that I was being supported by the school, and by yourself" (TA2)

This fits with Higgins and Gulliford's idea that to promote TA SE, they need to be valued and held in the same esteem as other professionals in the school (Higgins and

Gulliford, 2014), and the CAR process therefore likely contributed to their increased sense of SE to perform their role in supporting learning.

6.1.1.1.2. Participation of teachers and SENCo

Participants reported that the lack of explicit participation from the teachers and SENCo in the mediation training and subsequent implementation of mediation within the lessons made it difficult for TAs to receive guidance in the interim periods between coaching sessions (5/10 participants, including the three teachers, the SENCo and one TA):

Table 37: Quotations in support of the mechanism 'Participation of collaborators'

SENCo	*Yeah I guess um, if I had perhaps known more about, or sat in on the sessions with you and the TA, that maybe during the week I could have supported you and kind of maybe monitoring it or they could've come to me if they weren't sure what was, they were supposed to be doing, I guess*
TA1	*We could do with them, we could have done with the meeting more often... And more with the teachers as well involved*
T2	*Because I wasn't totally aware of what she needed to do, I wasn't then guiding her like every day ooh you need to do this with this child today*

Again, time pressures contributed to this, as the demands on teachers' time meant that they were often only available for brief meetings after lessons, as suggested by TA3:

"Morning times usually, or of a lunch time, even if it was just a 5 minute conversation of how, how it went today with him, um…, I would run up and try and fit in, fit in what I'd done with him" (TA3)

This posed a threat to the success of the CAR with regards to the collaborative involvement of all key stakeholders (Sagor, 1992). Upon reflection, the difficulties experienced by TAs in their practice of mediation, which emerged as a strong outcome (mentioned by 7/10 participants), may have been minimised if the teachers and SENCo had been more active collaborators in the day-to-day running of the intervention. Had they been available for support and guidance, TAs may have been more successful in embedding mediation within their practice within the six weeks of the intervention.

6.1.1.1.3. Influence on the wider school community

A further outcome which was highlighted through the RE was the way in which the mediation project had already started to have an influence on the wider school community, even before the action plan had been put in place for the next iteration of the CAR. This form of organisational change is the goal of CAR. The CAR process positioned staff members as researchers and created an "evidence-based self-developing community" (Lomax, 1990, p.5), which enabled them to think critically about how the intervention could be tailored and how it could reach the wider school community. The action plan for Phase 2 which was subsequently formed during the feedback meeting drew on these ideas and involved collaboration from all staff members equally, further promoting the idea that the views and ideas of TAs and teachers were central to the success of this project. This again aligns with the idea that

staff SE is related to their feeling valued and being held in the same esteem as other professionals in the school (Higgins and Gulliford, 2014).

The action plan for Phase 2 of the CAR involved the class teachers taking more ownership of guiding TAs in their use of mediation and directing them to use certain approaches through their lesson planning. This aligns with stipulations in the SEND Code of Practice, which clarifies that, “Teachers are responsible and accountable for the progress and development of the pupils in their class, including where pupils access support from teaching assistants or specialist staff.” (DfE/DoH, 2014, p.99).

6.1.1.2. Exploring contexts, mechanisms and outcomes related to the ‘Medi8’ training

6.1.1.2.1. Helpfulness of the ‘Medi8’ resources

Both pupils and TAs referred to the usefulness of the resources provided as part of the ‘Medi8’ training package (4/10 participants):

Table 38: Quotations in support of the mechanism ‘Helpfulness of resources’

P3	***P3:*** *Um, I thought this one was the best (gestures to the flash cards)* ***R:*** *You liked the cards!*
TA1	*The make a plan was very helpful, that sheet and also the reward cards*
TA2	*The certificates that you gave me, they were useful… Gave her a real boost*

TA3	*I love the cards, the cards are really, the children are really responsive and receptive to the cards*

The usefulness of the resources was a significant contributory factor to some of the most important outcomes of the current research: the changes in the TA role to incorporate mediational strategies and to facilitate learning. These changes align with the suggestions made by Sharples, Webster and Blatchford (2015) in their guidance for TAs, where teachers are instructed to "use TAs to help pupils develop independent learning skills and manage their own learning", and the authors suggest that TAs "should be trained to avoid prioritising task completion and instead concentrate on helping pupils develop ownership of tasks" (p.4). These suggestions were made in response to research by Radford, Blatchford and Webster (2011) which found that TAs were inclined to "close down" talk (p.632) and supply answers as opposed to asking open questions and promoting independence. Sharples, Webster and Blatchford (2015) suggest that providing the right support at the right time, giving as little help as is needed in the first instance to promote pupil ownership of the task, asking open questions and encouraging risk-taking should be encouraged in TA practice. The nature of the 'Medi8' intervention promotes these aspects of TA practice through the explicit use of base-lining and the prompt questions provided on the flashcards to be used in the early stages of the learning task which encourage pupils to take responsibility of the learning process (e.g. "What do you think you need to do here?", "How can we work out what we need to do?").

The ‘Medi8’ resources can also be considered to have feasibly contributed to improved pupil outcomes as a result of the changes to TA practice. By using the resources regularly with pupils, TAs were supporting crucial cognitive functions central to effective and independent learning. The resources likely assisted in supporting pupil SE in learning by building their independence and demonstrating their ability to perform learning tasks with diminishing assistance from adults, albeit more so when the TAs were present in their lessons. A review of inclusive classrooms conducted by Rix et al. (2009) highlighted the importance of high-quality discourse between staff and pupils in the classroom in promoting positive outcomes for pupils, which consists of questioning that promotes higher-order thinking, reasoning and inference, providing opportunities for problem-solving, discussing and elaborating on ideas, emphasising the relevance of learning to pupils’ own lives, linking to prior understanding and encouraging pupils to identify and share their thoughts. All of the aforementioned aspects of high-quality discourse are promoted through mediation and are explicit features of the ‘Medi8’ training package.

Furthermore, the reward cards celebrating pupil use of cognitive functions were a way of promoting enjoyment of the mediation sessions whilst emphasising the focus of the intervention as the cognitive functions and not the output of work, which likely contributed to the outcome of pupil enjoyment of learning, as suggested by P2:

R: *What about um, getting these (shows reward cards)*

P2: *Yes, I liked this one*

R: *Did you? So you liked 'today you made a plan to help you remember all the steps in a task', and did you find that helpful?*

P2: *Yes*

These findings tie-in with research suggesting that enjoyment and positive experiences are central to effective learning (Goetz et al., 2006; Shernoff et al., 2003), and this likely had an impact on the positive outcomes for pupils in terms of their cognitive functions. Bowles, Radford and Bakopoulou (2017) found that the majority of TAs they interviewed about their use of inclusive pedagogic approaches talked about the importance of providing emotional support to pupils (e.g. emphasising competence and progress, offering praise and encouragement, helping to regulate mood) to build their confidence and self-esteem and facilitate their readiness to learn. These are all inclusive approaches that are promoted through the 'Medi8' intervention.

Although some of the mediation took place outside of the classroom, which was not the intended format, these findings illustrate that pupils who are not typically the focus of one-to-one TA support can thrive when given some individualised and targeted support for their cognitive functioning, creating further support for Sharples, Webster and Blatchford's (2015) argument that TAs should not be used solely to support pupils with significant SEND, but should be trained and deployed to support the learning of pupils of all abilities, allowing teachers to do the same. Although they may not require the same level of mediation, pupils without specific SEND benefit just as much from appropriately-pitched mediation that assists them in moving towards independence in

new skills within their ZPD (Vygotsky, 1978), and this can transform their learning experiences and promote enjoyment and engagement.

The ‘Medi8’ resources also succeeded in helping redefine and re-shape the TA role within the classroom as a facilitator of learning, in line with another of Sharples, Webster and Blatchford’s stipulations that TAs should be used to “help pupils develop independent learning skills and manage their own learning” and that there is a need to improve the “nature a quality of TA’s talk” and train them to “avoid prioritising task completion” (2015, p.4). The first step of ‘Medi8’ is helping the child to ‘Be Independent’, and the initial prompts (e.g. “What do you think you need to do here?”, “How can we work out what we need to do?”) encourage TAs to ask open questions to encourage the pupil to engage in independent problem-solving and help TAs to avoid over-mediation, or giving answers to pupils before they have had the opportunity to formulate ideas for themselves.

However, despite the perceived helpfulness of the ‘Medi8’ resources, TAs still found it difficult to employ the strategies introduced to them in the training. As noted above, these difficulties were related to the inherent complexity of in-the-moment mediation (Missiuna and Samuels, 1989) and a lack of understanding of how the strategies can be applied in all contexts across all learning tasks with all pupils, leading to more explicit modelling and scaffolding of approaches and the creation of bespoke resources for the TAs to use. Additionally, the expectation for TAs to work in groups and with pupils with SEND meant that TAs found it challenging to approach their role in a different way and work with individual pupils to practice the techniques they were

learning, particularly at what they perceived to be the detriment of the pupils with needs:

Table 39: Quotations in support of the contextual factor 'Expectations of TA role': working with groups and supporting pupils with SEND

TA1	*I was ending it as a group, started with P1 and then there was others on the table as well and you you can't kind of ignore them*
TA3	*Because they're sort of floating in the middle of both SEN and they're quite able and capable in the classroom, so he wouldn't have come on my radar to do extra work with him, but working with him, um, I feel he has needs, but unfortunately, because he isn't SEN, um he doesn't he wouldn't get the one-to-one which other children would receive*

This highlights an important outcome of the 'Medi8' intervention, as research has suggested that TAs are regularly being used as the primary educator for pupils with SEND (Blatchford, Russell and Webster, 2012). Sharples, Webster and Blatchford (2015) suggest that this is "no longer an option" (p.4), and that the needs of all pupils are met through "high quality classroom teaching" (p.4), meaning that pupils with SEND spend as much time with the classroom teacher as their peers. This is also made clear in the SEND Code of Practice, which emphasises the responsibility for quality teaching lies first and foremost with class teachers (DfE/DoH, 2014). Consequently, the message sent through the 'Medi8' intervention aligns with these stipulations in that it illustrates that TAs can be deployed to add value to the classroom teaching with all pupils through supporting their learning skills as opposed to simply supporting groups of pupils with SEND.

Furthermore, the perception that 'Medi8' was a discreet intervention to be carried out one-to-one (and in some cases outside of the classroom) was problematic in conveying the ad hoc nature of the approach. However, during action-planning for Phase 2 of the CAR, the perceived usefulness of the flashcards detailing the steps of 'Medi8' lead to the suggestion that they be used throughout the school by TAs in all lessons, as well as the suggestion that teachers could build the mediational approaches into their lesson planning, meaning that more pupils in the school would be supported in their cognitive functioning and experience similar benefits to the target pupils. This suggests a greater understanding of the wider applicability of the resources and approaches had been reached.

6.1.1.2.2. Quantity of information provided in the 'Medi8' training

The TAs raised some concerns about the quantity of information provided in the 'Medi8' training (3/10 participants):

Table 40: Quotations in support of the mechanism 'Quantity of information relayed'

TA1	*See the first pack that we had… (finds out the resources) This one, the intervention strategies… We could do with more going through them, in detail, yeah… There's a lot in there*
TA2	*Yeah there was a lot of information, um, to take in (coughs), but, because I've got all the, you know like the handouts and stuff like that obviously I was able to look at that in my own time*
TA3	*The only thing I'd say was when it was first introduced to us it sounded more daunting than what it's actually turned out to be because when you say oh,*

	you need to fill this in and you need to make the plan… Whichever child you're working with whatever that child need is, just a short snappy list of strategies, because as I said… I'm not gonna sit and read, I'll be honest and say, I won't sit and read through that, and I haven't sat, I've tried, but time gets the best of me… And I just, I can only get it out and I just think what are we doing today, and then flick through it quickly, so…

Although the materials were carefully put together and scaffolded to support their use as part of the 'Medi8' process, the TAs still felt they were overwhelming to a degree. One of the resources that was directly criticised as being lengthy was the list of intervention strategies copied directly from the CAP manual. This was an extensive document, but it was explained that the idea of this was that TAs could use the comprehensive list to inform their approach with future pupils with a range of different needs. However, it is acknowledged that in future replications of this intervention, a shortened version of strategies relevant to the target pupils could be provided in the early stages, and perhaps the comprehensive list could be provided towards the end of the intervention to avoid initially overwhelming TAs. The planning and reflection sheets were designed to be completed in as brief a time as possible and involved tick lists (Appendix 9). However, the TAs still found these difficult to complete with the time pressures they were experiencing. This could have been related to some of their initial difficulties in fully understanding what is meant by mediation and how these approaches enhance and add value to their normal practice, and therefore the perceived value of filling out the planning and reflection sheets. This was likely due in part to the fact that the three TAs involved in the current project were well-experienced

and long-practicing TAs who had become accustomed to their way of practicing, and who perhaps found it more difficult to consider alternative ways of practicing than a TA who was relatively new to the profession and used to utilising training materials. This emphasises the importance of the coaching sessions for embedding the use of planning and reflection in TA practice, and this is discussed in Section 6.1.1.3.

6.1.1.3. Exploring contexts, mechanisms and outcomes related to the SFC model

6.1.1.3.1. Embedding new knowledge in practice

The majority of staff mentioned during the RE that the coaching sessions were crucial as a follow-up from the initial training session to embed what had been learned about mediation into TA practice (5/10 participants). The coaching sessions can be considered helpful in building TA SE, facilitating change to TA practice and subsequently improving outcomes for pupils in terms of their targeted cognitive functions. It is also likely that the coaching sessions were valuable in assisting TAs in processing what was initially considered an overwhelming quantity of information.

Table 41: Quotations in support of the mechanism 'Embedding new knowledge in practice'

TA1	*At the beginning it was over-, overwhelming…Yeah it was too much like and, after you've done couple like…And you got into routine, you got into the routine of doing it… we needed the help, you coming to telling us what to do, how to start*

TA2	*I think it was just, just getting used to them and getting, making sure I was fully understanding what my role was really*
TA3	*I would have probably have done it but then I'd have thought am I doing this right and what's the reason I'm doing this and, oh I'll just I'll post these pieces of paper off to you and say bye bye and forget all about the sessions and that's it honestly yeah because you do don't you?*
T1	*When she realised what the plan entailed, and how simple it actually was, I think that gave her the confidence and then she was able to relate that with the child*
SENCo	*As the project evolved, they began to get the idea that this is something you could use within the classroom and within whatever lesson that you're doing*

As demonstrated above, TA3 suggested that without the coaching sessions, it was likely that she would not have carried out the mediation effectively and would "forget all about the sessions", raising important questions about the value of one-off training sessions delivered to school staff in inducing real changes to practice. It is possible to hypothesise that beyond introducing practitioners to new concepts, one-off training events without follow-up are likely not sufficient to induce real and lasting change to practice. Furthermore, as mentioned in the literature review, Erdem and Demirel (2007) highlight the negative impact of the "sink-or-swim" (p.575) approach to staff training on staff SE. My reflective journal notes highlighted that after the initial training session, TAs had demonstrated varying degrees of understanding of the process of mediation in the initial coaching sessions, and all TAs required further mediation themselves to

begin to use 'Medi8' in their classroom practice. This aligns with research that suggests that post-training follow-up sessions are crucial for embedding newly-acquired knowledge and skills to bring about real practice change (Higgins and Gulliford, 2014). The weekly SE measure (see Figure 6) highlights that for two of the three TAs, the most significant increase in their SE occurred after the initial coaching session, suggesting that even a one-off follow-up to help embed what has been addressed in training could be of benefit in busy school environments. This aligns with the findings of Braunstein and Grant (2016), where an increase in perceived goal progress occurred over a brief period of time (following a series of SF questions), causing them to suggest that "even brief exposure to SFC may positively impact clients' perceptions of goal-directed change" (p12).

Despite the positive influence of the coaching sessions, it was noted by several participants that the embedding of mediational practices may have been more significant if the intervention had been able to run for a longer period of time (3/10 participants):

Table 42: Quotations in support of the contextual factor 'Time limits on the project'

SENCo	*I think, if the project had been able to run a little bit longer they would have developed that confidence*
T1	*I think that would be I think time to embed I think at this point because I think then we would be able to see how we would develop it further, I don't think we're almost at the point of learning anything new*

T2	*Um probably just keep going and use the range of skills that you taught with them and modelled with them and keep going, but then learning how to manage that within a group situation for my TA*

The intervention was limited to six weeks due to the time of year that it was conducted. There were only eight weeks remaining before the end of the Autumn Term (with two put aside for data collection), meaning that any extra sessions would have needed to take place after the Christmas holidays. It was therefore agreed that to ensure the intervention was fresh in the minds of the participants when the RE took place, it would draw to a close after six weeks. However, it is suggested that future versions of this research consider a longer intervention to ensure that the mediational approaches have become fully embedded in TA practice, and that they can begin to generalise the skills to other situations and pupils. This links with Haring and Eaton's Instructional Hierarchy of Learning (1978), which suggests that once a new skill is developed, it is important to rehearse this skill until fluency is achieved as a prerequisite to achieving maintenance and eventually generalisation of that skill to different contexts. It is likely that by the end of the 'Medi8' intervention, TAs had begun to achieve fluency in using the specific mediational approaches they had been working on (e.g. planning and sequencing, encouraging sharing thoughts), but had not yet reached a level of maintenance or generalisation, further suggesting the need for a longer intervention.

6.1.1.3.2. Encouraging reflective practice

Participants commented on the way in which the 'Medi8' intervention encouraged TAs to reflect more explicitly and regularly on their practice and the influence of their work with pupils, both through the use of the reflection sheets and in their conversations with teachers and myself (4/10 participants):

Table 43: Quotations in support of the mechanism 'Encouraging reflective practice'

TA2	*I used those (reflection sheets) every week*
TA3	*Well this is what I go through with the teacher, because after, soon as I, um, I worked with him this morning especially, um, I had to write it up there and then because it's that fitting it in again, and I've took the as I've said I copy it, that also lets me reflect on, what I did with him this morning, but I'm able to take it to the teacher and say, this is how this lesson went this morning, and, I might not be working with P3 again, you know, for this lesson, obviously not for this lesson but this sort of part, of like fractions or percentages, but at least the teacher knows what I think*
T2	*I think it was really nice that they had that time to be reflective, because I think often because we are telling them what to do and when they just are going through that, like, procedure, whereas actually that did give them more time to reflect on what impact they were having which was quite nice*

This type of reflective practice is extremely valuable in engendering durable change and improving practice (Sellars, 2012). It is highly likely that this reflective practice also contributed to the positive outcome of greater understanding of pupil needs, as TAs regularly reflected on pupil progress during conversations with teachers and in

coaching sessions. Furthermore, reflecting on the influence of the 'Medi8' intervention facilitated the generation of ideas for the Phase 2 action plan regarding how mediation could be helpful within the wider school context.

It is important to note that the above findings have been interpreted while maintaining a keen awareness of my impact on the research and its outcomes due to my dual role as practitioner-researcher, and I have attempted to exercise reflexivity throughout the interpretative process.

6.2. Personal reflection on the programme specification

Following the creation of the CMOC, I was able to reflect that it aligned closely with my understanding of how the project had developed, and captured many of the salient points noted in my reflective journal. For example, I had noted that comments from the teachers and SENCo early in the project that TAs were feeling that they were not being asked to do anything new had alerted me to the fact that they may be struggling with grasping the concept of mediating cognitive functions, leading me to take steps to address that in the coaching sessions by providing them with reward cards that made the focus of the mediation explicit (e.g. "Today I made a plan to help me remember the steps of a task"). The matter of the TAs' initial lack of understanding regarding what was expected of them subsequently emerged as an O in the programme specification regarding the difficulties in fully understanding and applying the mediational techniques. Furthermore, comments from the TAs during our coaching sessions had caused me to reflect on the time pressures they were experiencing when attempting

to work with target pupils and the strong positive relationships they were building with target pupils, both of which also emerged as a C and an M respectively.

6.3. Implications for programme theory

Pawson and Tilley (1997) describe the goal of RE as "discovering what works for whom in a set of *given* circumstances" (p.86) and to avoid making any attempts to generalise. In this respect, the outcomes for TAs and target pupils are specifically and perhaps solely relevant to the participants, school and social, historical and cultural context in which the current research took place. However, there may be some relevance to similar settings (with similar contexts) who wish to utilise a similar approach. Pawson and Tilley (1997) refer to "cumulation" (p.115), or continual programme refinement, where the goal of RE is "deepening, specifying, focusing and formalising understanding of programme C, M and Os" and "increasing understanding of how these elements are connected" (p.116). They define realistic cumulation as the process of "traversing between general theory (abstract configurations in the programme theory), and empirical case studies (focused configurations)", and discuss the possibility of weaving in findings from other empirical studies to produce a "middle range theory" which is abstract enough to underpin a range of programme types but concrete enough to withstand testing in the details of programme implementation (p.116). In this respect, weaving my findings in with those of previous studies (as described in Chapter 2) creates a cumulative picture of the kind of outcomes produced by this kind of programme in this kind of context.

The initial programme theory (presented in Table 11), presented the notion that:

- The employment of a CAR model (to open positive channels of communication between key stakeholders) and;
- The delivery of bespoke training in mediation followed by SFC for six weeks (to embed mediational approaches in TA practice) will lead to;
- Increased TA SE and changes in TA practice, meaning that TAs are able to more effectively support of pupil cognitive functioning, as well as improvements in targeted aspects of pupil's cognitive functioning.

The theory postulates that these mechanisms would be likely to trigger the desired outcomes in a context where TAs regularly take pedagogical responsibility for the education of pupils with learning needs in the classroom, do not have specific training in pedagogical approaches and supporting pupils' learning skills, feel devalued and have low-SE about their role, and practice in a supportive environment where school leaders are willing to hold TAs and their professional role in the same esteem as other practitioners. From the increased specificity afforded by the RE, it is possible to make a number of refinements to the initial programme theory (i.e. what Cs likely need to be established for certain Ms to trigger optimal Os for the staff and pupils):

Table 44: Refinement of Programme Theory

Aspect of CMOC	**Refinement of Programme theory (detailed in italics)**
Contexts	• TAs take pedagogical responsibility for the education of pupils with learning needs in the classroom; • TAs do not have specific training in pedagogical approaches and supporting pupils' learning skills; • TAs feel devalued and have low-SE about their role. *The current research suggests that interventions such as 'Medi8' can be effective in a context where TAs report higher levels of SE regarding supporting pupil learning (see Table 16 for TAs' pre-intervention SE ratings);* • A supportive school environment exists where school leaders are willing to hold TAs and their professional role in the same esteem as other practitioners. *The current research suggests that even in contexts where the TAs may experience a sense of being done 'to' as opposed to 'with' (e.g. where a top-down recruitment process is adopted), the benefits of such interventions can still be gained as long as positive relationships exist between TAs, teachers and senior leaders within the school. In contexts where such relationships do not exist, it is crucial that they are fostered and that TAs experience being held in equal esteem to their colleagues. It is important to note that the very implementation of a CAR project focusing on training TAs where TA views are central can give TAs a sense of purpose and responsibility, and a focus on mediational practice can help positively redefine the TA role, bolstering their sense of professionalism;*

Aspect of CMOC	**Refinement of Programme theory (detailed in italics)**
	• *Voluntary participation and a bottom-up approach to recruiting TAs to be involved in the project and training is implemented where possible, ensuring that TAs are fully invested in the intervention;* • *School leaders value the intervention and its aims and explicitly allocate sufficient time within the school day for TAs to work with pupils, meet with teachers and reflect on their practice, and agree to a substantial period of time over which the project can extend (e.g. a minimum of eight weeks, as six weeks was considered too brief in the current research). This also ties in with the need for explicit permission to be given to TAs by teaching staff for them to step outside the boundaries and expectations of their normal role (e.g. working with groups and supporting pupils with SEND) to enable them to engage with mediational practices).*
Mechanisms	• Employment of a CAR model, creating channels to facilitate positive communication between key stakeholders and encouraging communication between TAs, teachers, pupils and the researcher to promote the efficacy of the intervention. *The current research suggests that the level of participation from all staff is key, and that teachers and senior leaders need to be equally engaged and involved as the project unfolds to avoid disconnection and to allow for TAs to be fully supported in their practice. The RE suggests that allocated time slots for meetings between TAs and teachers to support this important*

Aspect of CMOC	Refinement of Programme theory (detailed in italics)
	communication and to enable less confident and forthcoming TAs to have opportunities to share their views would be a valuable mechanism in similar interventions; • Bespoke training in mediational practices (involving carefully-scaffolded resources with prompts and a pack of mediation tools). *The current research suggests that particular attention should be paid to the quantity of information relayed to TAs to avoid an initial sense of being overwhelmed;* • SFC for six weeks following the initial training to embed mediational approaches in TA practice, and to allow for individualised target setting for TAs (and pupils) to ensure that coaching and subsequent mediational approaches used are pitched appropriately (i.e. within the TA's and pupil's ZPD). *The current research suggests a longer intervention would be beneficial and emphasises the importance of these coaching sessions for encouraging TAs to engage in reflective practice;* • Opportunities for modelling and observation of mediational approaches by researcher to promote effective TA practice.
Outcomes	• Increased TA SE in supporting cognitive functions; • Changes in TA practice: TAs able to more effectively support of pupil cognitive functioning. *In the current research, TAs began to utilise a range of mediational approaches and strategies in their practice, which*

Aspect of CMOC	Refinement of Programme theory (detailed in italics)
	manifested in a shift towards facilitating pupil learning through supporting their cognitive functioning instead of focusing on work completion; • *TA enjoyment of working to improve practice;* • Improvements in targeted aspects of pupil's cognitive functioning. *The current research also suggests that pupil SE regarding learning improved as a result of the 'Medi8' intervention, and that pupils enjoyed the learning that took place during the intervention with targeted support from TAs;* • *Positive outcomes for the wider school community, including the generation of an action plan for further embedding mediation across the school in a second phase of the CAR, a greater understanding of pupil needs within the school and an influence on pupils beyond the target pupils.*

6.4. Limitations of CAR and RE and suggestions for future research

The limitations of the CAR project, the 'Medi8' intervention and the RE are discussed in Table 45, Table 46 and Table 47, and any ameliorative actions or considerations are presented alongside suggestions for future adaptions:

Table 45: Limitations of CAR and ameliorative actions / adaptations for future research

Limitations of CAR	**Amelioration / adaptations for future research**
Crucial communication (Oja and Smulyan, 1989) and weekly practice of mediation was threatened by the workload of busy teaching staff when conducting CAR in schools. In the current project, TAs and teachers found it difficult to make time in their schedules to work one-to-one with target pupils, to meet with me for coaching sessions and to meet with each other regarding the target pupils. Although regular slots for the coaching intervention were established, these were not always adhered to due to other pressures within the school (e.g. school trips, assessments), and TAs found it difficult to find time to work with target pupils on occasion due to pressures to work with groups of pupils with SEND within the classroom.	The establishment of rapport and positive working relationships with teaching staff was key in empowering them to find time within their day to meet with each other and myself and to work with target pupils. The regular, time-tabled slots for coaching sessions generally worked well, and TA2 managed to schedule a weekly one-to-one session with P2 during the lesson starter. It is suggested that in future projects of a similar nature, coaching sessions, one-to-one pupil work and feedback sessions between TAs and teachers are time-tabled and made explicit at the outset of the project to ensure that this crucial communication and weekly practice is sustained.

Limitations of CAR	**Amelioration / adaptations for future research**
Democratic leadership (Oja and Smulyan, 1989) is threatened by a top-down approach to recruiting teaching staff when the focus of the CAR is changing practice. In the current research, TA recruitment was top-down and driven by the head teacher, meaning that TAs were perhaps not completely invested as collaborators.	It is strongly suggested that in future projects, it is ensured that recruitment is carefully considered and that a top-down approach is avoided. Where possible, voluntary participation would be considered ideal, whereby all appropriate TAs are informed of the project and the intervention and then asked whether they would like to participate to improve practice. This would encourage investment, ownership and positive attitudes towards the CAR and intervention from the outset.
The top-down style of recruitment may influence participant responses in the evaluation of interventions due to social desirability, and may create a barrier to completely open and honest responses. In the current project, TA	It was ensured that RE interviews took place in a quiet room in a one-to-one situation to diminish the effect of social desirability as far as possible. Furthermore, the anonymity of findings was emphasised to create a sense of safety for TAs (and other staff)

Limitations of CAR	Amelioration / adaptations for future research
responses to questioning in the RE interviews may have been shaped by the desire to show improvement in practice and impress senior managers in the school, as well as to please me and meet my preferred outcomes.	regarding the disclosure of sensitive information. The self-reported changes to TA practice and SE was triangulated through interviews with pupils, teachers and the SENCo.
It can be difficult to communicate sensitive findings regarding practice to stakeholders in non-threatening ways (Timmins et al., 2006) and this was relevant in the current project due to the implications for the recruitment process and the difficulties TAs experienced in implementing mediation.	The programme specification was presented as key themes within the areas of Cs, Ms and Os. No participant codes were presented and only the number of participants mentioning the theme was disclosed, ensuring that anonymity was upheld. This enabled a degree of separation between the participants and the findings, reducing the threat posed by some of the more sensitive findings.

Limitations of CAR	**Amelioration / adaptations for future research**
The nature of CAR means that the findings are solely applicable to the context in which the project was carried out (e.g. this specific school with these specific participants), and wider generalisation regarding the efficacy of the 'Medi8' coaching intervention is not possible.	From a CR perspective, realities within the school context are considered to be mediated by the interpretations of people who are working and interacting in them, and therefore the most and arguably solely relevant findings of the current research would be whether the mediation intervention has influenced positive change within the participating school, with no attempts at wider generalisation. However, there is some practical wisdom gained from this project with regards to the type of Cs and Ms that can lead to such Os, and therefore there are some transferability to similar settings who may wish to carry out similar interventions and project work. Furthermore, through the RE lens, the findings of the current project contribute to the cumulation of programme theory (Pawson and Tilley, 1997), meaning that future research can build on the theory posited in this volume.

Limitations of CAR	**Amelioration / adaptations for future research**
Although the action plan for Phase 2 of the CAR is included in this volume, the outcomes of this phase are not included as they are ongoing.	The intention is that Phase 2 of the project will be carried out over the two terms following the completion of Phase 1, and the findings will be presented in further feedback meeting, where action-planning for a further iteration can take place if appropriate.

Table 46: Limitations of the 'Medi8' intervention and ameliorative actions / adaptations for future research

Limitations of the 'Medi8' intervention	**Amelioration / adaptations for future research**
There was a lack of involvement of the teachers and SENCo in the initial mediation training and the ongoing coaching sessions, which meant that they were a) not fully aware of the nature of the mediational strategies being practiced by TAs and b) unable to support TAs during the days between coaching sessions.	Informal meetings with teachers were arranged to give them more information about the nature of the intervention and the expectations of TAs as and when the necessity arose. However, it is strongly suggested that in future versions of the intervention, class teachers and senior leaders are involved in the initial training session and that regular three-way meetings are arranged between the researcher, TAs and teachers to ensure that all key stakeholders are fully informed.
The length of the intervention meant that although TAs had begun to develop some fluency with their mediation skills, they had not yet achieved generalisation of these skills	It is suggested that future interventions extend beyond the six-week duration of the current research to ensure that skills are fully embedded and moving towards generalisation to ensure the widest impact. In the current research, the skills will continue to

Limitations of the 'Medi8' intervention	**Amelioration / adaptations for future research**
across learning tasks and for use with other pupils (Haring and Eaton, 1978).	be rehearsed during Phase 2 with monthly supervision from myself.
TAs reported finding the quantity of information relayed during the initial training session overwhelming, which may have created a barrier to their early investment in the intervention.	Well-scaffolded resources and brief planning and reflection sheets were provided to support TA SE and mediation practice. In future versions of the intervention, a shortened list of relevant intervention strategies could be provided early on, with the comprehensive list of strategies to meet the needs of all pupils provided at a later stage when TAs are approaching the generalisation stage of their skill acquisition (Haring and Eaton, 1978).

Table 47: Limitations of the RE and ameliorative actions / adaptations for future research

Limitations of the RE	**Amelioration / adaptations for future research**
The accuracy of the transcripts from the RE interviews was not verified by another party, so it is not possible to confirm that participant views were recorded truthfully. Furthermore, the data analysis process was conducted by myself as the researcher, independently of the other participants, and in this respect could not be considered truly collaborative.	A feedback meeting was conducted where the key Cs, Ms and Os were verified with participants as a means of ensuring that their views had been accurately reflected in the findings.
The process of creating the programme specification was inherently influenced by my own personal experiences and interpretations of the CAR project. As a result, it could be considered a limitation of the	As my world view and that of the research design align with the principles of CR, where underlying social truths can only be accessed through the lens of individual interpretation (Robson, 2002), subjectivity would be viewed as an inevitable occurrence in research that seeks to explore the social world. Furthermore, the concept of validity is not

Limitations of the RE	Amelioration / adaptations for future research
research that this subjectivity inevitably poses a threat to the validity of the findings.	relevant from such an epistemological perspective. Instead, the quest to strengthen the credibility of the findings is primary (El Hussain, Jakubec and Osuji, 2015). Steps that were taken to strengthen the credibility of the data analysis were meticulous record keeping during the intervention, the feedback session where the programme specification was interrogated through seeking the subjective understanding of all the participants, and the selection of CMOCs based on their strength in the dataset.
My dual role as practitioner-researcher is a limitation of the current project as it introduces researcher bias and interpretation into the presentation of the findings of the RE and poses threats to ethical decision-making (Mohr, 1996).	Zeni's (2001) five checkpoints and El Hussain, Jakubec and Osuji's (2015) concepts of fittingness, auditability, credibility and trustworthiness were adhered to in order to reduce the influence of researcher bias through being transparent about the thought processes

Limitations of the RE	Amelioration / adaptations for future research
	and procedures used in the current project (see Table 12 for ethical considerations and Section 3.4 for issues of reliability and validity).

6.5. Implications for practice: EPs and school staff

Although no attempts at wider generalisation have been made from the findings of this RE, some assumptions can be made in terms of the "transferability" of findings to other similar contexts and for other similar practitioners (El Hussain, Jakubec and Osuji, 2015, p.1182). The current research reinforces the role that EPs can play in supporting schools in engaging in organisational change processes through CAR. One of the key aspects of the EP role is research (Scottish Executive Education Department, 2002), and the Doctoral course in Educational and Child Psychology fully equips EPs to carry out robust and evidence-based social research projects due to its focus on research design, methods and underlying ontological and epistemological perspectives. EPs can therefore support schools in designing and carrying out research projects to evoke positive organisational change. Furthermore, this support can serve as capacity-building for schools to carry out similar projects independently in the future using similar processes where EP support is not available.

Of course, the current project also demonstrates the valuable role that EPs can play in directly influencing positive changes to practice through the training of staff. In the current project, I was able to use my knowledge of cognitive development and the psychological concepts underlying learning to train TAs to support pupil learning more effectively. Although this research has been focused specifically on the 'Medi8' intervention as a tool to teach mediation, this is merely one example of how mediational approaches can be introduced to staff, and the implications of this research relate not only to 'Medi8', but also more widely to the use of mediation in schools. Through the approach used in the current research and the actions agreed for Phase 2 of the CAR,

the TAs and teachers were able to utilise the mediational techniques they had learned to not only support the cognitive functioning of the target pupils, but also other pupils in the school, meaning the intervention was able to have the widest possible impact on the school and its pupils. The current project and its associated processes aligns with suggestions from Sharples, Webster and Blatchford (2015) that TAs must work in "structured settings with high-quality support and training" and have access to brief and regular training sessions delivered by "experienced trainers" over sustained periods of time (supported by sufficient timetabling: p.4).

Lehane (2015) states that while EPs are well-placed to work with schools at an organisational improvement level, training alone is not sufficient to instigate lasting and effective organisational change, and emphasises the need for processes that support staff SE levels alongside the acquisition of new skills. Higgins and Gulliford (2014) also states that "EPs are well placed within local authorities to help develop practices that would enhance SE" such as "consultative training" approaches (p.134), and the current project offers an approach and an intervention that can be delivered by EPs that attempts (and indeed appears to succeed to an extent), to address precisely that. Higgins and Gulliford (2014) are also very clear in stating that "EPs should consider reviewing their current training approaches and ensure that they are not only improving staff's knowledge of a topic but also their SE" (p.134).

In terms of school staff, the above clearly has implications for school leaders and managers in terms of investment in training TAs and the approach that is taken to deliver this training. Furthermore, the findings suggest the need for school leaders to

think beyond simply training TAs, but also promoting the development of staff SE levels within their organisation in order to support real and enduring practice change. Moreover, school leaders and EPs should consider and promote the importance of cognitive functions in the learning process, and encourage teachers to involve these in their lesson planning (Haywood and Lidz, 2007).

There are also clear implications for class teachers, who have the responsibility for deploying and monitoring TAs (DfE/DoH, 2014), as any practice changes that TAs intend to make need to be supported by the teachers who are responsible for their deployment. Additionally, the suggestion made by teachers that they themselves would have liked to learn about the mediational approaches with a view to including these in their lesson planning is an extremely pertinent one, as it seems clear that to effectively deploy and support TAs to deliver mediation in their classrooms for the benefit of target pupils, teachers require an in-depth knowledge of the associated concepts themselves. Moreover, a clear implication of the findings of this RE is that both teachers and TAs need to prioritise finding time to meet to discuss the progress of pupils and the appropriate mediational approaches that will be employed to address their learning needs.

Furthermore, a positive effect of teachers learning to mediate is that they could then utilise these approaches and focus on improving cognitive functioning in their own interaction with pupils. Lehane (2015) found that TAs reported that teachers demonstrated limited skills when differentiating for pupils with SEND, and that "teachers do not always meet their expected standard of inclusive practice" (p.12).

Mediational approaches promote many aspects of high-quality classroom discourse, including questioning that promotes higher-order thinking, reasoning and inference, providing opportunities for problem-solving, discussing and elaborating on ideas, emphasising the relevance of learning to pupils' own lives, linking to prior understanding and encouraging pupils to identify and share their thoughts (Rix et al., 2009), and allows for in-the-moment differentiation for all pupils, including those with SEND.

Finally, there are clear implications for TAs in terms of their practice and interactions with pupils. Whether delivered on an individual or group level, mediational techniques have the potential to enhance and develop TA practice in a way that aligns with the guidelines created by Sharples, Webster and Blatchford (2015), and following a suitable level of training and support, TAs should be able to embed such practices in their daily classroom encounters with pupils, ensuring that tasks are differentiated to be within the pupils' ZPD and are therefore promoting true learning.

6.6. Implications for future research

In addition to the suggestions made in Table 45, Table 46 and Table 47 regarding adaptations for future versions of this intervention, the current research also has implications for the direction of future research projects regarding TA practice and the utility of mediational approaches in the classroom. Firstly, further versions of the current project, where interventions drawing on mediational approaches such as 'Medi8' and follow-up coaching sessions are implemented, would be helpful to further

refine the current programme theory and build a better picture of the Cs and Ms required to trigger positive Os.

Furthermore, an exploration of the use of 'Medi8' or similar interventions with groups of pupils as the target (as opposed to individuals) would be valuable as this approach fits more closely with the typical way in which TAs tend to work in the classroom, and would ensure that the largest number of pupils benefit from the mediational approaches being used. Moreover, exploring the use of a similar approach to train teachers to use mediation would be of even greater benefit to teaching and learning in classrooms, as not only can teachers implement mediational techniques in their lesson planning as a means of differentiation, as is the plan for Phase 2 of the CAR, they themselves can utilise such approaches in their teaching and learning interactions with all pupils in their classrooms to ensure that all pupils are equipped with the skills necessary to engage in independent learning.

6.7. Conclusion

The current research demonstrates the positive role that CAR can play in facilitating positive working relationships, changes to pedagogical practices and wider organisational change, all of which contribute to improved outcomes for pupils. Furthermore, the current research demonstrates the importance of following up initial pedagogical training with further support to embed newly-acquired skills and achieve a level of fluency in using these in practice (Haring and Eaton, 1978), as well as encouraging ongoing reflective practice which is central to effective teaching and

learning (Sellars, 2012). Finally, the current research highlights the importance of training teaching staff in the centrality of pupil cognitive functioning in the learning process, and the necessity to explicitly mediate these cognitive functions to support independent problem-solving and create independent learners in our classrooms.

Although the outcomes of the current research suggest that the use of mediational approaches by TAs can lead to positive changes in TA practice and SE and improved outcomes for pupils with regards to their cognitive functioning, it is important to note that the practice of mediation should by no means be considered unique to support staff. Mediational interactions equate to good quality teaching and learning interactions, as highlighted by Haywood and Lidz (2007), who describe mediation as serving to "identify obstacles to more effective learning and performance, to find ways to overcome those obstacles, and to assess the effects of the removal of obstacles on subsequent learning and performance effectiveness" (p.3).

Although the current research does not explicitly address working with pupils with SEND, there are clear benefits of using mediation with these pupils. This is a fundamental matter, as the DfE states that the number of pupils with SEND will increase by around 20,000 between 2017 and 2026 (DfE 2017b), and the number of special schools in England is reducing (DfE 2017c), pointing to an inevitability that staff in mainstream schools will be expected to develop more inclusive practices to incorporate these pupils in their settings. In the current socio-economic climate, it becomes even more important that all teaching staff are adequately trained to support pupils with a diverse range of learning needs and are equipped with effective,

evidence-based techniques to use in their learning encounters with these pupils. Mediation provides opportunities for exactly this, and if staff can become well-versed in mediational practices, these will not need to be planned in advance of the learning task but will be able to be used in the moment to support pupils' cognitive functioning (Radford et al., 2015). It therefore it seems clear that mediation should be considered as a pedagogical approach by all professionals involved in educating children and young people.

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