Reciprocal Teaching: An Exploration of its Effectiveness in Improving the Vocabulary and Reading Comprehension of Key Stage Two Pupils with and without English as an Additional Language

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Abstract

Background: The English National Curriculum identifies the acquisition of vocabulary as key to learning (DfE, 2015). Rich contexts provided by text produce robust vocabulary learning (National Reading Panel, 2000). Considering this, as well as evidence that teaching metacognition and reading comprehension are low cost and high impact approaches (Higgins, Katsipataki, Kokotsaki, Coleman, Major, & Coe, 2014), a Reciprocal Teaching intervention (Palincsar & Brown, 1984) was selected for a group of children with known vocabulary and reading comprehension difficulties. A systematic literature search indicated that little research has focused on the effectiveness of Reciprocal Teaching on vocabulary development. The current study aimed to address this gap and to explore the impact of Reciprocal Teaching on the vocabulary development and reading comprehension of monolingual pupils and children with English as an Additional Language (EAL) in the context of the English education system.

Method: A purposive sample of 22 participants (aged 8-11) from two mainstream primary schools were selected by teachers according to vocabulary and reading comprehension needs. Nine pupils were monolingual and 13 spoke English as an additional language. All took part in a Reciprocal Teaching intervention, based on approaches devised by Palincsar and Brown. A convergent mixed methods design was employed; whereby quantitative data were collected pre- and post-intervention to measure vocabulary and reading comprehension. Qualitative measures were conducted post-intervention to gain participants' perspectives.

Results: Educationally significant gains were observed in vocabulary for participants who received the greatest number of Reciprocal Teaching sessions and for monolingual children overall. No improvement was observed for reading comprehension. Thematic analysis produced themes related to child engagement and Reciprocal Teaching implementation.

Implications: This study contributes to the developing evidence-base regarding the effectiveness of Reciprocal Teaching in England. Implications for Educational Psychologists in facilitating implementation of interventions in schools are discussed.

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

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Chapter 1. Introduction

The current study explored the effectiveness of a reading comprehension intervention in supporting the vocabulary development and reading comprehension of monolingual pupils and children with English as an Additional Language (EAL). This chapter outlines the timely nature and value of this study as well as the influence of the researcher's experience and philosophical perspective. The current research is also positioned within the field of Educational Psychology and the wider national context.

1.1 The importance of vocabulary

Vocabulary has a considerable impact on children's outcomes with regard to school achievement, well-being and life prospects (Feinstein & Duckworth, 2006; Roulstone, Law, Rush, Clegg, & Peters, 2011). Vocabulary learning is a lifelong process (Bintz, 2011), therefore it is important that children are equipped with the skills to continue to engage in this learning independently after completing compulsory education.

Diversity in background and experience leads to some children beginning their formal education in a more advantageous position than others. In England, a substantial vocabulary gap exists between children from the wealthiest and poorest families at school-starting age and this gap only widens over time (Beals, 1997). Schools have a key role in addressing such inequality. Figures are also steadily rising for children speaking an additional language to English. School Census data (DfE, 2016) estimate that in English primary schools, 20.1% of pupils are exposed to a language other than English in their home and wider community. In London, this figure is higher, with percentages reaching up to 53% overall (Demie, 2013).

Teachers in England, therefore, are responsible for teaching pupils from diverse backgrounds with varying proficiency in different languages. Practitioners in classrooms require the appropriate tools and strategies to meet the complexity of students' needs, hence an intervention or approach that caters for these needs would be beneficial.

1.2 Reading comprehension and vocabulary

There is a substantial evidence base regarding the reciprocal relationship between vocabulary development and reading (Stahl & Fairbanks, 1986). However, incidental vocabulary learning through reading is a slow process and varies greatly between children (Swanborn & de Glopper, 1999). Furthermore, to achieve vocabulary gains through reading, children are required to read texts of greater complexity to encounter novel and challenging words. Students with low vocabulary are less likely to access complex texts and therefore will not be exposed to higher-level words (Beck, McKeown, & Kucan, 2013). This then contributes to existing inequalities in vocabulary knowledge between pupils.

Level of vocabulary knowledge has a significant impact on reading comprehension (Kieffer, 2008). It is estimated that one in ten children in England experience difficulties with reading comprehension and consequently underperform in school (Nation & Snowling, 1997). Oakhill, Cain and Elbro (2014) explain that 'poor comprehenders' (those that have 'good' word reading but 'poor' language comprehension) are often not identified until Key Stage Two as fluent word reading masks underlying difficulties with retrieving meaning from text. When moving through Key Stage Two such pupils present a 'dip' in their reading 'ability' and are potentially:

"…in danger of falling through the net and arriving at secondary school unable to read well enough." (Ofsted, 2014; p. 37).

For the reasons outlined above, poor comprehenders in Key Stage Two with English as their first or additional language were focused on in this study.

1.3 Researcher's experience

The researcher's interest in vocabulary development and reading comprehension stems from experience of working with children from diverse backgrounds in a range of settings. Before beginning the professional doctorate in Educational Psychology, the researcher taught for nine years as a qualified primary teacher in affluent and inner city schools within multi-ethnic and socially deprived areas. It was noted that reduced levels of vocabulary influenced curriculum delivery and subsequent learning, particularly in areas of deprivation.

When involved in pupil progress meetings as Literacy and Key Stage One Leader, the researcher observed a repeating pattern in pupil data and teachers' commentary. A proportion of students assessed as being fluent readers at the end of Key Stage One demonstrated a deceleration or plateauing of reading progress during Key Stage Two. Such pupils appeared to possess the necessary decoding and sight word reading skills but were not accessing the meaning of texts. Such difficulties were encountered again with a group of children in the researcher's role as Trainee Educational Psychologist. Following observations and assessment, significant delay in vocabulary and language comprehension was highlighted as an area of concern. Leading on from the success of a pilot study with these pupils, the opportunity to engage in research with children exhibiting similar needs was actively sought.

1.4 Reflexivity and epistemological stance

It is a researcher's responsibility to contemplate the influence of their experiences and philosophical positioning on the undertaking and interpretation of research. This is described as reflexivity and involves more than simple reflection (Shaw, 2010). Transparency is integral to this principle, therefore discussions of context and rationale for approach are explained. Researcher involvement is also commented upon where appropriate.

With regard to epistemology, a critical realist stance was taken within the current study in that there is an existing world outside of our understanding and interpretations of it (Robson, 2011). Bhaskar (2010) distinguishes between knowing (epistemology) and being (ontology) and posits that all events are a result of many interacting causal factors (Bhaskar, 2013). Patterns and events that are experienced in the social world are used to provide insight into these factors and it is acknowledged that such insight stems from a particular perspective and is framed within an historical context (Archer et al., 2016). Data are not perceived as representing reality and interpretation is required to explore the possible causal factors involved (Willig, 2012).

1.5 National context

As this study is conducted within the applied field of Educational Psychology, it is necessary to consider the positioning of Educational Psychologists within the

current context in England, as well as the interaction between participants and their environment. Recent political changes have shaped society and education and therefore contribute to the wider picture in which this study occurs.

1.6 Socio-political context

1.6.1 Austerity measures

During recent years, the United Kingdom (UK) has undergone much political and educational change. Following the formation of a coalition government in 2010, large-scale cuts were announced to reduce the UK's budget deficit. According to the National Audit Office (NAO), a 60% reduction in Department for Education (DfE) spending was required by 2014-15 and some of the additional funding (e.g. Pupil Premium) provided to schools was cancelled out by existing cuts (NAO, 2015). In line with current austerity measures under Conservative leadership, mainstream schools are required to save a total of £3 billion by 2019-2020. Schools are reportedly cutting costs by replacing more experienced teachers with cheaper, younger recruits and relying more on unqualified staff (NAO, 2017). Relevant to the current study, Local Authority funding cuts have resulted in a significant reduction in the number of Ethnic Minority Achievement (EMA) or English as an Additional Language (EAL) consultants and advisory teachers. Furthermore, although EAL is included within the current school funding formula, this is limited to the first three years of a bilingual pupil's statutory education, rather than level of proficiency in English (Cline, Lauchlan & Resing, 2014).

1.6.2 Government investment

To reduce attainment gaps for disadvantaged pupils, Pupil Premium funding for schools was introduced in 2011 and £136 million was invested through the Education Endowment Foundation (EEF) (DfE, 2015). A teaching and learning toolkit was produced by the EEF to promote effective practice, whereby initiatives are evaluated according to cost, evidence and number of months' impact. This platform for disseminating evidence-based practice remains active.

1.6.3 Educational settings

From 2010, the coalition government championed the opening of free schools (non-profit-making, independent, state-funded schools) and academies (publicly funded independent schools) with the aim of achieving greater autonomy within

the school system and to drive social justice (Morgan, 2015). This agenda was facilitated by the Academies Act (2010), which enabled most mainstream and special schools to become academies. Gorard (2014) argues that establishing different schools of varying quality in different areas does not address poverty and suggests that the money supporting this scheme could have been used more effectively to improve existing schools. Concerns have also been raised regarding admission procedures and selection of pupils. When comparing 'coalition academies' with those created under the Labour government, Machin and Vernoit (2010) found that a much smaller percentage of the student population in coalition academies were eligible for free school meals. Findings are inconclusive regarding the impact of school reforms on reducing inequality, however it is possible that changes have reinforced social divides (Wilkins, 2015).

1.7 Educational Psychologists

Educational Psychologists (EPs) must consider the national and community context as part of their work (Fallon et al., 2010). With schools having budgetary control, Hardy and Allen (2013) stress the importance of balancing the trading of psychology as a commodity, while at the same time giving psychology away (Miller, 1969). Furthermore, to meet clients' needs effectively in this climate, there is a requirement for EPs to be 'doing more with less' (Kennedy, Cameron, & Monson, 2009, p. 604).

1.7.1 The EP role

Over the years, the role of the EP has been widely debated, which is partly due to the varying models of EP service delivery in existence within the UK and other countries (Boyle & Lauchlan, 2009). Differences between expectations and the perspective of EPs and stakeholders also contribute to this confusion. Responses to questionnaires in Ashton and Roberts' research (2006) indicated that Special Educational Needs Coordinators (SENCos) valued the 'traditional' aspect of the EP role (statutory and individual assessment), whereas EPs emphasised the importance of their contribution through a wider range of activities. Those listed include: relationship between EP and school, eliciting children and young people's views, systemic approaches and consultation. In most Educational Psychology Services in England, consultation is considered to be a key part of the EP role (Fox, 2009) and involves:

> "*a voluntary, collaborative, non-supervisory approach, established to aid the functioning of a system and its inter-related systems.*"
> (Wagner, 2000, p. 11)

Although current UK government policy, such as the Special Educational Needs Code of Practice (DfE & DoH, 2015), highlights the statutory component of the EP role, recent publications, such as the recent review of Educational and Clinical Psychology training (National College for Teaching and Leadership & Health Education England, 2016), reference additional areas, including work related to social and emotional difficulties and organisational and systemic work (DfE, 2016). The Health and Care Professions Council standards (HCPC, 2015) and British Psychological Society guidelines (BPS, 2008) also identify obtaining and reporting the voice of the child as paramount. Where possible, this includes evaluation of interventions carried out.

1.7.2 Evidence-based practice

Dunsmuir and Kratochwill (2013, p. 66) view the EP as an 'agent of change' regarding translation and dissemination of evidence-based practice to practitioners. However, transferring theory and research from a particular context to the unique and complex situations encountered by EPs can be problematic (Kennedy & Monsen, 2016). Forman et al. (2013) recommend four aspects to guide the planning and implementation of evidence-based interventions in schools: potential barriers, intervention fidelity (delivery as intended), diversity of participants and the systems and structures embedded within the setting. These aspects were considered when planning the current research and are documented in the method section. An additional consideration involves the curriculum delivered within a school and whether an intervention complements existing practice.

1.8 English National Curriculum

A new National Curriculum was launched in September 2014 (DfE, 2014), which identifies the acquisition of vocabulary as a key aim (DfE, 2015). However, little guidance is provided regarding vocabulary instruction. Further to this, statutory tests introduced in year one and year six (2012 to 2013) increased the focus on phonics and spelling, punctuation and grammar (SPaG). Enforcing statutory

measures impels schools to invest time and resources in the relevant subject matter, perhaps at the cost of other aspects of learning. Indeed, the statutory vocabulary appendix within the National Curriculum emphasises morphology (the structure and parts of words), which has implications for the nature of vocabulary instruction in schools.

1.9 Aims of this study

The current study aims to explore the success of an intervention that complements the National Curriculum and can be adapted to different school contexts. It is designed to be delivered by teaching assistants or teachers with existing resources, which is relevant in the current climate of funding cuts. Planning, implementation and delivery of this intervention adheres to existing procedures associated with the EP's role in recommending and supporting schools' use of evidence-based practice.

Chapter 2. Literature review and rationale

In this chapter, the impact of home and school factors on the vocabulary development and reading comprehension skills for pupils with and without English as an Additional Language (EAL) is considered.

This chapter consists of three sections. The first section defines vocabulary, vocabulary development and EAL then explores these concepts with regard to theoretical models and evidence base. Factors that influence vocabulary growth are considered, with a particular focus on those relevant to the current research. Vocabulary instruction in English schools is also discussed with regard to National Curriculum Programmes of Study, along with research regarding effective vocabulary teaching strategies.

In the second section, reading comprehension is defined and research pertaining to the reciprocity between vocabulary and reading comprehension is discussed.

Finally, the rationale for selecting the current reading comprehension intervention is provided, along with an exploration of relevant extant research. Research questions are presented at the end of this chapter.

2.1 Definitions

The terms English as an Additional Language, vocabulary and vocabulary development will be defined in the following section. Reading comprehension is defined within the latter part of this chapter.

2.1.1 Defining English as an Additional Language

As participants may be fluent in other languages or dialects, the term English as an Additional Language (EAL) will be used in the current study, rather than English as a Second Language (ESL or E2L). The English Department for Education (DfE, 2016) defines EAL learners as children who have been exposed to a language other than English during early childhood and continue to be exposed to this language in the home or in the community. This definition includes children or young people (CYP) who recently moved to the UK; CYP from other countries, who may have been educated in an English or bilingual school abroad and, of particular relevance to this study, CYP who were born in the UK and were brought up speaking and understanding another language at

home or in the community.

2.1.2 Defining vocabulary

In the current study, vocabulary is conceptualised according to Oakhill, Cain and Elbro's definition (2014, p.58):

> *"Broadly speaking, a person's vocabulary is the total number words that the person knows and how much he or she knows about them."*

This definition captures both vocabulary breadth (number of words known) and depth. Vocabulary depth is defined as relating to semantics (the meaning of words and connections between words) morphological awareness (identifying, understanding and using significant word parts such as prefixes, suffixes, plural forms and root words) and grammatical (syntactic) awareness (understanding how language is structured) (Proctor, Silverman, Harring, & Montecillo, 2012).

Nagy and Scott (2000) identify five aspects that illustrate the complexity of vocabulary: incrementality (the extent to which a word is known), multidimensionality (words are multifaceted and take different forms), polysemy (words have many meanings), interrelatedness (links with other words) and heterogeneity (different function of words leads to differences in knowledge). A further layer of complexity regards the use of words for different purposes in different contexts. Pikulski and Templeton (2004) promote the use of 'vocabularies' rather than 'vocabulary' as the use of words to communicate varies according to purpose. For example, when writing, more sophisticated and formal vocabulary is used in comparison to the content of speech during social interaction (represented in Figure 1).

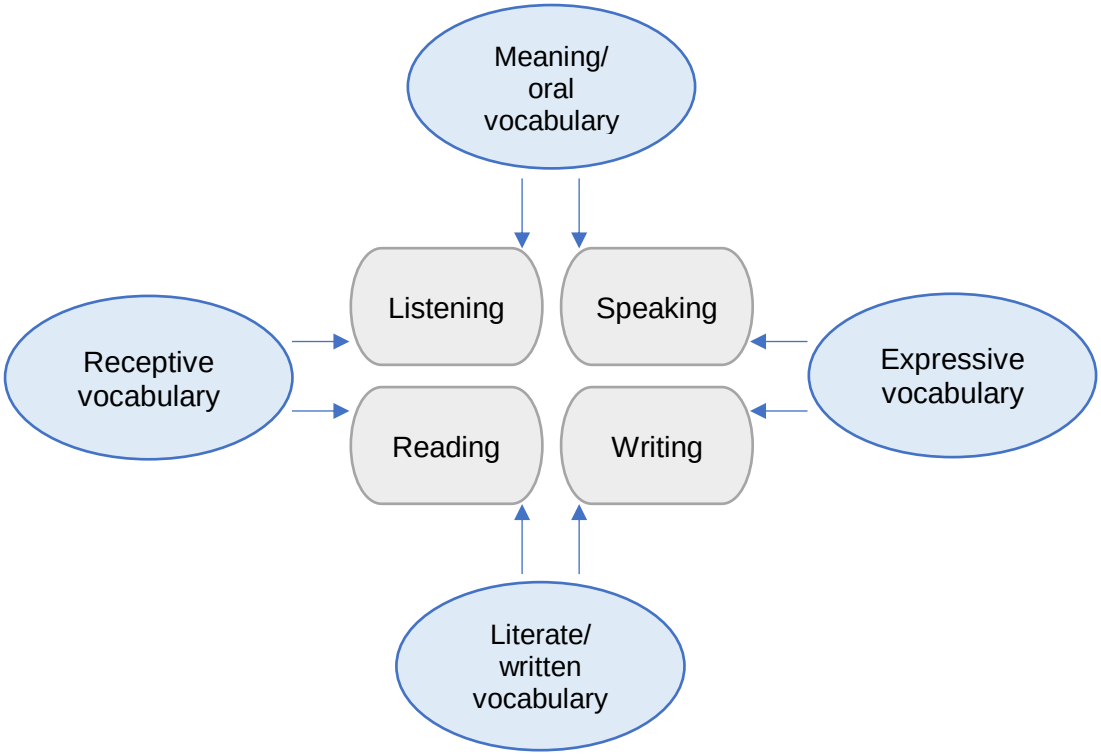

Figure 1. Representation of vocabularies used in different contexts (adapted from Pikulski &Templeton, 2004)

2.1.3 Defining vocabulary development

Vocabulary development involves not only the acquisition of new words and their meanings but also the building and strengthening of connections between new and existing words (Beck et al., 2002). Vocabulary is described as an unconstrained skill (Paris, 2005), meaning that it continues to develop throughout an individual's lifetime. The term 'vocabulary development', therefore, will be used throughout the current study.

The current study explores the vocabulary development of monolingual children and pupils with EAL, therefore it is helpful to consider vocabulary development of English as a first language to enable comparison of the pace and nature of acquisition of new words. Exploration of vocabulary development for monolingual and multilingual speakers follows.

2.2 Vocabulary development: monolingual speakers

A brief discussion of monolingual theoretical frameworks follows but it is beyond the scope of this research to conduct an extended evaluation of these models.

It is widely recognised that during their early years, children incidentally acquire

vocabulary from their surrounding environment and through varied interaction with others (Brabham & Villaume, 2002). This process is far from simple, however, and explanations of individual differences in vocabulary are lacking with regard to younger children (van Druten-Frietman, Denessen, Gijsel, & Verhoeven, 2015).

Biemiller and Slonim (2001) proposed that English vocabulary development occurs according to a relatively fixed sequence of root words. Order of words is purportedly the same for both monolingual and EAL learners, although occurs at a different rate (Biemiller, 2012). Biemiller and Slonim carried out three studies involving root words taken from the Living Word Vocabulary (Dale & O'Rourke, 1981, as cited in Biemiller & Slonim, 2001). However, limitations regarding the Living Word Vocabulary and procedures within the three studies influences the weight of these conclusions. Participants in Dale and O'Rourke's sample were assessed as 'knowing' a word based on their responses to multiple choice questions, which do not capture the complexity of word knowledge and it is possible that answers were selected through best guesses. In addition, data collection began over 60 years ago in America, hence the words that make up the Living Word Vocabulary are time-bound and culturally biased. Application of this collection of words, therefore, has limited relevance to the diverse populations taught in London schools.

The complexity around what is meant by knowing a word continues to be discussed and Dale (1965) suggested that there are four stages of knowing a word:

Stage 1: Never seen the word before.
Stage 2: I know there is such a word but I don't know what it means.
Stage 3: Vague contextual placing of the word.
Stage 4: I know the word well and will remember and recognise it again.
(Dale, 1965, p. 898)

Based on their years of research, Beck, McKeown and Omanson (1987) build upon Dale's (1965) stages and propose a continuum of word knowledge, which ranges from no knowledge to rich, decontextualised knowledge of a word's meaning and its connections with other words (Beck, McKeown, & Kucan, 2013).

Regarding word knowledge and connections with other words, Stahl (1986) differentiates between three different levels of processing: association processing (a word is learned within one context or linked with one synonym), comprehension processing (the child aims to understand the word by considering additional information, such as antonyms) and generation processing (the pupil generates their own definition of the word and relates it to their own experiences). 'Deep' processing occurs when greater mental effort is exerted in forming and strengthening connections between prior and new information. In addition to multiple exposures to words, Manyak et al. (2014) emphasise the need to provide opportunities for children to review their knowledge and understanding of words in order for deep processing to occur.

Related to depth of word knowledge, Perfetti (2007) proposed the Lexical Quality Hypothesis, which refers to how thoroughly and accurately words are represented in a person's mental dictionary (lexicon) with regard to morphology, syntax and semantics. Quality representation occurs through experience with words and the strengthening of the links between and within the different word representations. Supporting evidence is provided by studies with college students of varying reading comprehension skill involving the pace of word meaning decisions (Perfetti & Hart, 2001). It is suggested that faster retrieval indicates a more complete and robust representation of a word's meaning.

2.3 Vocabulary development: English as an Additional Language

Cummins (1980) distinguishes between Cognitive Academic Language Proficiency (CALP) and Basic Interpersonal Communicative Skills (BICS). CALP involves the interaction between language proficiency and cognitive and memory skills and BICS refers to sociolinguistic ability. It is suggested that CALP is a key factor in academic success and that the relationship between CALP in an individual's first (L1) and second language (L2) is interdependent. However, these processes do not occur in an 'affective or experiential vacuum' (Cummins, 1980, p. 179), therefore performance in L2 may not reflect skills demonstrated in L1. Cummins asserts that L2 skills develop at a faster rate in older learners as their CALP in L1 is more established, which acts as a map for L2 CALP development. Data from an inner-London local authority support this (Strand & Demie, 2005; Demie & Strand, 2006) as trends indicated that EAL pupils with

developing fluency in English performed significantly below monolingual speakers in lower Key Stage Two (KS2) assessments but those with full fluency in English scored significantly higher in KS2 and General Certificate in Education (GCSE) tests.

Cummins' model is pertinent and applicable to diverse school populations. It highlights the possibility that fluency in BICS may mask underlying CALP needs, which is helpful in a large class environment as this may otherwise go unnoticed. Thomas and Collier's (1997) findings support this and also indicate that teachers withdraw support from multilingual pupils too soon due to overestimating their level of skills.

Hoff et al. (2012) discuss the effect of learning two languages on vocabulary development. The authors report that research carried out on bilingualism has produced conflicting evidence in terms of vocabulary development rate in first and second language. In their study, the grammar and vocabulary development of 47 bilingual children (exposed to Spanish and English since birth) and 56 monolingual pupils were compared at three points over a period of 9 months (participants' ages ranged from one year and ten months to two years and six months during this time). The socioeconomic status of all participants was equal to ensure that results were not affected by this variable. Results showed that improvements in grammar and vocabulary were achieved at a faster rate for monolingual participants than bilingual participants. In addition, for bilingual children, rate of language development depended on exposure to both languages at home. Lexical knowledge developed at the same rate as monolingual participants, however this was divided between two languages, resulting in the lower pace observed.

In a longitudinal study in London, Demie and Hau (2013) demonstrated that it took an average of five to seven years for pupils with EAL to reach full fluency in English. 940 participants were categorised according to ethnic background and assessed using an English proficiency scale from the Centre for Literacy in Primary Education (CLPE) whilst in years 6 to 11. Significant differences were found according to languages spoken. Children speaking Turkish, Lingala, Spanish, Bengali and Portuguese required six to eight years to become fully fluent, whereas an average of five to seven years was observed for French,

Yoruba, Somali, Akan and Polish speakers. Researchers concluded that children from West and East Africa reached fluency earlier due to overlap in linguistic forms as a result of the historical links between the African Commonwealth and the British Empire.

Following their case study research, Demie and Mclean (2015) emphasise the use of school data to provide targeted interventions to close attainment gaps and to closely monitor pupil progress. Findings from these studies in inner London demonstrate the importance of ascertaining pupils' levels of fluency so that their needs are accurately identified and addressed. As of September 2016, language fluency (Proficiency in English) became part of School Census data collection. It is now statutory for schools to assess every EAL child against a new census code set, according to five stages of proficiency (see Appendix A). The addition to school census data began after the present study so this information is not available for current participants.

Presently, in partnership with the National Association for Language Development in the Curriculum (NALDIC) and the Education Endowment Foundation (EEF), the Bell Foundation is conducting a five-year project (2014-2019) related to the language development, social integration and educational achievement of children with English as an Additional Language (EAL) in England. Findings from an initial pilot phase indicate that appropriate and sufficient pupil achievement data (English proficiency level, length of stay in UK school, national origin, economic and social disadvantage and prior academic achievement) are lacking across the country (Schneider, Davies-Tutt, Arnot, Evans, Liu, & Welply, 2015). Key recommendations resulting from this initial phase include the assessment of English proficiency and CALP to investigate and address disadvantaged children with EAL at school level. However, low CALP is not solely responsible for underachievement (Cummins, 2016) and EAL learners are not a homogeneous group (Rosamund, Bhatti, Sharieff, & Wilson, 2003), therefore additional influential factors should be considered when working with this population.

2.4 Vocabulary development: influential factors

In addition to language skills, review of the research identified a number of individual differences that influence vocabulary development, such as memory (Ebert et al., 2013), Literacy Engagement (Guthrie, 2004) and motivation (Florio, 2016). These factors are integral, however are not the focus of the current research. Aspects of particular relevance to this study, such as the influence of the home environment and background, are prioritised.

Socioeconomic status

Socioeconomic status (SES) refers to a set of properties that relate to an individual, household or neighbourhood. It is a complex concept but generally involves economic factors, social status and power (Hackman & Farah, 2009).

Hart and Risley (1995) revealed the extent of the impact that SES has on children's vocabulary development. Researchers observed 42 families (ranging from upper, middle and lower SES to those on welfare) for an hour each month over a period of 2.5 years. The aim was to record as much as possible in the home environment to establish any factors contributing to vocabulary growth. Involvement began when children were aged 7-9 months and ceased when participants were three years old. Parent pre-test vocabulary scores indicated substantial variation between SES groups and a moderate correlation (r=0.57) was found between parents' performance and number of years in education. Transcribed recordings illustrated children's similarities to their parents regarding vocabulary size, number of words spoken per hour and range of words used. By the age of 3 years, children from upper SES families possessed a larger mean vocabulary size (1116) than parents on welfare (974). Speed of vocabulary growth was slower in children of lower SES, meaning that by school age, the gap in vocabulary remained between children from these groups.

A follow-up study with 29 of the 42 families demonstrated that these gaps at the age of three were strongly correlated with receptive vocabulary (understanding of words) and language skill (listening, speaking, semantics and syntax) at age 9-10 years (Hart & Risley, 2003). This was also found with reading comprehension scores. Although this research was conducted in North America and mean scores from 42 families is not representative of the experience of all families, these

findings indicate the importance of a child's experiences and exposure to language within their first three years.

Hoff's (2003) study provides insight into the impact of parental education on the language children are exposed to. Language patterns within a total of 63 high-SES and mid-SES families were investigated. Recordings of conversations between mother and child were made in the home environment at times of changing, eating and playing. It was discovered that children of high-SES families were exposed to longer strings of speech containing richer vocabulary. Researchers hypothesised that this was responsible for greater growth in productive vocabulary within this group and that content of maternal speech was related to level of their own education. Although based on one recording and a smaller range of SES than Hart and Risley's (1995) study, results serve as an indication of the role that parental speech has on the vocabulary development of their children.

Weizman and Snow (2001) support this with their study involving 53 English-speaking, low-income mothers' interactions with their children. Despite the presence of potentially confounding factors (single parent families, cultural differences, level of education and income versus welfare), explaining higher-level words during conversation with their children accounted for one third of the differences in vocabulary performance during Kindergarten and second grade (children aged 7-8 in the American schooling system). Maternal speech included the largest number of words and most sophisticated language when reading a book with their child in comparison to play and meal times. Reading books with children at home, therefore, may introduce new vocabulary that is not part of a parent's lexicon. Consideration of research regarding further literacy-based activities in the home environment follows.

Home Literacy Environment

In a longitudinal study, Schmitt, Simpson and Friend (2011) investigated the impact of the Home Literacy Environment (HLE) on 50 infants aged 16 to 21 months. Two studies were carried out. In addition to a range of questionnaires and checklists, parents and their children were invited to engage in usual play and reading activities in a playroom set up in a clinic. Researchers observed and

recorded interaction for 20 minutes behind a one-way mirror. Parents completed checklists to indicate receptive and expressive vocabulary skills possessed by their children and also facilitated a researcher-assisted test with their child at the clinic. Observations were used to corroborate self-report measures; however, these activities were conducted in a clinic and parents were aware of being recorded so content of sessions may not be representative of the usual home environment. Findings from this research indicated that it was the interaction generated by the activities rather than the tasks themselves that resulted in receptive and expressive vocabulary growth. Joint attention and general engagement within different contexts were identified as key factors.

With older participants, Echols, West, Stanovich and Zehr (1996) demonstrated that engagement in reading activities contributed to the vocabulary growth of 157 students (aged 9-12 years), who were monitored over a two-year period. However, in this study, researchers acknowledge the difficulty in measuring exposure to reading material and utilised a test based on knowledge of book titles, rather than amount of time spent reading or number of words read. Test measures with greater validity were employed in Cain and Oakhill's (2011) study. Parental questionnaires and child interviews were conducted to explore the influence of reading regularity, library attendance and leisure time on the vocabulary development of 102 children in England. Standardised tests were also conducted when participants were aged 8, 11, 14 and 16 years. Results from this research provide evidence that reading activities during leisure time support vocabulary learning.

Having explored vocabulary development and considered relevant influences within the Microsystem (socioeconomic status and Home Literacy Environment), it is evident that EAL learners begin school with varying levels of language proficiency and vocabulary, which has implications for teachers in addressing such differences. In the following section, vocabulary instruction in English schools is discussed with regard to National Curriculum Programmes of Study, along with research pertaining to effective vocabulary teaching strategies.

2.5 Vocabulary instruction: schools in England

In England, there is no national consensus regarding vocabulary teaching for

children with EAL, rather that such pupils are immersed in mainstream education (Ofsted, 2014). Research into approaches focusing on English language development for EAL pupils in the UK is minimal (Murphy, 2015), which is concerning as pupils with EAL generally possess less vocabulary knowledge than monolingual peers due to less exposure to English during their childhood (Murphy, 2014).

With regard to mainstream education, approaches within the English National Curriculum support some elements of vocabulary development. For example, latter stages of phonic programmes such as Letters and Sounds (DfE, 2007) enable pupils to gradually increase their knowledge of the phonology and morphology of words (e.g. Phase Six explores aspects such as root words, prefixes and suffixes). The introduction of Spelling, Punctuation and Grammar (SPaG) also addresses the syntax component. Acquiring a wide vocabulary is emphasised, however little advice regarding instruction or fostering enthusiasm for word meanings is provided. Furthermore, National Curriculum statutory vocabulary appendices are heavily focused on grammatical terminology. By the end of Key Stage Two, pupils are expected to understand and use academic terms such as ‘determiner’, ‘fronted adverbials’, ‘modal verb’ and ‘relative clause’ (DfE, 2013), rather than the emphasis on developing a students’ lexicon.

Academic language is more abstract and conveys greater density of complex information per word than social language (Nagy & Townsend, 2012). Use of academic terminology imposes greater demand on learners and has implications for children with EAL, whose Cognitive Academic Language Proficiency (CALP) develops slower than Basic Interpersonal Communicative Skills (BICS). Nation (2001) highlights the need for teachers to consider the learning burden (amount of effort required) associated with learning new words in another language. If a pupil’s first language is similar to their additional language, this learning burden is lighter. However, if grammatical patterns are dissimilar from a student’s mother tongue, more effort will be required to learn words. As English is a complex language to learn (Graf, 2011), the focus on academic language in English National Curriculum Programmes of Study poses an additional challenge for pupils with EAL and those with vocabulary difficulties.

Research evidence pertaining to effective vocabulary teaching strategies for

monolingual and EAL learners follows.

2.6 Vocabulary instruction: evidence base

Beck, McKeown and Kucan (2008) claim there is limited research regarding effective vocabulary teaching approaches for pupils with English as an additional language and advocate use of techniques that are effective with monolingual children. Barr, Eslami and Joshi (2012) corroborate this and promote both independent and collaborative working opportunities for monolingual and EAL learners when determining the meaning of unknown words. Evidence from research supports this suggestion, along with other key principles pertaining to vocabulary instruction (Wasik & Hindman, 2015), which include:

- Repeated exposure to words;
- Explicit definitions accompanied by a visual or physical prompt;
- Word meanings are connected to children's background knowledge and experience;
- Words should be presented in a meaningful context;
- Increased exposure to new words in a variety of contexts;
- Children to talk about vocabulary using their own words and receive feedback regarding pronunciation and understanding.

Rich, high quality conversation is instrumental in supporting these elements.

Despite research into effective vocabulary instruction, Kieffer and Stahl (2015) claim that instruction quantity and quality is lacking in classrooms. It is hypothesised that this is due to the complexity of vocabulary as a concept and consequent difficulties in understanding, assessing and teaching. Teaching word meanings in schools tends to involve superficial word knowledge and typically consists of dictionary use (Kucan, 2012). Using a dictionary can be useful in initiating exploration of word meanings, however definitions are often vague and broad and lead to children's misuse of words (McKeown, 1993). Within the literature, vocabulary instruction is generally divided into approaches that involve direct teaching of specific words or learning words in the context of reading (Baker, Simmons, & Kameenui, 1995). One of the dominant direct vocabulary instructional approaches is discussed, followed by consideration of vocabulary development through reading comprehension.

Beck, McKeown and Kucan (2013) propose a direct instructional approach involving three tiers of words. The method is described as robust due to the range of strategies employed to explore the meaning of words, rather than simply searching for a definition. Students are exposed to words multiple times and are actively engaged in conversations about them. It is the teacher's responsibility to select words for instruction, based on the three tiered criteria, which can be flexibly applied according to pupils' age and expertise. Tier one words are those that are encountered in conversation daily and require little explanation (e.g. 'break'). Tier two words are described as 'general but sophisticated' (p. 26) as they involve concepts that individuals are familiar with (e.g. 'fortune'). Tier three consists of specialised and low frequency words (e.g. 'epidermis').

This approach was developed through research conducted over a number of years (Beck, McKeown, & Omanson, 1987). An initial study was carried out and was then replicated (Beck, Perfetti, & McKeown, 1982). Three subsequent studies followed, whereby groups of eight to ten words were taught per week through daily activities such as relating words to meanings, creating contexts for words and identifying connections between words. Exposure per word varied from ten to 40 occasions. Detailed accounts of procedures involved in the studies are not provided, therefore it is challenging to evaluate approaches taken within this research. As data were not included in results, the magnitude of differences in vocabulary gains are unclear, however it was evident that high exposure to words (24 to 40 times) did not result in large gains. It was concluded that the amount of time dedicated to repeated exposure of single words (i.e. greater than four occasions) would not be a feasible means of instruction as part of usual teaching practice. Recommendations for teachers following the three studies included dedicated sessions to vocabulary for 20 to 30 minutes per week in addition to introducing tiered word in class. Children would also be encouraged to extend their learning about vocabulary within the home environment. It is not stated how the impact of this approach would be measured or how individual differences in vocabulary knowledge would be addressed.

Ownership and control lies with the teacher in this instructive approach, however, lots of useful and applicable strategies are provided within Beck, McKeown and Kucan's (2013) guidance that could easily be incorporated within teacher practice

and in developing rich word environments. Moreover, in England, a programme based upon this three-tiered vocabulary system, Word Aware (Parsons & Branagan, 2014), is currently implemented in the London borough where the researcher is based as a Trainee EP. Speech and Language Therapists are responsible for training school staff in this whole-school, curriculum-wide approach. Beck, McKeown and Omanson's (1987) three-tiered word approach is used to plan teaching of specific vocabulary as well as promoting vocabulary development opportunities within classrooms. It is one of the few vocabulary instruction approaches in the UK that focuses on Tier 2 words (Brooks, 2015). Literature searches within peer reviewed journals did not produce evidence regarding the impact of this approach in English classrooms, although practice-based evidence is reported by the researcher's colleagues.

Blachowicz, Fisher, Ogle and Watts-Taffe (2006) critique direct instructional approaches, claiming that it is not time or cost effective and that the emphasis should be placed on promoting active processing within vocabulary instruction to foster independent learning. Following their study involving the use of vocabulary exercises with 38 EAL learners, Wesche and Paribakht (1994) develop this point and raise the importance of drawing EAL and monolingual learners' attention to unknown words when reading. It is claimed that reading for meaning is a 'major vehicle' (p. 2) for first and additional language acquisition, especially when coupled with text-based vocabulary activities.

In the following section, reading comprehension is defined and considered as a vehicle for vocabulary development. Of relevance to this study, poor comprehenders' difficulties with reading comprehension and vocabulary development are explored. Evidence base regarding the reciprocal relationship between vocabulary and reading comprehension is also considered.

2.7 Reading comprehension

Defining Reading Comprehension

Reading comprehension is comprised of multiple, interacting factors, therefore a conclusive definition has not been reached (Tennent, 2015). As the current study focuses on the education system in England, the theoretical framework underpinning the National Curriculum will be referred to. The Simple View of

Reading (Hoover & Gough, 1990; Gough & Tunmer, 1986) forms the basis for the Reading Programmes of Study in England and defines reading comprehension as being a product of word reading (phonic knowledge and word recognition without context) and language comprehension (interpretation of words). Although critiqued for oversimplifying reading comprehension (Stuart & Stainthorp, 2016), the Simple View of Reading offers a conceptualisation of the variance in reading ability that children demonstrate. According to this framework, reading comprehension needs can arise as a result of difficulties with word reading, lack of language comprehension or needs in both areas. Of relevance to the current study, 'poor comprehenders' are individuals with 'good' word reading but 'poor' language comprehension.

Poor comprehenders

Clarke, Truelove, Hulme and Snowling (2013) identify difficulties experienced by poor comprehenders, which include comprehension monitoring and low standard of coherence. Standard of coherence relates to the threshold of understanding when reading and an individual's ability to make repairs (such as re-reading a sentence or paragraph) when understanding breaks down (Perfetti, Landi & Oakhill, 2005).

Cain, Oakhill and Lemmon (2004) conducted two studies to explore poor comprehenders' skills in inferring the meaning of new words from text. The first study involved 12 skilled readers and 13 poor comprehenders aged 9-10 years from urban schools within a lower middle-class area of southern England. Two reliable (according to reliability coefficients) measures were employed; a test assessing working memory and a short story task involving text containing pseudowords. Participants were required to read text passages and explain the meaning of pseudowords encountered. An independent assessor awarded points for correct meaning of words and quality of definition given.

Poor comprehenders not only had more difficulty in inferring meaning of novel vocabulary from text than skilled readers but also experienced difficulties in vocabulary development with regard to creating mental representations of new words. With regard to working memory, results indicated that scores were not correlated with performance on the pseudoword task, however, skilled readers

demonstrated greater working memory proficiency than the poor comprehenders. Correlational measures indicate trends but do not explain causation, therefore the impact on particular vocabulary and reading comprehension processes cannot be determined by this measure. The second study employed additional short-term and working memory assessment measures to explore the interaction of working memory on vocabulary learning and reading comprehension.

Thirty-six nine to ten-year-olds participated and were grouped according to skilled comprehenders, poor comprehenders and poor comprehenders with low vocabulary skills. As with study one, children engaged in the pseudoword task but also received vocabulary instruction whereby words and their meanings were read aloud. Findings indicated that although poor comprehenders retained vocabulary knowledge in line with the other two groups of participants, greater repetition of words and their definitions was required to achieve retention. Furthermore, poor comprehenders with the additional difficulty of low vocabulary appeared to lack strategies to derive meaning of unknown words from text.

Cain, Oakhill and Lemmon (2004) conclude that when researching the link between vocabulary and reading comprehension, as well as vocabulary knowledge itself, accessing this knowledge should be considered. Further to this, the influence of individual differences and the complexity of the relationship between vocabulary and reading comprehension is emphasised.

2.7.1 Vocabulary and reading comprehension reciprocity

A number of lower-level and higher-level language processes contribute to reading comprehension. These elements are incorporated into a model of the Simple View of Reading in Figure 2.

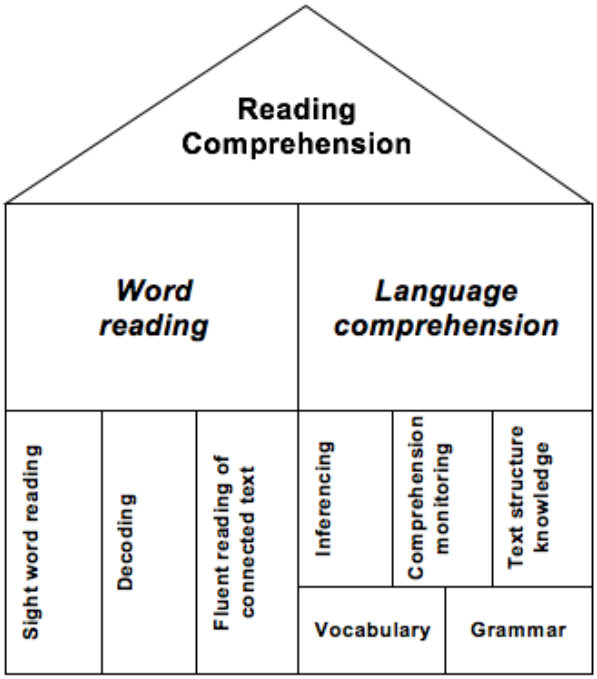

Figure 2. Visual representation of the Simple View of Reading and key components underpinning word reading and listening comprehension (adapted with permission from Hogan, Bridges, Justice, & Cain, 2011)

As indicated in Figure 2, vocabulary and grammar provide the foundation for higher-order processes, such as inferencing, comprehension monitoring and text structure knowledge. Hogan, Bridges, Justice and Cain (2011) suggest that the relationship between lower- and higher-order processes is reciprocal, which is supported by evidence that vocabulary growth supports reading comprehension and reading comprehension facilitates vocabulary development.

With regard to the interaction of these skills in EAL learners, Burgoyne, Whiteley and Hutchinson (2011) tracked the reading comprehension, listening comprehension and vocabulary progress of 39 monolingual pupils and 39 EAL learners in four schools within areas of the north-west of England with low socioeconomic status (SES). Reading and vocabulary standardised tests were conducted during year three (children were aged 7-8 years of age) and again one year later when participants were in year four (aged 8-9 years old). Although significant gains in vocabulary knowledge were achieved by both groups of students, pupils with EAL obtained significantly lower scores than their monolingual peers in initial and follow-up measures, indicating that a gap in attainment between the two groups was maintained over time.

Significantly higher scores were also observed for monolingual pupils in reading comprehension results, however discrepancies regarding the parallel forms of the standardised reading test used to assess reading comprehension (Neale Analysis of Reading Ability: Revised, 1989) have been raised by other researchers (Stothard & Hulme, 1991), therefore results from this test should be viewed with caution. Monolingual participants obtained significantly higher scores than children with EAL in listening comprehension. Regression analysis indicated that listening comprehension skills predicted performance in reading comprehension for both groups, however, vocabulary skills emerged as a significant predictor for the reading comprehension performance of EAL participants. Despite the limitations regarding testing measures used in this study, findings indicate the importance of vocabulary development on reading comprehension, especially for EAL learners.

In a systematic review of vocabulary interventions reporting reading comprehension outcomes, Wright and Cervetti (2017) analysed 36 peer-reviewed studies. Interventions that met selection criteria involved children from kindergarten (five to six years of age) to twelfth grade (17 to 18 years of age). In the studies reviewed, two main approaches were employed: direct teaching of words selected by adults and strategy instruction to promote independent vocabulary learning. Pre- and post-test measures involved both target word (target words taught and included in test reading comprehension passages) and generalised reading comprehension measures (general standardised or researcher-designed tests).

Instructional approaches varied greatly across all studies, however common themes emerged regarding effective practice. Pre-teaching vocabulary or providing vocabulary instruction during reading had a greater impact on comprehension than reading alone. Even in taught word approaches where vocabulary instruction was brief (below three minutes of instruction per target word), positive effects on reading comprehension were observed. However, this was mainly observed in interventions involving target word approaches. With regard to generalised reading comprehension measures, some studies involving intensive vocabulary instruction over longer periods of time did not produce greater gains when compared to a control group. Indeed, out of 16 studies that

included generalised reading comprehension measures, only four demonstrated significant effects, indicating that directly teaching word meanings had limited impact on generalised reading comprehension.

Interventions involving interactive processing of words, such as mapping out word meanings, produced greater and longer lasting gains than those relying on dictionary definitions, providing support for previous studies regarding dictionary definitions (McKeown, 1993). Teaching strategies to facilitate the child's role as active learner, rather than a passive receiver of definitions provided by adults proved to be important. Limited support for direct teaching of word meanings leading to reading comprehension gains was provided. Wright and Cervetti (2016) conclude that actively teaching multiple strategies for working out word meanings independently and developing self-monitoring of understanding is an area for possible future research as the amount and type of instruction required to produce meaningful gains was not clear from studies analysed.

Employing an approach that explored these aspects, Clarke, Snowling, Truelove and Hulme (2010) conducted a randomised controlled trial involving the reading comprehension of poor comprehenders. Twenty schools in Yorkshire, England took part, with eight pupils in year four (aged eight to nine years) from each school being randomly assigned to one of four reading programs: OL (oral language: strategies related to understanding and producing oral language, such as using new words in different contexts, using graphic organisers to map out meanings of words and mnemonics), TC (text comprehension: metacognitive strategies applied when reading, such as re-read, visualise and think aloud), COM (combination of the first and second condition) or waiting control group. Central to each of the interventions (OL, TC and COM) was Reciprocal Teaching (Palincsar & Brown, 1984); a metacognitive instructional reading comprehension approach involving four reading strategies typical of successful readers (clarifying, questioning, predicting and summarising). In addition, other techniques conducive to reading comprehension, as recommended by the National Reading Panel (2000), were integrated.

Participants were subject to three, 30 minute sessions per week (two sessions in pairs and one individual session) for 20 weeks. Standardised measures of reading comprehension and vocabulary were conducted after 10 weeks of the

intervention, again at 20 weeks and then 11 months after completion of the intervention. A researcher-developed measure of vocabulary based on Tier two words (Beck, McKeown & Kucan, 2002) was also used.

All three reading programs (TC, OL and COM) produced statistically significant gains in reading comprehension. Significant vocabulary gains were achieved for target and untaught words for the OL group and for taught words in the COM group, suggesting that the oral language training was an influential element in vocabulary development. Largest and long term gains in reading comprehension were also achieved as a result of the OL program. Children's vocabulary knowledge was a mediating factor in improving reading comprehension, leading researchers to conclude that difficulties in oral vocabulary contribute to reading comprehension needs. In addition, it is speculated that training in oral language strategies supported the development of metacognitive skills, which led to greater recognition and application of strategies conducive to development of reading comprehension and vocabulary.

Evident from the research discussed, developing metacognitive skills is regarded as beneficial to the development of vocabulary and reading comprehension. The following section considers the nature of these skills with regard to monolingual and EAL learners.

2.8 Metacognition

Metacognition is described as thinking about your own thoughts (Hacker, 1998) with regard to knowledge of cognition and regulation of cognition (Brown & Palincsar, 1982). Metacognitive skills develop when children are aged five to six and increase rapidly from the age of eight (Veenman, 2016). Skills are demonstrated through young children's emerging awareness of their memory (metamemory) and self-monitoring of understanding. Development of these skills is crucial in fostering independent learning and enables children to become active learners. In terms of vocabulary development, metacognition leads to deeper processing of words (Blachowicz & Fisher, 2000) and in reading comprehension, could result in a higher standard of coherence (Perfetti, Landi & Oakhill, 2005). A review of the impact of metacognitive strategies by the Education Endowment Foundation (EEF) indicates that consistently high rates of progress are made (averaging at an additional eight months) in general learning. It is emphasised

that teaching metacognitive skills is not a simple process and the most effective instruction involves adult scaffolding and collaborative group work (Higgins, Katsipataki, Kokotsaki, Coleman, Major, & Coe, 2014).

Metalinguistic awareness; metacognition regarding language structures (Nagy, 2007), involves the ability to reflect upon and dissect language and is identified as a strength for multilingual individuals (Lauchlan, 2014). It is suggested that due to learning experiences in their first language, EAL pupils are more able than monolingual students to access and draw upon their metalinguistic knowledge, such as identifying strategies that are successful when learning to read and morphological awareness (Gabe & Stoller, 2013). Word consciousness forms part of metalinguistic awareness and involves awareness of and interest in words and their meanings (Lane & Allen, 2010). Children who are 'word conscious' are motivated to find out the meaning of unknown words and pay attention to word parts and word order (Nagy & Scott, 2009). This is pertinent to vocabulary development as increased awareness of language and words enables conscious recognition of connections between existing and new knowledge.

2.9 Rationale for Reciprocal Teaching

Due to the reciprocal relationship between reading comprehension and vocabulary, Reciprocal Teaching (RT), a metacognitive reading comprehension approach, was selected as the vehicle through which to develop vocabulary and reading comprehension skills in the current study. RT is a metacognitive approach that promotes active learning and supports elements identified by Wasik and Hindman (2015) as key to vocabulary development; particularly the opportunity for children to relate definitions of new words to their own experiences through discussion and to reach a shared understanding of vocabulary encountered using their own words. Adult scaffolding is central to RT, which is identified as an effective means to teach metacognitive skills (Higgins, Katsipataki, Kokotsaki, Coleman, Major, & Coe, 2014). As indicated, the development of metacognitive skills is beneficial for both vocabulary (Blachowicz & Fisher, 2000) and reading comprehension (Perfetti, Landi & Oakhill, 2005).

Details of a systematic review of existing literature is detailed below, followed by exploration of relevant RT evidence pertinent to the current research.

2.10 Reciprocal Teaching (RT)

2.10.1 Systematic search

Library catalogues (University College London Institute of Education library and University College London library) and electronic databases (Institute of Education library, University College London library, Senate House Library, BEI (EBSCO), APA PsychNET, ERIC (Proquest), AEI (Proquest), Web of Science, ASSIA, COPAC, JSTOR, PsychINFO, PsychARTICLES, Linguistics and Language Behavior Abstracts (LLBA) were searched for published articles, theses and texts exploring vocabulary development, vocabulary acquisition, vocabulary growth and the effectiveness of Reciprocal Teaching in developing vocabulary and reading comprehension skills of primary-age children. Reference harvesting of the selected literature was also used to improve the rigour of the search. See Appendix B for a record of search terms used and the systematic approach used.

2.10.2 Origins and theoretical basis of RT

Reciprocal Teaching (Palincsar & Brown, 1984) is a metacognitive, instructional approach that originally aimed to improve reading comprehension for poor comprehenders. It involves four strategies to engage particular processes: predicting (making and exploring inferences), clarifying (critical evaluation), summarising (allocate attention and monitor understanding) and questioning (focusing on main ideas). Reciprocal refers to the interactions that take place between members of the group that enable collaborative construction of meaning whilst reading a text (Palincsar & Brown 1986).

RT strategies should be modelled explicitly and applied flexibly to promote student autonomy as it is expected that pupils will eventually lead sessions, with minimal adult involvement. The approach does not facilitate a fast pace of reading as deeper understanding and thinking are required (Palincsar, David, & Brown, 1989). This is reflected in changes in dialogue that occur during sessions. Palincsar and Brown (1984) recorded exchanges between adults and children during RT sessions and sent transcripts of recordings to an impartial assessor who ordered dialogue according to stage of intervention (beginning, middle or end). An ordering accuracy level of 83% was achieved for transcripts taken from

the beginning and end of the RT intervention, thus indicating the strength of qualitative changes evident in the dialogue. In addition to these qualitative measures, substantial gains were achieved in reading comprehension scores following the 15 to 20 consecutive days of RT instruction and were maintained for a duration of eight weeks. Based on these and subsequent findings, the researchers recommended that approximately 25 RT sessions should take place, with the first 12 occurring on consecutive days and then for a minimum frequency of two to three times per week following this. Palincsar, David and Brown (1989) state that informal research indicates that gains were still made when RT was not conducted on consecutive days, however caution that the pace and depth of learning may not replicate Palincsar and Brown's (1984) findings.

The social context of RT is motivating and provides the opportunity for children to reflect on their own difficulties with reading comprehension and support other pupils based on this understanding, which an adult may not be able to appreciate as an 'expert' reader (Palincsar & Brown, 1988). As part of collaborative learning, students are able to co-construct meaning by drawing upon shared interests (e.g. characters from computer games, popular song lyrics) that the adult may not be aware of (Palincsar & Herrenkohl, 2002). Heterogeneous, rather than homogeneous grouping is recommended following extensive classroom observations conducted by Palincsar and Brown (1986).

Studies have shown Reciprocal Teaching to be effective in increasing reading comprehension (Lysynchuk, Pressley, & Vye, 1990) with pupils of varying ages, backgrounds (Carter, 1997) and abilities (Alfassi, Weiss, & Lifshitz, 2009). The success of RT has been attributed to the principles that underpin it (Brown & Palincsar, 1989). These four principles include: the Zone of Proximal Development (Vygotsky, 1978), scaffolding (Wood, Bruner, & Ross, 1976), Proleptic Teaching (Stone & Wertsch, 1984) and Cognitive Apprenticeship (Collins et al., 1989).

The Zone of Proximal Development (ZPD) is conceptualised as:

> "*the distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in*

collaboration with more capable peers" (Vygotsky, 1978 p. 86)

However, Vygotsky did not provide specific guidance on the nature of adult mediation and it is argued that the ZPD has been subject to a range of interpretations by researchers and scholars (Wertsch, 1984). Poehner (2008) attributes this to the limited number of sources in which Vygotsky discusses the ZPD in detail, which has resulted in the definition being used out of context. Furthermore, Chaiklin (2003) posits that Vygotsky's conceptualisation of the ZPD focuses on child development, rather than as an applicable approach to learning in general and that scaffolding is a more useful concept to work from with regard to educational research and practice.

Scaffolding (Wood, Bruner, & Ross, 1976) relates to structured interaction between a learner and an expert whereby the expert controls aspects of a task that are beyond the ability of the learner when unassisted. Pea (2004) argues that the term scaffolding has been overused and misinterpreted by researchers since its conception and recommends that the principles devised by Wood, Bruner and Ross (1976) be adhered to. Following Wood, Bruner, & Ross' (1976) original study involving a small sample of 30 children (aged three to five years) engaged in a construction task with an adult tutor, the following aspects were identified as being pertinent to the expert's role: recruitment (engaging the learner in the task), reduction in degrees of freedom (decreasing the number of steps completed by the learner within a task according to their ability), direction maintenance (ensuring the learner continues to work towards the aim of the task), marking critical features (identifying particularly important aspects of the task and discrepancies in the learner's performance), frustration control (supporting the learner in managing frustration without creating overdependence on the expert) and demonstration (modelling aspects of the task explicitly). Collins, Brown and Newman (1989, p. 456) later identified 'fading' as an essential aspect of scaffolding in facilitating the learner's independence:

"*Once the learner has a grasp of the target skill, the master reduces (or fades) his participation, providing only limited hints, refinements, and feedback to the learner, who practices successively approximating smooth execution of the whole skill.*"

Optimising learner independence and based on least assistance first, Bosanquet, Radford and Webster (2016) propose a model of the scaffolding process that is contingent on the needs of the learner. Focusing on the interaction between teaching assistants (TA) and children in the classroom environment, the following incremental levels are proposed: self-scaffolding (the learner can self-regulate their learning so no adult assistance is needed), prompting (the adult provides thinking time, a verbal prompt or a gesture to initiate the learner's thinking but without informing the pupil of what to do), clueing (providing hints that are specific to the task with regard to skills, strategies or knowledge) modelling (thinking aloud whilst demonstrating aspects of a task) and correcting (the adult provides the solution, to the task). Incorporating scaffolding, Cognitive Apprenticeship (Collins, Brown & Newman, 1989) involves the explicit modelling and teaching of internal cognitive processes by an expert to allow the student to develop their expertise in aspects such as self-correction and monitoring.

The expert engages in modelling (demonstrating and thinking aloud), coaching (facilitating processes and supporting the learner), reflecting (the learner replaying their own and the expert's problem solving skills), articulating (encouraging the learner to articulate their knowledge and reasoning) and exploring (promoting the generation and testing of hypotheses). Further considerations include sequencing tasks according to increasing complexity, providing the opportunity to practise skills in different contexts and facilitation of social factors such as cooperation between students, active communication about tasks and promoting the development of intrinsic motivation (driven by internal rewards) (Collins, Brown & Holum, 1991). In addition, pupils are expected to act as the expert on occasion, such as answering questions that the adult cannot answer. As noted by Dennen and Burner (2008) following their review of the literature, research into cognitive apprenticeship generally provides support for the model developed by Collins et al. (1989). However, inconsistency in research methods adopted, various adaptations of the original cognitive apprenticeship model and a lack of replication of findings influences the weight of this claim.

Proleptic Teaching (Stone & Wertsch, 1984) is an approach that involves an adult anticipating students' ability and success. Part of this involves engaging pupils in

tasks that exceed their current performance with the expectation that they will succeed. Responsibility gradually shifts from the expert to the learner over time following observation and incremental learning at the pupil's pace (Brown & Palincsar, 1989).

According to Palincsar, David and Brown (1989), comparative studies involving Reciprocal Teaching and other reading instruction approaches demonstrated that only the traditional RT approach incorporating the principles described above produced large and reliable changes in student's reading comprehension. The application of these psychological principles, therefore, contributes towards intervention fidelity.

Rosenshine and Meister (1994) systematically reviewed extant RT research and selected studies according to three criteria:

1) The term 'Reciprocal Teaching' was used;
2) Palincsar and Brown (1984) were referenced;
3) Participants were randomly allocated to control or experimental groups.

Sixteen studies were identified and ranked according to high, medium or low quality. This was determined by study design, techniques used to assess pupils' learning and assessment of the RT dialogue. Some studies measured participants' reading comprehension at stages throughout implementation of RT to track progress over time, which was consequently included in future recommendations. Due to the importance placed on dialogue in RT, monitoring this aspect is described as key, whether through recordings or observation. One barrier acknowledged by Rosenshine and Meister is the lack of guidance regarding procedures for assessing and monitoring dialogue and general delivery of RT. Difficulties encountered during RT instruction were not acknowledged by many researchers and it is suggested that such reflections should be included within the results and discussion section of reports.

Both significant and non-significant results were achieved irrespective of student ability at pre-test (whether 'poor,' 'below average' or 'good'), the role of the lead adult (researcher or teacher) or age of children (year three pupils to adults), which suggests that factors leading to reliable implementation are yet to be determined. Despite this, Rosenshine and Meister's review is helpful in identifying

aspects and procedures that future research should adhere to, which include the following recommendations:

- The purpose of instruction should be made explicit and explained to children;
- Students' comprehension should be assessed during and after studies;
- Conduct follow-up testing 60 days after the post-test;
- Evaluate the quality of the RT dialogue and provide transcripts to facilitate this;
- Researchers to identify and discuss problems arising during instruction and dialogues.

Further consideration regards testing measures employed. Rosenshine and Meister's (1994) analysis indicated a discrepancy between the types of assessments used to measure effects. Results were more likely to be significant when using a test developed by the experimenter and less significant results were generated by the use of standardised tests. A median effect size of 0.32 (small) was found across all studies when standardised tests were used, which contrasted with 0.88 (large) achieved for researcher-developed tests. It was suggested that longer text passages were used in non-standardised tests, meaning that less background knowledge was required and the format of questions relating to the reading material varied from multiple choice to retrieving answers directly from the text. In addition, phrasing and content of questions typically found in standardised assessments do not align with the approach taken during RT. These findings have implications for the present study in that standardised tests will be used as pre- and post-intervention measures. However, in contrast to Rosenshine and Meister's (1994) findings, a more recent meta-analysis of RT research, Galloway (2003) demonstrated larger effect sizes of 0.56 for standardised tests and 0.92 for researcher-developed tests. It is concluded that because both meta-analyses involve small samples (16 and 22 studies respectively) further investigation is required.

The focus on quantitative studies in Rosenshine and Meister's (1994) and Galloway's (2003) meta-analyses means that no information is provided regarding pupils' experience and it appears that little importance is placed on the perspective of the children involved. Current research seeks to rectify this by including measures to elicit children's views.

Searches of the literature indicated a growth in research since Rosenshine and Meister (1994) and Galloway (2003) conducted their meta-analyses. It is beyond the scope of this study to evaluate the entirety of the recent evidence-base, therefore studies relevant to the current investigation are focused upon in the next section.

2.10.3 Implementing Reciprocal Teaching

In an account written by a teacher (Moon, 2011, p. 97), difficulties encountered in implementing RT were attributed to:

> *"another clueless attempt by researchers to tell me how to run my classroom."*

However, following reflection, this practitioner identified that pupils' prior knowledge had not been considered and it was assumed that students were aware of the purpose of the four RT strategies and how to apply them when reading. The teacher recognised the importance of scaffolding and explicit modelling of strategies and invested time in incorporating RT successfully into their classroom practice over a period of twelve years. From this experience, it is concluded that lack of experience as a novice teacher impacted upon successful RT delivery. Reflection, mentorship and professional development are identified as crucial in enabling the transference of evidence-based practice into the classroom. This is supported by Hacker and Tenent's (2002) assertion that training practitioners in traditional RT is essential in ensuring intervention fidelity.

Seymour and Osana (2003) demonstrate the need for extensive, rather than brief training. In their case study, two teachers participated in four RT training sessions, which included discussion regarding practitioners' core beliefs regarding teaching and learning. Including this aspect elicited important information regarding different beliefs held by these individuals. Exploration of teachers' understanding of the principles underpinning RT indicated lack of understanding e.g. one professional conceptualised the Zone of Proximal Development (ZPD) as a physical space within the brain and maintained this position despite further training provided by the researchers. Teachers also demonstrated confusion when modelling strategies and appeared to view clarifying and questioning as the same strategy. Such confusion in adults

illustrates the need for careful and clear explanation of strategies when working with children. Close supervision and monitoring by researchers addressing some misconceptions, however, as indicated by the teacher's position on the ZPD, altering individuals' views is not a simple task and it was not possible for researchers to alter or influence these by 'giving psychology away' (Miller, 1969).

Furthermore, researchers found that there was a difference between what the teachers said they did and what they actually did. For example, one practitioner discussed the use of scaffolding with pupils but did not demonstrate this principle when interacting with pupils. This is an indication of the discrepancy between espoused theory and theory-in-use (Argyris & Schön, 1996). Espoused theory relates to the values that individuals believe their actions are based on and theory-in-use (unknown to the individual) pertains to the values their observed behaviour is actually based on. In an example from this study, one teacher believed their actions were based on the concept of cognitive apprenticeship (explicit modelling and teaching of internal cognitive processes by an expert), however observation of RT sessions and discussion with researchers indicated that the principles drawn upon involved, in the teacher's words, "getting main ideas out of the text."

The implications of espoused theory and theory-in-use is demonstrated by Greenway (2003) in their study regarding the process of an Educational Psychologist (EP) facilitating implementation of RT in a school in London, England. The EP worked closely with a teacher in year six for one year, following a request by the Head Teacher to suggest and effect an intervention for poor comprehenders in this year group. Consultation (Wagner, 2000) was used with the teacher to explore espoused theories and theories-in-use. Beliefs such as RT leading to children behaving "out of control" and reading comprehension as an innate and fixed skill were addressed using careful questioning and reframing. The researcher attributes the success of this study (all eight pupils involved in this study achieved significant gains in reading comprehension) to the time dedicated to ongoing consultation with the teacher in addressing challenges. Further consideration was given to the teacher's anxiety that the Head Teacher had requested this piece of work as a result of doubting their competence, which was also explored and resolved through consultation. In addition to consultation

as a crucial factor in successful RT implementation, introduction of this approach was conducted in small increments to enable the teacher to incorporate it into their practice without feeling overwhelmed.

2.10.4 Reciprocal Teaching and vocabulary

A systematic literature review and wider reading revealed four studies that employed RT to specifically develop vocabulary growth. Of these investigations, one was an anecdotal account of RT use in the classroom by a primary school teacher in North America and the remaining three studies explored adapted RT approaches in The Netherlands, Australia and Canada. Altering approaches can affect their impact and compromises intervention fidelity (to deliver an intervention as intended). In a reflective review for the National Reading Conference in 2006, Palincsar referred to the four RT strategies as “taking on a life of their own” (p. 45) due to RT being oversimplified and the crucial dialogue stripped away. The deviance of the RT approach from usual directive teaching practice is also identified as a factor leading to misapplication. These reflections are considered when discussing the following research.

Tomesen and Aarnoutse (1998) emphasise the importance of developing an approach that engages children with smaller vocabularies and those with poor comprehension skills as previous research shows that these pupils are more likely to skip over difficult words without trying to discover their meaning. Children in this position also tend to adopt a passive approach and lack the motivation and metacognition to address difficulties with vocabulary and reading. It is possible that metacognitive approaches, such as RT, are beneficial for children in this position as key skills are explicitly taught and the social environment generated by RT enable support and progression.

This study involved experimental and control conditions with 31 grade four Dutch pupils, who were classed as ‘poor’ or ‘average’ readers. 17 students were categorised as ‘immigrant’ children (no further information provided) and the remainder were from low SES Dutch backgrounds. Teachers allocated participants to groups based on ‘best fit’ with regard to working dynamics. Pre- and post-intervention vocabulary, decoding and reading measures were conducted, however one of the word meanings tests was only carried out post-intervention (reasons for this are unclear). The experimental group received an

instructional programme ('Word Detective') and an amended version of RT involving different strategies to the four intended. Think-alouds were modelled by adults and responsibility for leading sessions was transferred from adult to pupils. This occurred twice per week for six weeks and each session lasted 45 minutes. Details regarding the control group were not shared in depth.

Children in the experimental group performed significantly better on both word meaning measures than the control group, although it is noted that one of the measures was administered post-test only. Improvement in performance was attributed to the development of strategies related to deriving word meaning as a result of the think alouds that were conducted by adults and children during sessions. In addition, participants were required to devise their own descriptions of word meanings, which is one of the effective strategies indicated by vocabulary development research (Barr, Eslami, & Joshi, 2012). No significant differences were found for the reading measures and researchers concluded that the small number of sessions (12 in total) were not enough to produce transfer effects.

Based in Australia, Bruce and Robinson (2002) conducted a study in which children received a greater amount of input over a total period of eight months. Seventy-four children were sampled from year five and year six classes (ages ranged from 9 years and 7 months to 12 years) with reading difficulties across five schools. Participants were allocated to three modified RT conditions during three phases (each phase lasted for eight weeks). Condition one involved metacognition word identification training (Clever Kids Reading Programme) during phase one (30 minutes per day for two days per week for eight weeks) followed by application of this training along with two reciprocal teaching strategies questioning and summarising in phase two (three, 30-minute session per week for eight weeks). Phase three involved continuation of this approach for 30-minute sessions twice per week for eight weeks.

Teachers in the second condition used 'traditional' methods when encountering unknown words (described in this paper as the adult supplying and pronouncing words, followed by discussion with pupils) and employed worksheet-based approaches for reading comprehension during phase one, followed by modified RT strategies (such as written responses to comprehension) and traditional word teaching for phases two and three. The third condition involved RT strategies and

traditional vocabulary instruction (no further detail is provided) for all three phases. Teachers or teaching assistants led sessions and were monitored by the researchers during the initial two weeks to ensure that instruction proceeded as intended.

Pre- and post-intervention measures included a word reading test, a metacognitive word identification test (in which participants are required to justify reasoning when reading pseudowords according to phonic, orthographic, morphological and context cues) and a reading comprehension assessment. Significant effects of time were observed on most metacognitive word identification measures; however, interaction effects were lacking. It is concluded that the metacognitive Clever Kids Reading Programme did not produce greater gains than traditional word teaching strategies. For reading comprehension measures, significant improvement was observed for participants in all three conditions, which was attributed to improvements in word identification. With regard to word identification findings, Bruce and Robinson (2002) hypothesise that adults leading the intervention were not as familiar with metacognitive approaches as the researchers, who had observed greater gains in previous studies employing similar approaches. It is possible that in modifying RT strategies, participants did not have the opportunity to develop metacognitive skills to the extent evident in previous research (Palincsar & Brown, 1984). In addition, it is unclear how the Clever Kids Reading Programme was integrated with the RT approach.

Stygles' (2012) anecdotal account of using RT in the classroom as a teacher involves subjective observation, rather than the rigor of pre- and post-measures. The RT approach was selected as it was regarded as promoting word consciousness and active discussion of word meanings. Students' self-esteem was also an area of focus. Details regarding frequency and number of small group sessions and procedure were not provided, although additional elements, such as written tasks and pre-teaching vocabulary were used alongside discussion of the four RT strategies. Some insight into children's thinking was gained and application of existing knowledge was observed (e.g. the use of root words to determine meaning). Despite not employing RT over a sustained period of time but rather as an initial exploration, Stygles noted the impact this approach

had on students' enthusiasm in discussing unknown words with each other and deriving meanings as a group. Children identified the clarifying strategy as enabling understanding and consequent use of unknown words.

One study specifically included the terms 'Reciprocal Teaching' and 'vocabulary' in the title. In this study, Mandel, Osana and Venkatesh (2013) explored the impact of an RT approach on the receptive and expressive vocabulary of 44 children in the first grade in a small urban private school in Canada. All participants spoke English as their first language and varied in SES. The researchers adapted the traditional model of RT by including two additional elements: storytelling and generative processing (integrating new information with existing knowledge) (Joe, 1998). However, description of programme procedures within the methods section of this study do not convey how this approach differed to RT as envisaged by Palincsar and Brown (1984). 23 first grade children were randomly assigned to the treatment group (Adapted RT: ART) and 21 to the control group (shared reading). Three training sessions and five instructive lessons were delivered and the same three books were read in both groups.

Pre-tests involved an experimenter-developed assessment of a list of target and non-target words related to the topic 'flight' (e.g. 'jet'). Non-target words were common flight words and target words were deemed as technical and less likely to be encountered by children. As part of receptive language measures, children were required to circle one image out of a choice of four when a word was read aloud (responses could be guessed rather than known). For assessment of expressive language, participants were asked to write a word that corresponded with images presented. This assesses knowledge of words as labels, rather than representing the depth of knowledge associated with words. Expressive vocabulary was not measured during the pre-tests as Mandel, Osana and Venkatesh reasoned that if children do not have the receptive knowledge of a group of words they are not likely to have expressive knowledge of these either. However, results indicated that children in both the control group and ART group had some prior knowledge of target words, therefore this assumption is incorrect.

There was no significant difference between the performance of groups at pre-test for receptive vocabulary measures, therefore researchers concluded that significant differences at post-test served as an indication of the positive impact

ART had on receptive and expressive vocabulary growth. It is difficult to corroborate this claim for expressive vocabulary as it was not measured prior to intervention. Although this study implies successful use of adapted RT to improve vocabulary development, Rosenshine and Meister's (1994) conclusions regarding discrepancy between experimenter-developed and standardised assessments must be considered when interpreting these findings.

2.10.5 Reciprocal Teaching and EAL learners

Review of the literature indicated that the vast majority of studies involving RT and EAL learners were confined to contexts such as universities or secondary schools in other countries and included modifications to the RT approach, such as computer-based programs, peer mediation and separate instruction of the four RT strategies. These settings and approaches are not relevant to the current study; however, evidence indicates that RT is beneficial in supporting the reading comprehension of individuals with EAL (Dabarera, Renandya, & Zhang, 2014) and produced greater gains than traditional reading instruction (Kargar & Tayebipour, 2015).

A study based in Auckland, New Zealand involved 12 EAL learners, aged 11-13 who spoke Mandarin as their first language and English as their second or third language (Fung, Wilkinson, & Moore, 2003). All students participated in daily RT sessions, which were conducted in Mandarin and English on alternate days for 15-20 days. Results indicated that students achieved significant gains on standardised and researcher-developed reading comprehension tests. Qualitative information gathered during observation of sessions demonstrated that greater collaboration occurred during sessions conducted in participants' first language and that the very slow pace of dialogue prohibited access to text during English instruction. Participants are described as 'new migrants' from Taiwan and the number of months or years living in Auckland is not specified, therefore it is difficult to determine the level of English proficiency possessed by the students. Although involving a small sample and with no control group for comparison, it is possible that conducting a portion of instruction in pupils' first language may be beneficial for EAL learners engaging in RT.

Lindahl and Watkins (2014) advocate the use of instructional reading approaches with EAL learners and list making predictions, inferencing and asking questions

as beneficial techniques. Reciprocal Teaching is included within their recommendations for meeting the needs of culturally and linguistically diverse students. With experience of implementing RT over a period of 20 years, Oczkus (2010) asserts that substantial progress in reading comprehension is consistently made, particularly with EAL learners. Adult modelling and scaffolding facilitates understanding and use of academic language and approaches developed by the researcher, such as hand movements for the four strategies, visual prompts and motivating games, enable concepts to be made concrete (Oczkus, 2009).

Of particular relevance to the current study, the London Schools Excellence Fund (LSEF) recently evaluated a project involving the use of RT as part of guided reading practice in a hub of schools (LSEF, 2015). Eleven London schools from an ethnically diverse borough participated in this project and 'reading champions' (staff taking the lead in implementation) were appointed in each school. Following implementation, pupils with EAL made better than expected progress in reading, especially the year two to three group. This provides evidence that RT can be effective with younger children and indicates that RT may be an appropriate response to the reading 'dip' acknowledged by Oakhill, Cain and Elbro (2014) as children move into Key Stage Two. It is suggested that the emphasis on dialogue within RT enabled this accelerated progress.

2.11 Unique contribution of the current study

UK context

The majority of Reciprocal Teaching research and articles are based on work carried out in North America or other countries and RT has not been widely used in schools in England (Brooks, 2016), other than one borough in the preliminary stages of implementation (LSEF, 2015). Providing evidence of success with pupils based in London boroughs would enable use of this intervention in English schools with diverse populations.

Focus on vocabulary development and EAL

Evidence indicates the success of RT in improving reading comprehension but there is limited research on the effect it has on vocabulary development. Considering the processes that have been identified as crucial in vocabulary development, it was anticipated that RT would be effective in facilitating

vocabulary gains. This study also explores the impact of English as an Additional Language (EAL) on participants' performance, which is relevant to the increasingly diverse populations that London schools serve.

Study design

Methods mirror procedures conducted by Educational Psychologists in their role. It is hoped that this increases the relevance of outcomes and findings as well as providing insight into the task of recommending and implementing evidence-based practice.

2.12 Research questions

1) Would educationally significant gains be made in vocabulary and reading comprehension as a result of this short RT intervention?
2) If educationally significant gains were observed, would these be restricted to children who received the largest number of RT sessions?
3) If educationally significant gains were observed, would these differ in magnitude for monolingual children and pupils with EAL?
4) What is the experience of the children taking part in the RT intervention?
5) What are the facilitators and barriers to implementation of the RT intervention?

The first three research questions aimed to determine the impact of Reciprocal Teaching on participants' vocabulary development and reading comprehension skills through the collection and analysis of quantitative data. Research questions four and five involved the collection and analysis of qualitative data to elicit children's and adults' perspectives regarding RT and its implementation. Quantitative and qualitative data collection and analysis are discussed in detail within the Methodology chapter.

Chapter 3. Methodology

Research methods are not neutral tools as they are underpinned by ontological and epistemological frameworks (Denscombe, 2009). This chapter outlines the rationale for methodological approach and study design. Included is a description of procedures, adaptations following a pilot study, participant information and ethical considerations. Quantitative and qualitative data collection and analysis is also discussed.

3.1 Rationale for methodological approach

Scott (2010) argues that critical realism is compatible with the open systems that exist within the field of education. Open systems are described as those that exchange feedback with the external environment through semi-permeable boundaries, in contrast to closed systems, which have hard boundaries through which little information is exchanged (Roberts, 1994). Systems theory is relevant as the critical realist researcher acknowledges the interaction between individual and environment. Individuals interpret and experience reality differently so researchers cannot determine cause and effect indefinitely (Shipway, 2011).

In order to address all research questions and to consider participants' interpretations of their experience, qualitative and quantitative data were gathered. Tashakkori and Teddlie (1998) define this approach as mixed methods. Maxwell and Mittapalli (2010) argue that critical realism is a productive stance for mixed methods research as it integrates realist ontology (reality exists outside of interpretations) and constructivist epistemology (meaning is created through social interaction and interpretation). The credibility of mixed methods research has been widely debated due to the opposing philosophical perspectives underlying qualitative and quantitative approaches (Scott, 2014). Mertens (2012), however, argues that there is no right or wrong philosophical lens when conducting mixed methods research and debating different frameworks allows useful consideration of potential opportunities and challenges. With regard to challenges, Hesse-Biber (2016) refers to researcher limited skill set, insufficient critique of ideas from different disciplines and aligning definitions of concepts.

Despite potential limitations, there are also many benefits of a mixed methods approach. Following a content analysis of 232 social science articles, Bryman

(2006a) devised a list of reasons for integrating qualitative and quantitative research. Justifications relevant to the current study include:

- triangulation (input of qualitative and quantitative data enhances validity);
- a comprehensive picture is generated;
- a wider range of research questions may be answered;
- the complex nature of the real world is captured to a greater extent;
- qualitative data provides the context for quantitative measures;
- findings are more useful in an applied field (e.g. Educational Psychology).

Due to the reasons outlined above, a mixed methods convergent design was employed in the current research (Creswell & Clark, 2011). Qualitative and quantitative data were collected pre- and post-intervention to provide different but complementary data (Morse, 2010). In line with the original approach taken by Palincsar and Brown (1984), it was planned that each RT session would be audio recorded to track and monitor qualitative changes within the dialogue during the RT intervention. This design was developed following a pilot study that was conducted during 2014 to 2015. Adaptations resulting from the pilot study will be explored to illustrate procedural development over time before current methods are addressed.

3.2 Pilot Study

3.2.1 Pilot study description

The pilot study was conducted in a large London primary school between October 2014 and July 2015. 75% of pupils are from a wide range of ethnic backgrounds and approximately half of the school population (higher than the national average) speak English as an additional language. The proportion of disadvantaged pupils supported by pupil premium (extra government funding for students known to be eligible for free school meals or children who are looked after) is well above the national average, at around two thirds. A previous Ofsted inspection judged the school as ‘Requires Improvement’ and inspectors raised concerns regarding a group of year six pupils whose reading progress had plateaued. After further exploration, the school’s Educational Psychologist attributed this to expressive and receptive language delay and consequent reading comprehension difficulties.

A Reciprocal Teaching (RT) intervention was planned to address pupils' needs, with sessions led by the researcher and Teaching Assistant (TA). A mixed method multiple case study design was implemented, which consisted of pre- and post-assessment of vocabulary and reading comprehension assessment as well as semi-structured interviews with the relevant school staff and children. Results from pre-intervention and post-intervention quantitative measures demonstrated an increase in expressive and receptive vocabulary but not reading comprehension. Qualitative data from semi-structured interviews indicated that participants enjoyed the opportunity to discuss texts as a small group and awareness of unknown words and self-monitoring skills increased. Following the success of the pilot study, the school chose to incorporate Reciprocal Teaching into the whole school reading curriculum.

3.2.2 Pilot study participants

The pilot study involved four participants (aged 11) for whom English is a second language. Students spoke English at school and in their mother tongue within the wider community and at home. Due to the small sample size, statistical analyses were not possible to determine the significance of differences between pre- and post-intervention quantitative measures.

Changes to participant recruitment following pilot study

⇒ Larger sample recruited to enable statistical analyses;
⇒ English as a first or second language added to inclusion criteria to compare possible difference in response to RT;
⇒ Years 4 to 6 added to the participant inclusion criteria to explore feasibility of carrying out RT with pupils across Key Stage Two;
⇒ Participants recruited from two mainstream primary schools to explore the possible impact of different settings.

3.2.3 Pilot study training and RT session delivery

At the start of the pilot study, the Teaching Assistant (TA) was trained through discussion with the researcher, printed articles and direction to the following website: http://www.readingrockets.org/strategies/reciprocal_teaching. The researcher provided lesson plans for the TA so that key aspects (such as adult

modelling of the four strategies) were included in each session. In the current study a less directive approach was taken as it is not typical for Educational Psychologists in the Educational Psychology Service where the researcher is based to deliver similar interventions to children directly. Extant research also indicates that the role of the lead adult does not influence the outcomes of the intervention, rather that understanding and application of the underlying principles are key (Palincsar & Brown, 1984).

Changes to training and session delivery following pilot study

⇒ Formal PowerPoint training session with all year group staff (teachers and TAs), Literacy coordinator and member of the school's senior leadership team e.g. Special Educational Needs Coordinator (SENCo) or Deputy Head Teacher (see Appendix G);
⇒ Staff to devise and deliver sessions (with ongoing support from the researcher);
⇒ Sessions modelled by the researcher (frequency requested by staff);
⇒ Ongoing pupil assessment through staff observation and the completion of the RT matrix (see Appendix D);
⇒ Regular contact between the researcher and TAs via email, telephone or meetings as part of ongoing consultation.

3.2.4 Intervention fidelity

Leff, Hoffman and Gullan (2009) discuss the importance of 'intervention integrity' or fidelity when establishing whether a programme consistently produces positive outcomes. The difference between a poorly designed programme and a poorly implemented one is emphasised. The integrity of the pilot study intervention was compromised by the Teaching Assistant's lack of understanding regarding Reciprocal Teaching (RT) principles, despite training, joint delivery and ongoing supervision by the researcher. The Teaching Assistant discussed the four strategies (summarising, clarifying, questioning and predicting) with pupils but did not engage in adult modelling or scaffolding, which were crucial components highlighted on the session plans she received. In addition, she was confused about the function of the RT strategies, hence was not in a position to advise the pupils on correct application of these tools.

Ten RT sessions took place out of a planned twenty-five. The minimum number of sessions required to show significant gains is twelve, with lessons occurring at least twice per week (Oczkus, 2010). With the end of the summer term approaching it was challenging to establish a consistent and regular routine, which affected students' recall of strategies discussed and meant that less time was available to practise and apply these.

Steps taken to address intervention fidelity

Prior to beginning the current study, the researcher visited two schools in an Outer London borough in which RT had been adopted at a whole school level and established as an approach for three years. Aspects noted during observations and conversations with staff were incorporated within the training PowerPoint. In addition, Dr. Tennent, the University of East London senior lecturer delivering RT training in this borough, was contacted via email regarding the facilitators and barriers in implementing the approach. Dr. Tennent provided the following response (included with permission):

"In terms of barriers and facilitators, it might be argued there is a bit of binary relationship between the two. Key factors which support facilitation include: pedagogical knowledge, knowledge of the comprehension process (subject knowledge), senior leadership support, space to share practice and access to quality texts."

To emulate RT as originally conceived (Palincsar, David & Brown, 1984), an unpublished manual was sought from Palincsar, David and Brown (1989). These procedures and recommendations provided the basis for the RT intervention delivered. A script within Appendix A of the manual was used by the researcher in both schools to ensure that all participants received the same introduction to RT and the four strategies. Following their review, Rosenshine and Meister (1994) communicated the need for researchers to state which of the RT approaches were to be used (RTO or ET-RT). RTO (Reciprocal Teaching Only) involves strategy modelling and instruction during dialogue, whereas ET-RT (Explicit Teaching before Reciprocal Teaching) involves teaching the four strategies prior to group dialogue. ET-RT was implemented in the current study. In addition to specifying approach, Rosenshine and Meister (1994) produced a

checklist of features that must be present in order for an intervention to be classified as Reciprocal Teaching. The checklist and the RT teacher's guide acted as fidelity measures in this research. Key aspects from the guide and checklist were presented to school staff as part of the training session (see Appendix F).

Changes to address intervention fidelity following pilot study

⇒ RT manual developed by Palincsar, David and Brown (1989) used as a basis to train and teach from;
⇒ Rosenshine and Meister's (1994) RT checklist adhered to (see Appendix F);
⇒ Staff to audio record each session as part of ongoing monitoring and development;
⇒ Structured ET-RT approach to be implemented, with a script used to introduce strategies;
⇒ Researcher modelled RT sessions to school staff;
⇒ Number of RT sessions agreed with SENCos;
⇒ The RT intervention was implemented in February 2016 to reduce the likelihood of timing difficulties (e.g. end of year performances, sports day etc.).

3.3 Current research setting and procedures

3.3.1 School recruitment

As a Trainee Educational Psychologist (TEP), the researcher acts as the link Educational Psychologist (EP) for five schools within a London borough. In line with the Special Educational Needs and Disability Code of Practice: 0 to 25 years (DfE and DoH, 2015), Special Educational Needs (SEN) planning meetings are conducted with the Special Educational Needs Coordinator (SENCo) in each setting to identify individuals or groups of pupils with a range of needs. Part of this process involves scrutinising pupil data and identifying patterns regarding particular needs in certain year groups. The Reciprocal Teaching intervention (along with participant inclusion criteria) was included as an agenda item in September 2015 and two schools registered their interest in taking part in this research. Although this was agreed in September 2015, a further academic term was required to gain consent, organise staffing, timetable training and plan RT sessions. Pre-intervention assessment took place in January 2016.

3.3.2 Demographic information

Schools involved in the present study are situated within a large London borough. According to School Census data (January 2014), the population of government maintained schools in the borough is ethnically diverse; with 83% of pupils classified as being of minority ethnic origin. 83.6% of primary school pupils (compared to 28.5% nationally) and 80.8% of high school pupils (compared to 24.2% nationally) are from an ethnic minority. 30.2% of pupils are White, 28.8% Asian or Asian British, 17.8% Black or Black British, 8.3% from mixed or dual backgrounds and 13.9% of Other Ethnic Heritage. The proportion from minority ethnic origin ranges from 49% to 100% among primary schools. According to the January 2014 School Census, there were 35.2% of pupils in primary schools whose first language was English. Pupils at schools in the borough speak over 100 different languages and the 10 most common languages spoken are: English, Somali, Panjabi, Polish, Urdu, Arabic, Tamil, Persian/Farsi, Gujarati and Pashto/Pakhto.

School A

School A is a two-form entry mainstream primary school that is based in an area with the highest proportion of deprived households in the borough (2011 Census). The proportion of people who cannot speak English proficiently or at all in the community that School A serves is significantly higher than the national average, at over 15%. Pupils are from a wide range of ethnic backgrounds, with the majority being of Asian heritage. The proportion of pupils who speak English as an additional language is much higher than average. Most have little knowledge of English when they join the school. In 2013, the school was graded as “Good” by Ofsted.

School B

School B is a three-form entry mainstream primary school that is located in an area of low deprivation. 87% of inhabitants are categorised within the lower to upper middle class social grade (2011 Census). Approximately 50% of pupils in this school are from ethnic minority groups, with the other 50% being White British. The number of students speaking English as an additional language is in line with the national average. The school was graded as “Good” during the most

recent Ofsted inspection (2012).

3.4 Participants

3.4.1 Purposive sampling

This sampling method was intended to mimic real world procedures whereby schools identify children's needs according to the setting's assessment and monitoring policy. It was also deemed the most appropriate manner of selection in fulfilling the dual role of Trainee Educational Psychologist and researcher at both schools. Exploring the feasibility of this approach is also useful with regard to implications for future project work in schools as an Educational Psychologist. A waiting control group was planned for in both schools, however due to time and practical constraints this was not possible. As indicated by the technical manuals: British Ability Scales, 3rd Edition (BAS3; Elliot & Smith, 2011) and York Assessment of Reading Comprehension (YARC; Snowling et al., 2009), quantitative measures required a period of six months between pre- and post-intervention testing to prevent practise effects. In line with this waiting period and in consideration of school holidays, it was not feasible to complete all assessments and a second cycle of RT within the available time.

3.4.2 Inclusion criteria

When considering potential participants, it was deemed appropriate to consider teachers' views due to their knowledge of a child's vocabulary skills. Therefore, in addition to perusing year group data and pupil progress information, teachers were asked to suggest students that may benefit from a vocabulary intervention. Research indicates that an average of six to eight years of formal schooling is required for pupils who speak English as Additional Language (EAL) to develop proficiency in academic English (Demie, 2012). However, due to the higher percentage of pupils newly arrived to the U.K. in school A this could not be guaranteed. To compensate for this, the initial quantitative measures were used as a screening measure. If participants could access the content of these assessments they were included in the current research. The finalised inclusion criteria may be seen below:

- ✓ National Curriculum year groups 4 to 6;
- ✓ children performing just below national expectations in reading (working at the

national curriculum year group below their chronological school year);

- ✓ pupils highlighted in school data as either not making progress or slow progress in reading;
- ✓ class teacher concerned about vocabulary skills;
- ✓ English as first or additional language;
- ✓ Can access and complete pre-intervention quantitative measures.

3.4.3 Excluded participants

Following consultation and initial assessment, two pupils were removed from School A as they did not access the content of the pre-intervention quantitative measures. One pupil with diagnosed Attention Deficit Hyperactivity Disorder did not attend to or attempt to answer questions and chose to talk about unrelated topics. Another student, with a diagnosis of Autism Spectrum Disorder experienced difficulty when asked questions about the beginner text passage of the YARC and did not achieve a comprehension score. A bespoke programme of support was put in place for these pupils. Circumstantial factors, such as changes in grouping following pupil progress meetings, resulted in the inadvertent removal of four participants from Reciprocal Teaching groups in school A. In addition, one pupil left School A to attend another setting. In total, seven pupils were excluded from the research, leaving 22 participants.

3.4.4 Participants

Children

Information for each of the participating children regarding ethnicity, reason for teacher referral and inclusion on the SEN register is provided in Appendix C.

Table 1 summarises key participant characteristics and performance on pre-intervention vocabulary and reading comprehension tests. Detailed information regarding these standardised tests follows in this chapter and analyses are documented in the Results chapter.

Of the total participants (*N*=22), 11 were females and 11 males. Nine spoke English as their first language and 13 spoke English as an additional (EAL). Out of the planned 25 Reciprocal Teaching sessions, between 6 and 10 sessions took place due to school organisational constraints.

Table 1. Children's characteristics and pre-test mean standard scores for vocabulary and reading comprehension

School	*NC Year Group*	*Mean age (years: months)*	*Number of RT sessions received*	*BAS3 Verbal Similarities mean*	*BAS3 Word Definitions mean*	*YARC Reading Comprehension mean*
School A	Year 6 (*n*=7)	10:09	6	72.29	81.43	84.86
	Year 5 (*n*=5)	10:00	10	72.80	80.40	82.80
School B	Year 5 (*n*=6)	9:10	10	79.00	80.83	90.17
	Year 4 (*n*=4)	8:09	8	85.00	78.00	91.75

Adults

Table 2 summarises key characteristics regarding the adults involved in delivering the RT intervention. A total of four school staff members led the RT sessions (two Teaching Assistants from School A and one Teacher and one Teaching Assistant from School B).

Table 2. Characteristics of adult participants responsible for delivery of RT

School	*Role*	*Age*	*Gender*	*Qualifications*	*Years of experience*
School A	Teaching Assistant (Year 6)	56 years	F	Teaching Assistant Level 3 Certificate	18
	Teaching Assistant (Year 5)	29 years	F	Teaching Assistant Level 3 Certificate	9
School B	Teaching Assistant (Year 5)	35 years	F	Teaching Assistant Level 3 Certificate	7
	Teacher (Year 4)	27 years	M	Postgraduate Certificate in Education (PGCE)	5

3.5 Staff training

Initially, the researcher delivered a 1.5 hours RT training session to the Educational Psychologists (EPs) at the Educational Psychology Service (EPS) in which they are based as a Trainee as part of the Continuing Professional Development (CPD) agenda. Feedback provided by the EPs (such as including a

video clip) was acted upon in preparation for presentation to school staff. The PowerPoint presentation used to train staff can be seen in Appendix G. SENCos were asked to schedule an hour for training, however half an hour was provided in both schools during lunch time.

As part of the training, adults received a pack including: an article regarding practical RT recommendations (Stricklin, 2011), an example of a session plan, assessment and monitoring matrix (see Appendix D), posters and bookmarks (all taken from or adapted from Oczkus, 2010) and a selection of useful links and resources. School senior leadership teams were encouraged to purchase a text (Oczkus, 2010) containing many useful suggestions and problem-shooting options associated with implementing RT. All staff were asked to complete a training evaluation form, which is used within the EPS. Both schools returned their feedback questionnaires and a summary of responses can be seen in Appendix H. Due to the confidence levels identified by staff in School A and School B, the researcher modelled RT sessions and provided ongoing support throughout the intervention with the aim of increasing adults' knowledge, understanding and confidence.

3.6 Text selection

It was communicated with staff that teachers would select texts for the RT groups based on their knowledge of school resources and understanding of pupils' reading attainment. This was deemed appropriate as teachers in both schools were required to select texts for guided reading groups weekly, therefore RT texts could be chosen simultaneously.

The researcher discussed the use of stimulating texts with School A and School B SENCos. It was agreed that SENCos would liaise with English subject leaders to ensure that appropriate material existed within school resource collections or that schemes (e.g. library lending services) could be accessed to ensure the use of engaging material.

3.7 Introducing Reciprocal Teaching

Participants were organised into groups of 4 to 6 by their teachers. Group rules were contracted and agreed with pupils during the initial session led by the researcher. These rules were written up on a whiteboard to refer back to during

discussion. An initial session was led by the researcher at school A and B. An adaptation of the script within Appendix A of Palincsar, David and Brown's RT manual was used to introduce strategies (see Appendix E), along with posters, bookmarks and physical props (a magnifying glass for clarify, microphone for question, pointer for summarise and a crystal ball for predict). Following the initial session carried out by the researcher, 24 RT sessions (four of explicit strategy teaching, 20 practise and application) were planned to take place over a period of 12 weeks (2 sessions per week) as per the RT evidence base (Palincsar, David & Brown, 1989).

3.7.1 Procedure and key points

- Adult to begin each session by reviewing the four strategies;
- Adult to lead and model through thinking aloud;
- Approach this paragraph by paragraph until the children are able to use the strategies flexibly and in an order that is appropriate to the text;
- Students' needs are the ultimate guide in choosing order of strategies
- After the 4 initial sessions are complete, a discussion leader is selected at the beginning of each session;
- Over time, the teacher releases the role of RT expert and allows students to prompt each other to implement strategies and to encourage full participation from all;
- The dialogic nature of RT enables teachers to access students' thought processes as they discuss their understanding of the text

3.8 RT sessions

Following observation of the researcher engaging in the initial session, it was communicated that teaching staff would plan RT sessions as part of their existing guided reading planning time. Along with the resource pack prepared for staff, the researcher shared two texts containing a range of lesson plans and creative ideas (Oczkus, 2009; Oczkus, 2010). It was suggested that these books were purchased by the school as the photocopiable structures could be applied to any reading material (e.g. Oczkus, 2010, p.154). Using these resources would enable minimal planning as session structure was provided.

3.9 Early challenges to implementation

3.9.1 Fidelity measures

Staff at both schools did not consent to audio recordings or observations of RT sessions, therefore adults were asked to observe the children and annotate the RT assessment matrix (Appendix D) during or after RT sessions to monitor qualitative changes in dialogue. However, staff stated that there was not enough time to complete observations and annotations in addition to existing responsibilities in school. Due to such challenges, fidelity measures consisted of the guidance provided in the resource packs and training session. Monitoring consisted of informal conversations and meetings between the researcher and school staff. Discussions on these occasions indicated that adults attempted to deliver RT as intended and asked questions for clarification. Aspects raised included the amount of text to read before engaging in group dialogue and the extent of adult support to be provided when children experienced uncertainty. Queries were addressed through consultation with the researcher and further support regarding key RT concepts (Cognitive Apprenticeship: Collins et al., 1989; scaffolding: Wood, Bruner, & Ross, 1976; the Zone of Proximal Development: Vygotsky, 1980 and Proleptic Teaching: Stone & Wertsch, 1984).

3.9.2 School B concerns and relationship dynamics

Four weeks after the RT training, Year 5 teachers in school B raised concerns as they felt that it was not possible to deliver two RT sessions per week due to staffing constraints and it was perceived that the RT approach negated advice given by a Speech and Language Therapist (SALT) at the school. The researcher discussed this with the SALT, who shared that RT complemented their guidance and advice. Following further consultation with teachers, the SENCo and the Senior Leadership Team, this misconception was addressed and it was agreed that the researcher would lead additional sessions to compensate for teaching assistant time away from the classroom. In total, the researcher led five sessions at School B, including the initial introductory lesson.

In addition to challenges regarding the management of the RT intervention, systemic issues at School B, such as conflict between the management team and teaching staff, impacted upon the relationship between the researcher and adults

involved. In accordance with structures in place at School B, the SENCo acted as the central point of communication between the school leadership team, researcher and staff, meaning that messages were conveyed indirectly and therefore there was limited opportunity to build rapport. This lack of access during the preparation phase and throughout the RT intervention hampered the researcher's ability to develop a trusting relationship with staff. Rather than staff feeling empowered to carry out the RT approach, they were directed by the school leadership team. It is possible that the researcher was viewed by staff as colluding with the management team and as adding to their work load pressures.

Over the course of this study, the use of a solution-focused approach and consultation skills enabled the researcher to repair the relationship with staff, however challenges to building rapport with practitioners in School B impacted upon the implementation of the RT intervention and is therefore important to acknowledge.

3.10 Quantitative data collection

3.10.1 Vocabulary

The British Ability Scales: Third Edition (BAS3: Elliott, 2011) was used to assess expressive and receptive vocabulary as well as single word reading. Three subtests were completed: Word Definitions, Verbal Similarities and Word Reading. Word Definitions involves the child defining words that are presented and primarily measures expressive language and vocabulary knowledge. This task also involves retrieval from long-term memory and is influenced by a child's general knowledge. The Verbal Similarities subtest scores reflect the child's levels of expressive language, particularly with regard to their ability to relate words to superordinate categories and vocabulary knowledge. Working Memory can influence performance on this subtest as the child is required to hold three words in mind. Word Reading involves reading single words and therefore assesses decoding and sight-word reading skills. Standard scores were recorded pre- and post-intervention. Scores have a mean of 100 and a standard deviation of 15.

The BAS3 is standardised on a large UK sample (*N*= 1480) and demonstrates robust reliability and validity. Reliability coefficients for BAS3 subtests used in the

current research all exceed 0.70. Standardisation took place between 2010 and 2011 to account for changes in population norms (Elliott, 2011) and ethnic group ratios within the UK validation sample reflected the 2001 UK Census data. Of relevance to the current study, it is highlighted that lack of familiarity with item contexts (e.g. the vocabulary subtests) or test items that comprise of items not applicable to the cultural background of the child could lead to invalid results. In this most recent edition of the BAS3, the previous BAS2 scales were developed with the aim to minimise cultural bias, however the authors emphasise the importance of considering items that may be unfairly demanding for children or young people from a minority culture. Two participants in the present study moved to the UK within the last three years, therefore this was considered when analysing results.

3.10.2 Reading comprehension, reading rate and accuracy

The York Assessment of Reading for Comprehension, Primary (YARC, Snowling et al., 2009) was used to determine pre- and post-intervention levels of reading comprehension. It was selected due to the more recent normative data collection (in 2009) than other reading assessments considered. The YARC consists of two parallel forms (A and B), which allow for retesting within a short period of time (in this case, six months).

Participants complete a single word reading test to ascertain the reading level of the first passage. Reading passage levels are broadly aligned with previous National Curriculum levels. Pupils read two passages under timed conditions and then respond to comprehension questions. Questions are classified under the following categories: cohesive device, knowledge-based inference, elaborative inference, evaluative inference, literal information, vocabulary dependent and logical reasoning. Standard scores were recorded pre- and post-intervention. Scores have a mean of 100 and a standard deviation of 15.

The YARC standardisation sample consisted of 1376 UK pupils (Snowling et al., 2009). Overall, 14.02% of the sample was known to have English as an additional language. Reliability for Reading Accuracy and Reading Rate is good to excellent (Chronbach's alpha= 0.75-0.95). The reliability of passages A and B for each level ranges from poor to good (Chronbach's alpha = 0.48 – 0.77). Generally, 0.70 and above is considered 'acceptable' in research (Field, 2013),

although Kline (2000) acknowledges that lower values are expected when measuring multifaceted constructs. This reflects the complexity acknowledged by other researchers in measuring reading comprehension (Klinger, 2004).

3.10.3 Effect size

As recommended by the American Psychological Association (Fidler, 2010), effect sizes were calculated for the vocabulary and reading measures. Brooks (2013) comments that the standardisation sample of a standardised test acts as an unseen control group. Effect sizes below 0.20 are deemed to be of little educational significance, those between 0.20 and 0.50 are small, those within the range of 0.50 to 0.80 are useful and effect sizes exceeding 0.80 are substantial (Brooks, 2016, p.294).

3.11 Quantitative data analysis

In order to answer research questions, statistical analyses were conducted using the Statistical Package for the Social Sciences (SPSS 24; IBM). Parametric tests such as these are potentially more powerful in identifying difference between scores than non-parametric techniques (Pallant, 2010) but certain assumptions of the data are made. These include the use of random sampling, large enough sample size, measurements are independent (not influenced by other factors, such as interaction in a group setting), data are normally distributed and the variance within the sample population is homogenous. Some aspects of the current research violate these assumptions, such as sampling method (purposive), sample size (below 30) and the small group context of the RT intervention. However, initial Tests of Normality (see Appendix I) showed that only the BAS3 Verbal Similarities subtest demonstrated non-normality. As this indicated that the remaining data were distributed normally, parametric approaches were selected to analyse data. Where Levene's test showed unequal variance across groups, non-parametric techniques were applied. Full analysis is discussed in detail within the results chapter.

3.12 Qualitative data collection and analysis

As Moss (1994, p.10) states, a purely psychometric approach:

> "*silences the voices of those who are most knowledgeable about the*

context and most directly affected by the results."

Therefore, semi-structured interview questions (see Appendix K) aimed to facilitate participants' sharing of their experiences and to provide supplementary contextual information alongside standardised measures used. Semi-structured interviews were carried out with groups of children, rather than individuals to provide a platform for rich discussion and to lessen anxiety experienced by participants. As adults did not consent to being recorded, answers to questions were typed onto a document and emailed to the researcher via EGRESS (secure data transfer software). Interview schedules were developed for adults and children as part of data triangulation (enriching understanding through gathering different perspectives). The initial step in developing interview questions involved consideration of the information that was required to address research questions and then open-ended questions were developed that aimed to elicit information without constraining or leading participants' responses e.g. to determine child participants' views on Reciprocal Teaching, they were asked, "tell me about Reciprocal Teaching" rather than "what did you like about Reciprocal Teaching?"

A proportion of questions aimed to gather information regarding particular aspects: both adults and children were asked about their views of the Reciprocal Teaching approach, changes noted regarding children's presentation in the classroom and any improvements that could be made in implementing Reciprocal Teaching. It was intended that data gathered from these questions would contribute to the overarching research question regarding the effectiveness of RT, as well as addressing participants' experiences and facilitators and barriers to RT implementation. Further questions explored enjoyment of RT (child participants' interview schedule) and the process of introducing RT in school (adult participants' interview schedule). Interview schedules were organised to progress from general to more specific questions to enable participants to relax into discussion and to gather required information.

With regard to threats to validity, the extent to which a data collection technique measures what it intends to (Mertens, 2010), it is possible that interview questions did not address the full scope of the aspects explored. However, three colleagues contributed to inter-rater reliability procedures and alterations to interview questions were made to ensure that information gathered was

representative of the elements sought. As it was not possible to carry out observations in either school, participants' comments could not be corroborated through other qualitative measures, which is a further threat to validity. When conducting interviews, the involvement of the researcher as interviewer posed as both advantage and disadvantage. The researcher may have emitted unconscious cues or signals to indicate preferred responses or children may have answered in anticipation of the researcher's preferences. However, open-ended questions were used to counter this possibility in providing participants with the opportunity to discuss ideas at length, with minimal prompting. In addition, ongoing involvement with the child participants throughout the study enabled the researcher to build rapport with pupils, meaning that they presented as relaxed and open when sharing views during interviews. Furthermore, the trusting and honest relationship that developed over time between the researcher and children meant that it was possible to check out the meaning of children's comments and to reassure pupils that they could seek clarification if questions were not understood. Despite this and the use of simple language within questions, it is possible that the child participants were not able to understand what was asked of them or to articulate thoughts due to their difficulties with vocabulary and therefore possible related expressive language needs. However, carrying out group interviews with the children meant that pupils could build upon each other's answers and glean further understanding through discussion.

As adults typed responses to questions, a possible threat to validity involves the lack of opportunity to clarify comments made and to probe further. It may be that in a face-to-face interview, adult participants would have expanded their responses and provided greater insight into their experiences and views. However, the chance to answer questions in their own time may have provided adult participants with increased reflection time, without being influenced by the presence of the researcher.

Interview recordings and typed responses were transcribed and analysed using thematic analysis. NVivo software (Version 11: QSR International) facilitated organisation and navigation of material as well as ensuring data protection. To address descriptive validity, the accuracy and precision of a researcher's account of events and behaviours (Maxwell, 1992), interviews were listened to repeatedly

during transcription by the researcher and revisited during the analysis phase to ensure that participants' meanings were captured accurately. Analysis was conducted according to Braun and Clarke's (2006) stages to avoid an 'anything goes' approach (Antaki, Billig, Edwards, & Potter, 2002), which has been a criticism of qualitative research. This iterative process involved revisiting stages and amending themes repeatedly. An inductive approach was adopted to enable development of themes that were guided by participants' views, rather than existing theories or research. However, the researcher acknowledges the influence of their perspective as an embedded member of this study and the impact that prior reading may have had on interpretation. The majority of the literature review was undertaken following thematic analysis to reduce this effect. An account of the thematic analysis utilising Braun and Clarke's (2006) stages follows.

Phase one (familiarising self with data)

Interview data were transcribed by the researcher and inputted into NVivo, along with typed comments received by adults via secure email. Data derived from adults and children were analysed together to enable identification of possible similar views and as part of triangulating information. Notes were made as comments were read and re-read to record initial ideas. Initial ideas regarding adult participants included adult competence, barriers and facilitators to implementation, cognitive apprenticeship as well as expectations and organisation. Initial ideas related to child participants included: changed approach, thinking skills, confidence, grouping, metacognition and pupil engagement. Timing and resources were recorded for both adults and children.

Phase two (generating initial codes)

During this phase, text was highlighted and annotated across the data set to identify possible repeating patterns. For example, timing was raised by both children (missed lessons) and adults (timetabling difficulties). Within NVivo, codes were grouped and re-grouped as part of the iterative checking and editing process. For example, organisation, grouping, expectations, monitoring, resources, timing, facilitators and barriers were placed together under one category.

Phase three (searching for themes)

Following colour coding by highlighting text and grouping extracts according to colours, potential themes were developed. This process was data-driven, rather than coded around research questions to ensure that the entirety of participants' perspectives was reflected in analysis. In addition to NVivo, manual approaches such as arranging highlighted printed extracts and drawing mind maps were used to facilitate this process. Thematic maps were created following perusal of examples provided by Braun and Clarke (2006) within their paper. The following candidate themes were identified: Engagement, Impact of Reciprocal Teaching, Implementing Reciprocal Teaching and Perceptions of Reciprocal Teaching.

Phase four (reviewing themes)

Within this phase, extracts were re-read multiple times to ascertain whether candidate themes were representative of the data. Through rearranging and re-labelling extracts, collapsing candidate themes into each other and removing others, the choice was made to arrange sub-themes into two main themes (Child Engagement and Implementation). Themes and subthemes were discussed with two colleagues and individuals not involved in the field of psychology or research to ensure validity and to clarify the researcher's thinking.

Phase five (defining and naming themes)

The progression of thematic maps in Appendix Q demonstrates the development of thinking over time regarding this stage. A thesaurus was used to refine theme names and data extracts were organised electronically under sub-themes to form a narrative for each theme. To capture the essence of each theme and sub-theme, short, hand-written summaries were created. Links between these summaries were then identified and connections were made to the broader, overarching narrative derived from the data.

Phase six (selecting extracts)

During this phase, electronically organised data extracts were printed, re-read and reorganised where necessary to establish a coherent and broad narrative. Key extracts were then selected based on how well they captured the essence of

a subtheme. A period of reflection followed this in relation to research questions four and five regarding participants' experiences and implications for the implementation of Reciprocal Teaching.

3.13 Ethical considerations

This study was approved by the Ethics Committee of the Institute of Education, University College London (see Appendix L) and conforms to the British Psychological Society (BPS) Code of Ethics and Conduct (BPS, 2009). Consent forms (see Appendix M) were completed by the head teacher, SENCo, teachers, teaching assistants and children at School A and School B.

3.13.1 Methods

It was anticipated that the participants' Class Teachers and Teaching Assistants would contribute to the planning and development of the Reciprocal Teaching programme, thus catering for the needs of the children. Time out of class was considered carefully to ensure that pupils did not miss crucial learning opportunities. Pupils were made aware of the involvement of the Class Teachers and Teaching Assistants, enabling additional explicit means of communication, for example; in the event that they wished to discuss an aspect of the intervention that they did not feel comfortable discussing with the researcher. Student 'voice' was sought throughout the study to encourage open and honest communication around teaching materials and approaches through verbal and written format. It was intended that plenary diaries would be completed at the end of each session by participants, with the option of an anonymous messaging and ideas system to be reviewed by the researcher so that any potential issues may be resolved, however this was not maintained by staff. Adults and children were informed of the choice to opt out at any point, without any repercussions. One aspect that was considered was the supervision of the teaching assistants or teachers by the researcher regarding use of Reciprocal Teaching materials and approaches. It is important to consider the potential power imbalance that could arise as a result of such supervision; hence a collaborative approach to working was intended from the initial point of contact with school staff.

Workload and use of a novel intervention may have resulted in feelings of anxiety and concern from school staff. Regular discussions took place with the Special

Educational Needs Coordinator (SENCo) to ensure that all staff involved were satisfied with procedures and approaches. When concerns were raised, the researcher endeavoured to explore and address challenges through consultation (Wagner, 2000).

3.13.2 Safeguarding

All adults working with participants had full DBS disclosure. When working with the small group, doors were propped open to enable constant monitoring by other school staff. Any disclosures related to child protection made by pupils were reported according to the school's safeguarding policy and procedures. The researcher requested copies of this policy along with instructions regarding whom to approach in the event of a disclosure. Such planning was necessary as a disclosure was made to the researcher. Necessary procedures and steps were followed to ensure the safety of this student.

3.13.3 Sampling

Participants were selected by school staff that knew them well, hence increasing the likelihood of the intervention being beneficial. In addition, parents were approached in a sensitive manner by adults that they were familiar with, increasing feelings of reassurance.

3.13.4 Vulnerable participants

The researcher obtained relevant information about each pupil involved and held regular discussions with the SENCo to determine whether any topics covered during sessions were of a sensitive nature to certain individuals. Adult vulnerability was also contemplated. One teacher had returned from an extended period of absence due to ill health, thus it was necessary to consider their wellbeing throughout the research. Children's wellbeing was monitored at the beginning of each session to ensure that it was suitable to continue working. This was achieved through a scaling activity in which pupils placed themselves on a scale from 0 to 10 (0 representing 'feeling bad' and 10 indicating 'feeling good') on a hand-drawn line on an individual whiteboard. If necessary, it was agreed that pupils could discuss any concerns or worries with the SENCo or researcher following RT sessions. It was unclear whether this procedure continued when other practitioners led the group.

During RT sessions, tasks were explained clearly to students to avoid confusion or uncertainty that could impact upon self-esteem. The researcher explained their role clearly when meeting participants so that they understood that certain information may not remain confidential (e.g. if a disclosure related to child protection was made).

3.13.5 Anonymity

Codes were used to refer to participants and staff to maintain complete confidentiality throughout the gathering, analysis and reporting of data. Any emails were sent via EGRESS (secure data transfer software).

3.13.6 Data storage and security

Data were stored on an encrypted USB and in password-protected folders on a laptop. The laptop requires a password in order for a user to log on and data will be kept for two years under such protection before being deleted and removed from the laptop. Names were removed from any items of work that were collected by the researcher and interview transcripts were stored and analysed electronically using NVivo software to ensure secure storage.

3.13.7 Findings

Gaining pupils' perspectives is viewed as crucial in this study in that Reciprocal Teaching will be used to influence their learning. Findings from qualitative and quantitative data will be shared in general terms with students and their parents and school staff with regard to individual progress.

Chapter 4. Results

Separate analyses of quantitative and qualitative results are presented in this chapter. Quantitative findings are discussed first, which address the following research questions:

1) Would educationally significant gains be made in vocabulary and reading comprehension as a result of this short RT intervention?
2) If educationally significant gains were observed, would these be restricted to children who received the largest number of RT sessions?
3) If educationally significant gains were observed, would these differ in magnitude for monolingual children and pupils with EAL?

Qualitative data from the interviews conducted after the RT intervention are then reported in the second main section, which were used to answer the following research questions:

4) What is the experience of the children taking part in the RT intervention?
5) What are the facilitators and barriers to implementation of the RT intervention?

In line with a mixed methods convergent approach, findings are integrated and discussed in the Discussion chapter.

For the quantitative data analyses, initial data exploration identified the presence of outliers, which were included in statistical analyses as means did not differ greatly from 5% trimmed means. Tests of normality were conducted before carrying out each analysis (results are presented in Appendix I). Non-parametric analyses were employed when cases of non-normality were detected. Tolmie, Muijs and McAteer (2011) caution that obtaining a statistically significant result does not necessarily indicate that the difference is large or important. To assess educational significance of results, it is necessary to report effect size statistics (Brooks, 2016). Effect sizes are therefore reported for each analysis.

4.1 Results from vocabulary and reading comprehension assessments

The first two sub-sections present the data for the vocabulary and reading comprehension assessments. The third sub-section covers pre- to post-

intervention differences in vocabulary and reading comprehension for children grouped according to English monolingual speakers or pupils with English an additional language (EAL).

4.1.1 Vocabulary

A summary of the standardised scores for BAS3 Verbal Similarities and Word Definitions is given in Table 3.

Table 3. BAS3 Verbal Similarities mean pre- and post-test standard scores (standard deviations are in parentheses)

	Higher RT exposure (n=11)	*Lower RT exposure (n=11)*	*Overall group (N=22)*
Pre-BAS3 Verbal Similarities	76.18 (10.815)	76.91 (11.870)	76.55 (11.087)
Post-BAS3 Verbal Similarities	81.64 (14.603)	81.27 (8.101)	81.45 (11.525)
Pre-BAS3 Word Definitions	80.64 (10.948)	80.18 (5.980)	80.41 (8.612)
Post-BAS3 Word Definitions	89.00 (14.241)	85.73 (6.769)	87.36 (11.009)

In this section, results for BAS3 Verbal Similarities and BAS3 Word Definitions will be presented for total participants and also according to exposure to RT per group. Participants who received 10 RT sessions are included within the Higher RT Exposure group and the Lower RT Exposure group is made up of participants who received 6-8 RT sessions. Data for Verbal Similarities demonstrated non-normality (please see Appendix I), therefore non-parametric analyses were conducted. Word Definitions data were distributed normally, therefore parametric approaches were conducted.

For Verbal Similarities, Wilcoxon Signed Ranks Test showed that the pre- to post-test difference for the group overall was significant: z=-2.359, p=0.018, indicating gain in scores on this assessment following RT. Results for the higher and lower RT exposure groups revealed that the pre- to post-test difference was significant for the group receiving greatest number of RT sessions: z=-1.970, p=0.049, but not for the group exposed to fewer RT sessions: z=-1.423, p=0.155.

For Word Definitions, Wilcoxon Signed Ranks Test showed that the pre- to post-test difference for the group overall was significant: z=-3.683, p<0.001, indicating gain in scores on this assessment following RT. With regard to RT exposure groups, a Wilcoxon Signed Ranks Test showed that pre- to post-test difference in BAS3 Word Definitions was significant for both the higher RT sessions group: z=-2.654, p=0.008 and for the lower RT sessions group: z=-2.604, p=0.009.

Significant gains in scores from pre-test to post-test were observed for both vocabulary assessments, however, it was important to assess the educational significance of the gains and this is reported in the next section.

Effect size

Mean standard score gains and effect sizes for the vocabulary subtests are shown in Table 4.

Table 4. Mean standard score gains and effect sizes for BAS3 Verbal Similarities and Word Definitions

	Higher RT exposure (n=11)	*Lower RT exposure (n=11)*	*Total (N=22)*
Verbal Similarities mean gain	5.45	4.36	4.91
Verbal Similarities effect size*	0.36	0.29	0.33
Word Definitions mean gain	8.36	5.54	6.95
Word Definitions effect size	0.56	0.37	0.46

*effect sizes are unreliable for non-normal data

Small effect sizes were observed for Verbal Similarities for the two groups and participants overall. However, as effect sizes are unreliable for non-normal data (Coe, 2002), Verbal Similarities effect sizes should be viewed with caution. The effect size for gains made in Word Definitions was small, as well as for children who received the lower number of RT sessions. With regard to the participants who received greatest exposure to RT, a medium, and therefore 'useful,' effect size was achieved for BAS3 Word Definitions (Brooks, 2016).

4.1.2 Reading Comprehension

This section reports pre- and post-test scores for YARC reading comprehension. Data and results of statistical analyses for YARC reading accuracy and reading rate measures are presented in Appendix O since these data were not considered as outcome measures for the RT intervention (which was developed to improve reading comprehension). Analyses indicated no significant gains in scores for either reading accuracy or reading rate. A summary of the YARC reading comprehension scores for the overall group and the higher and lower number of RT session groups separately is presented in Table 5.

Table 5. Pre- and post-test mean standard scores for YARC reading comprehension (standard deviations are in parentheses)

	Higher RT exposure (n=11)	*Lower RT exposure (n=11)*	*Total (N=22)*
Pre-YARC Reading Comprehension	86.82 (8.085)	87.36 (9.394)	87.09 (8.557)
Post-YARC Reading Comprehension	86.45 (7.738)	87.36 (7.047)	86.91 (7.237)

As data did not violate assumptions of normality, a parametric analysis of variance (ANOVA) was conducted to assess the impact of exposure to RT on YARC reading comprehension scores. In the mixed ANOVA, the between groups variable was number of sessions (10 sessions vs. 6 or 8 sessions of RT) and the within groups variable was time (pre-test vs. post-test). The result of the ANOVA revealed that the effect of number of sessions of RT was not significant, $F(1,20)=0.87$, $p=0.772$, $\eta p^2 =0.004$, the effect of time was not significant, $F(1,20)=0.006$, $p=0.941$, $\eta p^2=0.000$, and the interaction of group and time was not significant, $F(1,20)=0.006$, $p=0.941$, $\eta p^2=0.000$.

Effect size

Table 6 reports mean gains and effect size for the reading comprehension scores for the overall group and exposure to RT groups separately.

Table 6. Mean gain and effect size for YARC reading comprehension scores

	Higher RT exposure (n=11)	*Lower RT exposure (n=11)*	*Total (N=22)*
Reading Comprehension mean gain	-0.36	0	-0.18
Reading Comprehension effect size	-0.02	Effect size could not be calculated	-0.01

Effect sizes achieved for reading comprehension were not of educational significance for the group overall or for groups according to RT exposure (Brooks, 2016).

4.1.3 Language group comparisons

In this section, the results for the vocabulary and reading comprehension assessments are reported for the EAL and monolingual children separately in order to address Research Question 3 'If educationally significant gains were observed, would these differ in magnitude for monolingual children and pupils with EAL?'. There were no significant differences between EAL and monolingual participants for vocabulary measures at pre- or post-test (see Appendix J).

Vocabulary

Table 7 summarises pre- and post-test mean standard scores for vocabulary measures according to language group.

Table 7. Pre- to post-intervention mean standard scores for vocabulary according to language group (standard deviations are in parentheses)

	Monolingual group	*EAL group*
Pre-BAS3 Verbal Similarities	81.90 (12.991)	72.08 (6.986)
Post-BAS3 Verbal Similarities	85.40 (14.834)	78.17 (6.900)
Pre-BAS3 Word Definitions	81.30 (9.967)	79.67 (7.679)
Post-BAS3 Word Definitions	89.80 (14.627)	85.33 (6.814)

As data for Verbal Similarities were non-normally distributed, a non-parametric analysis was conducted. Wilcoxon Signed Ranks Test indicated a non-significant effect for the monolingual group: z=-1.255, p=0.209 and a significant effect for the EAL group: z=-1.989, p=0.047. Word Definitions demonstrated normality, therefore parametric analyses were carried out. A paired sample t-test identified significant differences for the monolingual group: $t(9)=-3.206$, $p=0.011$, and for the EAL group: $t(11)=-4.112$, $p=0.002$.

Effect size

Table 8 reports mean gains and effect size for the vocabulary measures according to language group.

Table 8. Mean gain and effect size for vocabulary scores according to language group

	*BAS3 Verbal Similarities**		*BAS3 Word Definitions*	
Language	English	EAL	English	EAL
Mean pre- to post-test gain	3.50	6.08	8.50	5.60
Mean effect size	0.23	0.41	0.57	0.38

*effect sizes are unreliable for non-normal data

Small effect sizes were achieved for BAS3 Word Definitions for children with EAL. A medium, and therefore useful, effect size was observed in BAS3 Word Definitions for the monolingual group.

Reading Comprehension

As reading comprehension data were normally distributed, Bonferroni adjusted *t*-tests were conducted to identify differences between the EAL and monolingual children. A significant difference was found between monolingual and EAL participants for reading comprehension at pre-test: $t(20)=2.922$, $p=0.008$ but not at post-test: $t(20)=-0.295$, $p=0.771$. Table 9 summarises pre- to post-intervention mean standard scores for reading comprehension according to participants' first language.

Table 9. Pre- to post-intervention mean standard scores for reading comprehension according to language group (standard deviations are in parentheses)

	Monolingual group	*EAL group*
Pre-YARC Reading Comprehension	92.10 (6.999)	82.92 (7.609)
Post-YARC Reading Comprehension	86.40 (6.637)	87.33 (7.970)

YARC Reading Comprehension pre- to post-test standard scores were analysed using a parametric approach as data were normally distributed. A paired sample t-test demonstrated that differences were not significant for Reading Comprehension for the monolingual group: $t(9)=2.083$, $p=0.067$ or the EAL group: $t(11)=-1.384$, $p=0.194$.

Effect size

Table 10 reports mean gains and effect size for reading comprehension according to language group.

Table 10. Comparison of mean pre- to post-intervention standard score gains and effect sizes for reading comprehension according to language group

	YARC Reading Comprehension	
Language	English	EAL
Mean pre- to post-test gain	-5.7	4.41
Mean effect size	-0.38	0.29

A small effect size was observed for pupils with EAL with regard to reading comprehension.

4.2 Summary of quantitative findings

Vocabulary

For Verbal Similarities, significant differences were found for the group overall and for the group that received the highest exposure to RT. With regard to Word Definitions, significant differences were observed for the group overall. Small effect sizes were observed for Verbal Similarities for the two RT exposure groups and participants overall, however these should be viewed with caution due to the unreliability of effect sizes generated from non-normal data. The overall effect size for gains made in Word Definitions was small, as well as for children who received the lower number of RT sessions. A medium, and therefore 'useful,' effect size was achieved for BAS3 Word Definitions for participants who received

greatest exposure to RT. These findings indicate that vocabulary gains were made following the RT intervention.

Reading comprehension

Differences in pre- to post-intervention were not significant for the group overall or according to RT exposure. Effect sizes achieved were of no educational significance (Brooks, 2016). Results demonstrate that gains in reading comprehension were not achieved following the RT intervention.

Language groups

Differences in Word Definitions were significant for both language groups. Small effect sizes were achieved for Verbal Similarities and Word Definitions for both language groups, however a medium, and therefore 'useful,' effect size was achieved for BAS3 Word Definitions for monolingual participants. For reading comprehension, differences pre- to post-intervention were not significant for monolingual or EAL participants and effect sizes achieved were of no educational significance (Brooks, 2016).

4.3 Qualitative data analysis

Following the RT intervention, pupils participated in group semi-structured interviews and adults completed written responses to questions due to not consenting to being recorded. Interviews and responses were transcribed (please see an example in Appendix P) and analysed as outlined in the Methods section. Development of themes is represented visually in Appendix Q. Following thematic analysis, two main themes were identified: Child Engagement and Implementation, along with additional subthemes. Figure 3 indicates the hierarchy and relationship between themes and subthemes. In the sections that follow, quotations from participant manuscripts are incorporated within discussion of themes and subthemes to provide a rich overview.

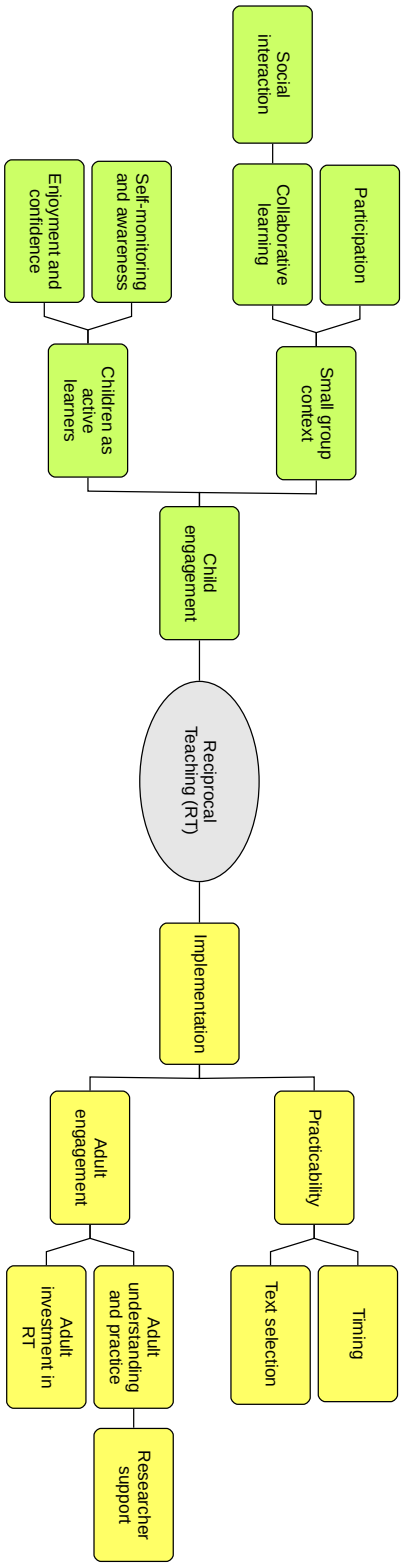

Figure 3. Final Thematic Map

4.3.1 Theme 1. Child engagement

Within this theme, respondents identified changes to pupils' learning and affective state, which were facilitated by the small group context and RT approach. As analysis was inductive, aspects were identified that were not anticipated such as participants' views regarding interaction with one another and ideas for future group organisation.

Small group context

This sub-theme demonstrates the value of the small group context in promoting peer interaction and providing a learning experience that is distinct from the whole-class experience.

Participation

Pupils highlighted the reciprocal nature of interaction within sessions and recognised the expectation that all children would engage in discussion:

"We participated kind of like all of us." (Y5 pupil, School B)

"It was like everybody could read it." (Y5 pupil, School A)

"It was like turns." (Y5 pupil, School A)

The dialogic approach to teaching and learning in RT sessions seemed to appeal to participants. Pupils commented on the contrast between the small group context and the classroom environment with regard to contribution and interruption:

"I would prefer doing it in a smaller group like this because then um it wouldn't be so like it wouldn't be so loud maybe and not so many people go oh oh oh on top of other people." (Y4 pupil, School B)

Working as part of a small group appeared to benefit participants who lacked confidence and those who are less visible within a large class of students. This was noted by adults working with the children:

"The adult led, small group intervention that is RT gives children a 'safe' environment to make predictions and ask questions – particularly the quieter

members of a large mainstream class." (SENCo, School B)

A sense of competing to contribute in the classroom was raised, along with waiting for opportunities to speak. This appeared to impact upon pupils' willingness to share thoughts and ideas:

"There's a small group so you can go 'round everyone and then if I don't really care if I'm last because you can still everyone says but if it's a class, if it's a class then it's everybody going around then I have to be last as usual."
(Y5 pupil, School B)

Although most children shared their preference for small group work, two pupils remained self-conscious during sessions.

"I'm just shy when I read out in groups and I'm really not shy when I'm reading by myself with one person." (Y4 pupil, School B)

"My friend V we tried to make her read every single day but she said no I don't wanna read and it really made me not feel so good because it's like I was reading; V was sat there quiet." (Y5 pupil, School A)

When asked why she thought this was, the pupil's friend added:

"I think she said she doesn't like reading because maybe she may get stuck on words and thinks we might laugh at her because once that's what happened and she's a shy girl. She only read once and she read one word." (Y5 pupil, School A)

Despite anxiety concerning reading aloud, the child in question participated in discussion involving the four RT strategies:

"She wants to question and everything but she doesn't want to read- she does everything else but she doesn't want to read." (Y5 pupil, School A)

It appears that the participant perceived discussion as being safer than reading aloud, which may be a helpful point to consider when working with pupils who have similar concerns. This example highlights the importance of developing an inclusive ethos in all learning contexts within school and of acknowledging how children's self-perceptions and underlying feelings may influence levels of participation.

Collaborative learning

Children talked about the sharing of ideas and working together as a positive aspect of the RT sessions:

"I quite enjoyed when we were reading as a group and then we collaborated when someone wanted to know something we started collaborating and like thinking about the answer of the question." (Y5 pupil, School B)

"As a group when we're reading a book, quite interesting like we have all our predictions and stuff." (Y5 pupil, School B)

A number of participants discussed the opportunity to learn from others and described this experience as interesting and enjoyable:

"I could get new ideas from other people so you learn something new from the other people- they learn from us; we learn from them." (Y5 pupil, School A)

"When you question other people and they say the answers and sometimes they're exciting so you want to read more." (Y5 pupil, School A)

"It's interesting when you hear somebody else say something they have in mind." (Y5 pupil, School A)

Not only was learning mentioned, but the impact this had on the affective state of children and their levels of engagement were closely linked. One adult, noted the difference in a child's presentation:

"M was destructive in other groups but good in this one." (Y6 TA, School A)

Some pupils felt that RT supported others' learning rather than their own:

"It doesn't really help you it helps other people so like question well clarify is literally like clarifying someone else yeah like it's not really doing much like I didn't really use it, it can help with people but it won't help some people." (Y5 pupil, School B)

"It will help people if you're reading and then you you when you're at the end of it you can say you can say the question or something, can ask a question." (Y5 pupil, School B)

Participants didn't recognise the benefit of explaining to others in strengthening their own learning, however did acknowledge the value of receiving others' support. Pupils shared ideas regarding the organisation of groups:

"I think like it should be just get like three groups or something but with mixed people so like two from the higher group, two from the low group and two from middle…so a middle group person would say oh I'm struggling as well and like they would help you more and then you would go higher coz from other people in another group helping you to go higher." (Y5 pupil, School B)

This reflects the awareness children have of ability grouping in schools and possibly where they rank within this system. Schools often seat pupils by ability, especially in upper Key Stage Two and secondary school (Ireson & Hallam, 2001). Creating opportunities for students to learn in heterogeneous groups may increase engagement and facilitate richer discussion.

Social interaction

Participants emphasised their enjoyment in working with friends, which was not anticipated as being of importance when devising groups for the current research:

"I enjoyed being with my friends." (Y6 pupil, School A)

"I enjoyed it 'cos um I got to read with my friends from my class and we got to like read together." (Y4 pupil, School B)

"It's fun to work with other people, yeah and it's fun to work with C because he's like one of my best friends." (Y4 pupil, School B)

This is interesting in light of discussions with staff regarding group dynamics as it was often anticipated that certain pupils wouldn't work well with others. Adults were surprised by children's engagement in group discussion and the manner in which they supported one another.

Children as active learners

This sub-theme explores the impact of RT on students' motivation and metacognition.

Enjoyment and confidence

Both adults and children recognised the enjoyment experienced by most participants. Engaging with texts in a novel manner seemed to interest children:

"I enjoyed everything." (Y5 pupil, School B)

"Children were engaged and enjoyed sessions, even children who are reluctant or easily distracted." (Y6 Teachers, School A)

"Children enjoyed it and the majority of them benefitted a lot from these sessions." (Y5 TA, School A)

"It makes reading sessions more interesting for children." (Y5 TA, School A)

Students discussed feeling excited and alluded to increased curiosity and imagination:

"I like predict because you like can guess what happens next and you like feel very excited." (Y5 pupil, School A)

"I liked to predict because it makes my mind go in more adventures." (Y5 pupil, School A)

A sense of motivation and wanting to learn was apparent from pupils' comments. During pre-test reading measures, it was observed that some children adopted a passive approach and did not comment on or reflect upon unknown words until questioned directly. Following the RT intervention, students began to recognise their active role in learning and the enjoyment that can be derived from this:

"I like to um clarify the words and what they mean because I want to know what the words mean and I wanna get interested." (Y4 pupil, School B)

"I like predicting because I like like looking at things and thinking what's gonna happen I just like doing it for some reason (Y5 pupil, School B)

In addition to enjoyment, adults noted an increase in confidence following the RT intervention:

"More confidence in reading." (Y5 TA, School A)

“Some improved confidence.” (Y5 Teachers, School B)

“They were enthusiastic and confident in discussions. One girl in particular kept asking me when they were going to be having their reading session again.” (SENCo, School B)

Children also discussed an increase in confidence:

“It’s helpful with questions and it will probably give you more confidence than being scared.” (Y5 pupil, School B)

Whereas other pupils referred to their general lack of confidence:

“I don’t really have much confidence.” (Y5 pupil, School B)

“I’m a person who doesn’t put my hand up.” (Y5 pupil, School B)

The researcher discussed these comments with the SENCo in School B and the possible impact on pupils’ learning and involvement in the classroom. Following this discussion one of the students received a therapeutic intervention to address low self-esteem.

Self-monitoring and awareness

Participants recognised an increase in visualisation as well as greater awareness of thought processes:

“I really like to use those four strategies because they’re important to any child who reads; it’s what you want and they make your mind like imagine more and read more.” (Y5 pupil, School A)

“It really helps because in like summary when you do it it’s like you imagine things and it’s like you start picturing things in your mind.” (Y5 pupil, School A)

“Predicting; well when a bit when it said, what will happen if he jumps off the cliff it made me predict more about if he will jump off and what will happen.” (Y6 pupil, School A)

Pupils not only discussed the impact of the four RT strategies but noticed a change in the way they responded to text. Reading was viewed as an active

process, rather than a task to complete:

"Spotting out things in a book that you normally really wouldn't spot out- you would normally just read the whole book and then you're done, it's kind of like just spotting out things and clues in the book." (Y5 pupil, School B)

Self-monitoring of understanding enabled pupils to comprehend text and to build upon existing knowledge:

"It made me understand more, like if you're reading a book and sometimes I don't understand but now I do because of the four strategies." (Y6 pupil, School A)

"I like question because you get to find out more about the subject." (Y6 pupil, School A)

Some participants mentioned memory and the impact that RT sessions had on their ability to recall information. It is possible that this approach was beneficial for pupils who had been identified as having Working Memory needs:

"It [RT] helps me remember what I've read and it helps me enjoy the book." (Y4 pupil, School B)

"Yes, it's like changed like I never used to I never like remembered it I always used to get a bad score on reading comprehensions but now I'm getting really good scores." (Y4 pupil, School B)

In addition to understanding and recall, some children commented on their competence regarding the four RT strategies. During one of the initial sessions led by the researcher, one year 5 pupil (School B) stated: "This is embarrassing but I don't know how to ask a question," and required support in structuring a question for other pupils. In a subsequent session, this child explained that he had honed his questioning skills and proceeded to demonstrate. Awareness of this initial difficulty and motivation to address it meant that he actively attempted to improve and was proud of his success. This also demonstrates the importance of not presuming that children possess certain skills or knowledge. Schools staff may expect a student in year five to ask questions with ease and the pupil's awareness of this was reflected in his feelings of embarrassment.

Transferring use of the four RT strategies to other contexts was commented upon by children and adults:

"After using Reciprocal Teaching I noticed that learners transfer their learning into other contexts." (Y6 TA, School A)

"In my classroom, when I read a book at home and when I'm in the group I always think about it." (Y4 pupil, School B)

"I've already got the [strategy] bookmark to take with me to secondary school." (Y6 pupil, School A)

However, this transference was not observed during post-tests (July 2016), indicating that strategies were not fully embedded at that point. Post-intervention, it is possible that autonomy and responsibility had not shifted from adults to children. Some pupils appeared impatient when required to research a query independently:

"Yeah, um back to M's point like when you're reading and then you come across a word that like sounds like no one knows what it means and like it's quite annoying how we like we have to get a dictionary and it takes ages to look for it." (Y5 pupil, School B)

"Yeah! why can't the just teacher say um like um that's what it means like." (Y5 pupil, School B)

These comments indicate that students remained reliant on the adult as possessor and provider of knowledge, rather than adopting an autonomous approach. Some participants understood the adult's intention in shifting responsibility, yet resisted it:

"I know why, I don't know, because they want you to try and do it but I know if we can't actually do it why can't they just like say this is what it means if we're like trying to guess." (Y5 pupil, School B)

It seemed that children were unaccustomed to using their initiative and waited for permission from adults:

"Maybe we should get a dictionary out I'm not sure, it depends on what the

teacher thinks we should do so then if you tell us the point of why we should get a dictionary or if we're not allowed then yeah." (Y5 pupil, School B)

Participants in School A viewed the shifting of responsibility from adult to children in a different light:

"If someone asks a question she [Miss B] would not answer it and that's kind of fun because we kind of use our minds a little bit; thinking like what that word is." (Y5 pupil, School A)

Children in Year 5 at School B mentioned that they did not enjoy the time taken to discuss a paragraph. When working with this group, much clarification was needed, indicating that the text may have been too complex for strategy use to be fluid and natural. Pupils required a lot of prompting to attend to aspects they were unsure of as they were willing to skip parts, rather than investing time in clarifying:

"I didn't enjoy how we had to stop like midway like when we read a paragraph we would take like a really long time to just say like oh um what do you think is going to happen next or like what do you think's happening at the moment- I think we should like read on until something exciting happens, I think we should do it at the end." (Y5 pupil, School B)

"It's annoying when you're reading and then you stop and then somebody says let's talk about the book; why can't we do it when we're finished and we have a bit of time 'cos otherwise its boring!" (Y5 pupil, School B)

Perhaps altering the complexity of texts would have supported pupils in engaging with the shifting of responsibility and application of strategies. Pupils' capability may have developed over time had the planned number of sessions taken place.

4.3.2 Theme 2. Implementation

This theme explores practical aspects of implementation as well as the influence of systemic school factors and adult approach.

Practicability

Practicability is defined as 'capable of being done with the available means'

(online dictionary, 2016), which captures the essence of this sub-theme with regard to RT implementation.

Text selection

Pupils in both schools referred to the reading material used, indicating the importance of selecting engaging texts:

"Well I didn't really enjoy one of the books." (Y5 pupil, School B)

"I enjoyed the first book about the Dinosaurs because I learned new things and the second book I wasn't very satisfied because it was really boring."
(Y5 pupil, School A)

"The first book we read about Dinosaurs it was pretty boring because I read everything in there and I knew everything, the second book was kind of interesting." (Y5 pupil, School A)

Individual preference also emerged during discussion:

"Can I change the books; it's gonna be boring with four/five words in a page and a big picture, I don't like that- it's too colourful; I would just like to read a book and imagine in my head what happened so then I don't know what's going on so then if I see the pictures it's a surprise." (Y5 pupil, School A)

"It's good to have some pictures as well so you know which land it is, where you are going because I really wanna see the pictures as well because I can't imagine without the pictures." (Y5 pupil, School A)

During the initial session led by the researcher, pupils were asked to name books they liked or would like to read:

"We should all choose a book that we agree on like, like at the start do you remember we had, we wrote down some books like Tom Gates and stuff that I liked?" (Y5 pupil, School B)

Additional resources were not sourced in either school, which was discussed with both SENCos prior to implementation.

Frequency with which books were changed was also considered by pupils:

"Each time we come we swap books so we just read the start of a book, which I think we should stay on a book we should all choose a book that we agree on." (Y5 pupil, School B)

"Can we stay on the same book, you know 'cos I wanna find out, can we agree on the same books? Have a vote on them on the whiteboard or anything." (Y5 pupil, School B)

"I thought we should have stayed on one book because we would have wanted to read the ending." (Y5 pupil, School B)

One participant raised an interesting point regarding non-fiction texts:

"In the dinosaur book they said to er predict what's next so then how can I predict; it's a non-fiction book; it's not common sense; how can you predict the next thing? It may be something else- another topic, another dinosaur." (Y5 pupil, School A)

Such reflection is interesting as it indicates that the pupil analysed the relevance of the strategies used with the material she was reading, which is a key RT outcome. Eventual strategy use should be flexible and meaningful, rather than a routine that is conducted without thought.

Timing

Pupils in School B voiced concerns about missing particular lessons:

"Um, well the thing is we only get like the special yeah, the special lessons like ICT, science and history like you only get them once a week but then if like English and maths you do them literally practically every day." (Y5 pupil, School B)

"Some of them are during them so like now I'm doing science and we only get that once a week." (Y5 pupil, School B)

"Yeah we've been coming out like science and geography." (Y5 pupil, School B)

When asked to identify difficulties in implementing RT, staff at School B agreed that timetabling was problematic:

"Timetabling issues." (Y5 Teacher, School B)

"Timetabling proved particularly difficult as one of the groups (year 5) had children from 3 different classes." (SENCo, School B)

Time of year was identified as a barrier by school staff:

"Start of the year is OK to do but after April there are things like the residential, covering classes, visits, SATs. I tried though." (Y6 TA, School A)

"Some sessions but in the middle of SATs so difficult to timetable." (Y6 Teacher, School A)

"Time of year – once the TAs had been trained it was too close to SATs for Y6, so didn't have long enough with the programme." (Y6 Teacher, School A)

Lack of timing for preparation was also highlighted:

"One teacher missed the training session, others commented that although they found it useful, they needed more time to prepare or time to implement it." (SENCo, School B)

Such feedback is useful for guiding future practice when conducting research or planning to implement a novel approach in schools.

Adult engagement

Within this sub-theme, adults' comments reflect their understanding of and commitment to Reciprocal Teaching and the impact this had on practice.

Adult understanding and practice

When discussing RT practice, different accounts were shared by adults and children working together:

"Reciprocal Teaching is an instructional activity in which pupils become a teacher in a small reading session and guide the group. I modelled and then helped students to guide group discussions using four strategies (summarising, question generating, clarifying and predicting)." (Y6 TA, School A)

The description provided by the adult contains key elements of the RT approach, however children in this group (Year 6, School A) struggled to explain what RT is and required prompting to recall the four strategies. Furthermore, pupils commented on their lack of understanding:

"What you're doing right now helps me but what Miss K did didn't help me." (Y6 pupil, School A)

"I couldn't understand because she couldn't explain." (Y6 pupil, School A)

"She didn't help me properly- you help me more because she um like didn't explain it properly and she just said write it, write it, just do it." (Y6 pupil, School A)

This apparent disparity between the adult's and pupils' view may be a consequence of the small number of RT sessions carried out (6) and the subsequent lack of practise and knowledge of RT strategies or procedure. Alternatively, the TA may have perceived that children understood explanations given. This is considered further in the Discussion chapter.

Neither school facilitated observation or consented to audio recording of sessions therefore it is difficult to determine whether comments represent practice accurately. This indicates the importance of monitoring to establish whether fidelity measures are adhered to.

It appears that the RT approach diverged from staff's views and beliefs regarding teaching pedagogy as Year 5 teachers at School B felt that RT was detrimental to pupils' behaviour:

"One child was encouraged to interrupt when this is something we are trying to discourage in class." (Y5 Teacher, School B)

"Teachers commented that RT was encouraging children to call out and talk over others (which they weren't keen on) and they perceived this as a step back (with behaviour management)." (SENCo, School B)

During early RT sessions led by the researcher, group rules were contracted and implemented with children to prevent interruption and promote equal contribution

by all. Reinforcement of boundaries within the small group and whole-class context may have addressed the difficulties experienced.

In a separate meeting with the researcher in March 2016, year 5 teachers raised additional concerns that RT negated advice provided by a Speech and Language Therapist. The researcher contacted the Speech and Language Therapist, who commented that RT complemented her work and advocated its continuation.

Teachers' view of RT indicted their lack of understanding or belief in the psychology underpinning the approach:

"RT is an intervention to help lower ability children catch up with their reading." (Y5 Teacher, School B)

"Some strategies already in use in school." (Y5 Teacher, School B)

This reflects Palincsar's (2006) point regarding the strategies taking on "a life of their own." Further consideration is provided within the Discussion chapter.

Researcher support

Adults identified the following materials as being beneficial when implementing RT:

"Reciprocal Teaching resources." (Y6 TA, School A)

"Visuals (book marks with four strategies) and encouragement." (Y5 TA, School A)

The following support from the researcher was valued:

"Support and training from Sarah Relton." (Y6 Teacher, School A)

"Sarah visiting and modelling good practice." (Y5 Teacher, School B)

"EP carrying out sessions with staff being able to observe." (SENCo, School B)

Adult investment in RT

Adults' comments regarding future implementation of RT indicated their perceptions of the value of it. Those in School A adopted a solution-focused

approach and considered how to overcome difficulties encountered:

"I would like to use Reciprocal Teaching in future because four strategies used will help a learner to become an excellent reader." (Y6 TA, School A)

"It would be worth timetabling from September to see progress that children could make with more time available." (Y6 Teacher, School A)

Whereas School B staff did not view implementation of RT as feasible and did not envision employing this approach in the future:

"No because it was difficult to timetable. TAs were coming out of class quite a bit and there aren't enough TAs." (Y5 Teacher, School B)

Comments made by the SENCo indicate differences of opinion within School B:

"I can see a lot of benefits of RT; I have seen how learning to 'clarify' words or phrases has benefited children who have specific SLT [Speech and Language Therapy] targets or EAL needs. It has helped them develop their vocabulary knowledge and their research skills (using a dictionary for example)."
(SENCo, School B)

The researcher worked closely with the SENCo over time and had developed a good working relationship. The SENCo was open to considering different approaches and was equally committed to delivering measurable, evidence-based interventions. With regard to improvements and future considerations, the SENCo at School B identified the following:

"Going forward, I would be keen to see it introduced to all (KS2) classes as part of the Guided Reading programme, with opportunities for the most experienced Teaching Assistants or HLTAs to offer/extend it to a small group of children. A pre-and post-test that is quick and easy for TA/HLTAs to administer, would need to be identified to help measure the impact of the intervention."
(SENCo, School B)

It was suggested to the year 5 staff that RT could be implemented within guided reading sessions, however teachers did not feel that this was possible. Despite their misgivings, another teacher followed this suggestion:

"One class teacher [year 4] tried to incorporate it into their Guided Reading sessions and some support staff tried to continue the sessions with the small group." (SENCo, School B)

With regard to further suggestions, the SENCo commented:

"Training to the whole staff (or at least to KS2), driven by the English subject leader, with the support of Senior Leadership Team (SLT). This would then make it more transparent and manageable if it was to be offered then as an intervention. More guidance with text to use and having these before it was launched would help the staff." (SENCo, School B)

The English subject leader at School B was involved in the RT intervention as one of the year 5 teachers, however did not engage in preparation, organisation and coordination as requested. The SENCo alluded to possible reasons for this:

"Staff felt a little underprepared and perhaps slightly overwhelmed with their own workload." (SENCo, School B)

Existing pressures and other influential systemic factors within a school should therefore be carefully considered when recruiting staff to engage in research. In addition, early negotiation of the roles of adults is essential in managing expectations.

Identical RT packages (training sessions, materials and support arrangements) were delivered at both schools and staff involvement was clearly communicated, however there was some confusion amongst School B staff:

"Teaching staff were not clear on the expectations for themselves- the teachers thought the sessions were going to be taken by the EP as part of her research." (SENCo, School B)

Implementation had been carefully planned with the SENCo, who was aware of the study aims to avoid researcher bias and to replicate the reality of staff delivering interventions. The researcher hypothesised that teachers' confusion stemmed from conflicting messages delivered by the senior leadership team, which the SENCo was not part of. As a result of this confusion, it appeared that RT implementation was not regarded as a collaborative process by staff but as

something that they ‘had’ to do. The implications of this, along with other systems and processes within both schools are explored further within the discussion.

Chapter 5. Discussion

This study aimed to contribute to the small research base involving the use of Reciprocal Teaching (RT), a reading comprehension approach, in the UK (Brooks, 2016). Two areas were focused on: the outcomes for pupils with and without English as an Additional Language (EAL) and the impact of RT on children's vocabulary development in addition to reading comprehension skills. It was hoped that findings would demonstrate the value and flexibility of the RT approach in meeting the needs of pupils from diverse backgrounds within different educational settings. This chapter involves the integration of quantitative and qualitative findings to answer research questions.

5.1 RQ1: Would educationally significant gains be made in vocabulary and reading comprehension as a result of this short RT intervention?

5.1.1 Vocabulary

For participants overall, significant differences were observed from pre-to post test for Verbal Similarities and Word Definitions. Small effect sizes were achieved in both subtests, although only gains made in Word Definitions approached educational significance at 0.46 (Brooks, 2016). It is possible that the RT approach resulted in an increase in word consciousness (Lane & Allen, 2010), which may have transferred beyond the RT group context and resulted in these gains. The following comment may be indicative of this:

> *"I want to know what the words mean and I wanna get interested."*
> (Year 4 pupil)

Asking children to talk about word meanings using their own words may also have contributed to vocabulary gains, as research indicates that this is an effective approach regarding vocabulary development (Barr, Eslami & Joshi, 2012).

It appears that the Reciprocal Teaching intervention supported the vocabulary development of pupils in Key Stage Two, however additional influences may have contributed to gains made. Asking children to discuss word meanings and word categories at pre- and post-test may have increased their subsequent awareness of words and their meanings; leading to improvement in this area. Differences in teaching practice in the two schools may also have influenced

results, for example one practitioner may have dedicated more time in the classroom to vocabulary instruction than another.

5.1.2 Reading comprehension

Over half of the participants demonstrated a decrease in score on the YARC reading comprehension measure. This may have been due to the timing of post-intervention assessments, which took place at the end of the summer term when a less structured timetable was observed in both schools. Discussions were taking place regarding new teachers and classes for the following academic year, which may have resulted in distracting feelings such as excitement or anxiety. End of term celebrations were also underway, leading to a less focused response from most children. Fatigue at this point in the academic year may have influenced participants' mental effort in responding to the reading comprehension assessment, which contains more elements in comparison to the vocabulary subtests, which are relatively quick to administer. Another possibility is the observation made by Rosenshine and Meister (1994) that standardised reading comprehension tests used to evaluate the impact of RT produced less significant results than researcher-developed assessments. It may be that children made progress in skills that were not assessed by the YARC.

Results could also indicate that the RT intervention was not effective in supporting the development of the participants' reading comprehension skills. However, a recent study involving secondary aged pupils (mean age 13 years) in England demonstrated that participants who received a RT intervention twice per week over a period of 6 weeks made significantly greater gains in reading comprehension than the 'treatment as usual' control group (Turner, Remington, & Hill, 2017). Although involving older pupils with autism, this study demonstrates the impact of adhering to fidelity measures, which was achieved in this instance through researcher delivery of RT sessions. As RT is underpinned by complex psychology, delivery as intended is challenging, especially without direct manualised guidance.

In the current study, due to the difficulties in effecting planned monitoring procedures it is not possible to determine whether key RT principles were adhered to. The absence of gains in reading comprehension may be attributable to the fact that intervention fidelity was compromised.

5.2 RQ2: If educationally significant gains were observed, would these be restricted to children who received the largest number of RT sessions?

5.2.1 Vocabulary

A useful educationally significant gain of 0.56 was observed in Word Definitions for children who received the highest exposure to RT (10 RT sessions), suggesting that participants identified more word meanings following a greater number of RT sessions.

The two subtests used to assess vocabulary skills required the activation of different processes. Word Definitions involves the recall of a word from a child's lexicon, followed by the application of expressive language to convey meaning. Verbal Similarities initiates the higher-order skills of comparison and grouping, which may explain why an educationally significant gain was not observed for this measure as perhaps greater exposure to RT was needed to impact upon these higher-order processes. As noted by Manyak et al. (2014) in their action research, opportunities to compare and contrast word meanings along with multiple exposures to words lead to deeper processing. It is possible that in dividing time between the four strategies in RT sessions the proportion of time needed to achieve this level of processing was not possible, therefore children may not have developed the means to process words at a deeper level.

5.2.2 Reading comprehension

The effect of exposure to RT was not significant for reading comprehension. Extant research indicates that reading comprehension gains are made and maintained when an adequate number of RT sessions (12) have been carried out (Brown & Palincsar, 1982, 1989; Palincsar & Brown, 1984). Findings from the current study support previous research indicating that fewer than 12 RT sessions do not produce transfer effects regarding reading comprehension (Tomesen & Aarnoutse, 1998). Observations during post-tests indicated that some improvement in comprehension monitoring was achieved. When encountering an unknown word, one pupil stated, "can I clarify that?" but then appeared to have difficulty in applying strategies to derive the meaning of the sentence without adult support. This suggests that strategies were not automatic and the pupil was unsure of how to proceed out of the RT context. Comments made during semi-structured interviews also indicate increased awareness:

"It [RT] made me understand more, like if you're reading a book and sometimes I don't understand but now I do because of the four strategies." (Year 6 pupil)

As vocabulary is one of the lower-order processes that contribute to reading comprehension (Hogan, Bridges, Justice, & Cain, 2011), it is possible that the RT intervention facilitated development of lower-order skills, which may have resulted in reading comprehension gains over time had a greater number of RT sessions taken place.

5.3 RQ3: If educationally significant gains were observed, would these differ in magnitude for monolingual and EAL pupils?

5.3.1 Vocabulary

For vocabulary measures, pre-test analyses indicated that there were no significant differences between monolingual and EAL participants at the onset or completion of the RT intervention. Small effect sizes were observed for the EAL participants for both vocabulary measures, whereas a useful gain in Word Definitions was observed for monolingual pupils. This may reflect patterns identified in research that children speaking more than one language make slower progress with vocabulary over time than their monolingual peers (Hoff et al., 2012).

Closing the gap between children was a key theme identified in vocabulary development research with regard to English as an additional language (Demi & Hau, 2013) and socioeconomic status (SES) (Hart & Risley, 2003). Within the context of the current research, the gap between monolingual and EAL children remained. However, pupils with EAL were not evenly distributed across the two participating schools and settings varied greatly regarding SES. Of the 13 students with EAL, eleven attended School A (an area of high deprivation and low SES) and two attended School B (an affluent area with medium to high SES). It is possible that results were influenced by SES in addition to languages spoken, therefore findings cannot be attributed solely to EAL.

One further point for consideration regards the use of standardised tests with pupils who have recently moved to England. Two of the year five participants in School A moved to England within the last three years, therefore may have been

affected by the cultural bias of the pre- and post-tests used (Gunderson & Siegel, 2001). One question in particular in the Verbal Similarities subtest resulted in confusion. When asked, “Draughts, football, table tennis: what could you call all these things?” most pupils either stated “giraffes?” or “Draughts?” indicating that this is an unknown term. However, this confusion was evident for all pupils, irrespective of languages spoken, therefore cannot be a result of cultural bias. Furthermore, the BAS3 was selected due to more recent standardisation and scales were developed to minimise cultural bias (Elliott, 2011).

5.3.2 Reading comprehension

For reading comprehension, a significant difference was found between EAL and monolingual participants at pre-test but not at post-test. Pre- to post-test means indicate that pupils with EAL achieved results that were closer to their monolingual peers following the RT intervention, indicating a narrowing of the gap that existed prior to RT sessions. However, this observation is difficult to interpret due to the decrease in scores demonstrated by over half of the children at post-test.

With regard to the two pupils who had moved to the UK within the past three years, observations during post-test indicated that their reading comprehension skills were markedly different during post-assessment. The scores they achieved did not reflect this improvement. It may be that because they were reading the lower level passages due to fluency needs, their comprehension levels were underestimated. Conducting a reading comprehension assessment in their mother tongue would be beneficial in providing information regarding language proficiency, which could lead to conclusions regarding BICS and CALP levels (Cummins, 1980).

5.4 RQ4: What are the facilitators and barriers to implementation?

As Dr. Tennent identified during correspondence with the researcher in 2016, the relationship between facilitators and barriers is of a binary nature. Both aspects will be discussed together with regard to key areas that arose when planning and delivering RT in school.

5.4.1 School leadership and staff dynamics

The positioning of the SENCo within school structures acted as both barrier and

facilitator. Contrasting experiences were noted by the researcher when engaging in delivery of RT within School A and School B with regard to adult engagement and organisation. Clear lines of communication with the Senior Leadership Team (SLT) were not possible in School B, as opportunities to meet were organised through the receptionist or messages conveyed via the SENCo. In contrast, the SENCo in School A also held the role of Deputy Head Teacher, which resulted in a more open and coherent approach. In School B, the SLT communicated messages that the researcher was unaware of, which prevented the adoption of a solution-focused approach when encountering challenges.

The SENCo at School B commented that a member of year five staff had recently returned following a period of extended absence due to illness, which was not raised at the onset of the current study. Due to concerns regarding the individual's health, the year five teaching team reportedly adopted a protective stance and were observed to 'push back' when requests were made by the Senior Leadership Team. Beneficence (for the benefit of others) is central to the Educational Psychologist's duty in working with children or young people and should be extended to adults in schools. Burden (2015) raises a crucial point with regard to true informed consent. When engaging with school staff, researchers should consider whether involvement is voluntary or whether individuals have been informed by managers that they are taking part.

From the position of reflexivity, having prior experience as a teacher enabled understanding and empathy of work pressures experienced by staff and facilitated problem resolution. Despite this, early opportunities to engage in consultation with teachers may have prevented or reduced challenges that arose. As Greenway (2003) found in their research, consultation was vital in reframing thinking and developing a collaborative style of interaction between the Educational Psychologist and teacher.

Although the focus of this study involved the effectiveness of an intervention, aspects regarding implementation are of equal importance for ethical and practical reasons. Implications for the researcher with regard to future research in the role as a qualified EP include:

- ⇒ gaining the support of the Senior Leadership Team and establishing open lines of communication early on in the process;
- ⇒ beginning the process of an intervention or approach through consultation frameworks in a problem-solving context with staff;
- ⇒ exploring individuals' capacity collaboratively when planning to initiate an intervention.

In contrast, staff at School A were encouraged to act autonomously by the SENCo and appeared enthusiastic and interested in the RT approach. When challenges arose, adults considered approaches to overcome these rather than listing problems.

5.4.2 Translating theory to practice

A framework for implementing evidence-based interventions in schools will be applied to consider the difficulties and strengths encountered (Forman et al., 2013):

- Implementation (practical elements)

Implementation involves practical elements, such as resources and time. Both of these aspects were discussed by children and adults. Pupils raised concerns regarding absence from special lessons and adults felt that time for preparation was lacking. In the busy school environment, there is little time for reflection and it is argued in this research that an approach such as RT demands this time. RT is not accompanied by a manual and is underpinned by complex psychology. In order for staff to truly achieve fidelity to the programme, time is needed to learn, prepare and seek support if necessary. This is also a priority for staff wellbeing.

- *Implementation activity* (actions taken to ensure program is delivered completely and appropriately)

Monitoring procedures were not put in place as planned at School A or School B, therefore the extent to which RT was delivered appropriately is unclear. However, during informal conversations in both schools some of the staff commented on their efforts in implementing RT as discussed during the staff training session.

- *Implementation outcomes* (indicators of adequacy of programme delivery)

Results indicated vocabulary gains, which suggests that the RT instruction was beneficial for the participants. However, confounding factors may have influenced these results, therefore further research controlling for these aspects is necessary to determine the adequacy of this approach in similar contexts.

- *Implementation components (*communication process within a social system, between those who know about the innovation and those who do not)

This aspect was present with regard to the researcher's engagement with the SENCo at School A and to an extent with staff at School B but not enough contact and ongoing supervision took place for this to be considered a robust and connected aspect of the research. Opportunities to meet with teachers and teaching assistants were limited, which is a consideration for future work in terms of planning meetings at the onset of EP involvement.

- *Change agent* (individual working to bring an innovation into a school system)

In addition to the researcher, a change agent is required within the school in order to sustain momentum.

- *Implementation stages* (dissemination and sustainability)

At the time of completion, the current study remained at the dissemination stage. To achieve sustainability, the facilitators and barriers identified would need to be carefully considered by the EP and school in order for implementation to be successful and achieve expected outcomes.

- *Intervention fidelity* (delivery as intended)

Challenges in arranging monitoring procedures meant that it was difficult to establish whether RT was delivered as intended. One of the teachers in Year 5 at School B commented that some of the RT strategies were already in use in school, which indicates a lack of understanding of key aspects of the RT approach, such as the reciprocal dialogue between the adult and children.

However, staff were provided with a fidelity checklist and the importance of these principles were emphasised during school training.

A further point to consider regarding intervention fidelity is espoused theory (Argyris & Schön, 1996), which relates to the theory individuals believe underpin their actions as opposed to the actual theory they are operating under (theory-in-use). In response to interview questions, one Teaching Assistant (TA) stated that their sessions contained the key elements of RT, however children who were involved in the TA's group could not name the four strategies without prompting and commented:

> *"She didn't help me properly- you help me more because she um like didn't explain it properly and she just said write it, write it, just do it." (Y6 pupil, School A)*

Similar observations were discussed by Seymour and Osana (2003) in their study involving the implementation of RT and they acknowledge that researchers cannot simply provide practitioners with intervention information and expect this to be enough to proceed. Ongoing consultation along with audio recordings of sessions or engaging in Video Enhanced Reflective Practice (VERP) (Kennedy, Landor, & Todd, 2015) may provide the opportunity to address misconceptions and to hone RT practice.

5.4.3 Child enjoyment

One facilitator that was evident in both schools was the engagement and enjoyment demonstrated by all children involved. This was recognised by the adults and by the children themselves:

> *"I enjoyed everything." (Year 5 pupil, School B)*

> *"Children were engaged and enjoyed sessions, even children who are reluctant or easily distracted." (Year 6 Teachers, School A)*

From the researcher's prior experience as a teacher, group working occurs in schools, however this is often led by adults or children are expected to engage with one another without being provided with a structure to manage the process. It is possible that participants' enjoyment stemmed from the distinctiveness of the

RT approach, which differs from typical classroom practice as the goal is to shift responsibility gradually from adult to child. The emphasis on developing pupils' autonomy may have resulted in increased motivation, which is supported by Ryan and Deci's (2000) research on extrinsic (outcome-led) and intrinsic (guided by within-factors, such as enjoyment) motivation. For intrinsic motivation to develop, feelings of both autonomy and competence must be activated. Competence may have been achieved through the collaborative element of RT as all children are expected to participate and to offer others' support during discussion (Palincsar & Brown, 1988). This is supported by comments the children made in their responses to semi-structured interview questions:

> *"It will help people if you're reading and then you you when you're at the end of it you can say you can say the question or something, can ask a question." (Year 5 pupil, School B)*

5.5 RQ5: What is the experience of the children?

5.5.1 Collaborative learning

Working with others was an aspect of the RT intervention that pupils in both schools emphasised. Some comments were linked to spending time with friends and others mentioned that reading with friends was enjoyable. However, participants' comments centred around the learning opportunities that occur within this context. Vygotsky (1978) emphasised the role of social interaction within learning and posited the involvement of two levels of learning: interpsychological (between people) and intrapsychological (within the child). In interacting with others, co-construction of meaning occurs (Rafal, 1996). This is supported by observations the children made:

> *"I quite enjoyed when we were reading as a group and then we collaborated when someone wanted to know something we started collaborating and like thinking about the answer of the question." (Year 5 pupil, School B)*

Teacher reports and informal observations made by the researcher indicate that in the current study, students in both schools engaged in the RT dialogue, even those that identified themselves as shy or self-conscious:

"*We participated kind of like all of us." (Year 5 pupil, School B)*

It is possible that the effective collaboration resulted in learning that contributed to the gains made in vocabulary in the current research. Less successful collaboration may hinder the learning process, which was noted in previous research. In their study, Hacker and Tenent (2002) report that teachers commented on the lack of engagement of some pupils who would not engage in RT dialogue without an adult present to prompt responses. A consideration for future research may involve determining the presence and interaction of factors that result in successful collaboration.

5.5.2 Active learning

A main goal of Reciprocal Teaching is self-regulated learning, which is achieved through the dialogic approach and use of metacognitive strategies. Self-regulated learning leads to effective management of attention and cognition, which over time leads to increased confidence in ability (Paris & Oka, 1986). Engaging in the self-regulated learning aspect of RT may have resulted in the difference in confidence that staff observed when working with the children:

"More confidence in reading." (Year 5 TA, School A)

"Some improved confidence." (Year 5 Teachers, School B)

In addition to confidence, comments that the children made are indicative of development of metacognitive skills and demonstrate greater awareness of thinking processes:

"Spotting out things in a book that you normally really wouldn't spot out- you would normally just read the whole book and then you're done, it's kind of like just spotting out things and clues in the book."
(Year 5 pupil, School B)

Following the RT intervention, some participants seemed to be more aware of their active role in the learning process, rather than depending on an adult to divulge their knowledge:

"If someone asks a question she [Miss B] would not answer it and that's kind of fun because we kind of use our minds a little bit; thinking like what that word is." (Year 5 pupil, School A)

However, at School B, pupils conveyed a contrasting perspective and appeared to rely on adult guidance.

"Maybe we should get a dictionary out I'm not sure, it depends on what the teacher thinks we should do so then if you tell us the point of why we should get a dictionary or if we're not allowed then yeah."
(Y5 pupil, School B)

As noted by Higgins, Katsipataki, Kokotsaki, Coleman, Major and Coe (2014), teaching metacognitive skills is not straightforward. When working with Year four pupils at School A, the researcher noted one occasion where a pupil chose to clarify a word using a dictionary, however did not understand the definition retrieved. The student chose to revert to guessing the meaning of the word, rather than testing ideas regarding meaning. Much adult scaffolding was required to address this, although the child in question did not accept that their definition was incorrect. This may relate back to low standard of coherence (Clarke, Truelove, Hulme, & Snowling, 2013) that is observed in poor comprehenders. The type and extent of adult scaffolding or instruction required to challenge such thinking is unclear and it would be beneficial to investigate this further.

Chapter 6. Conclusion

6.1 Limitations

Although a waiting control group was planned for in the current research, this was not possible due to timescale constraints. However, effect sizes were included in analyses to gauge whether gains made were higher than those attributed to the passage of time. Lack of available time also meant that delayed post-test measures were not conducted, which is one of the recommendations stipulated by Rosenshine and Meister (1994) in their review of Reciprocal Teaching (RT) research. Due to the nature of real world research (Robson, 2011), recruitment of participants through Special Educational Needs planning meetings resulted in varying numbers of participants across different year groups and an uneven proportion of EAL learners across the two participating schools. Therefore, although selection was representative of Educational Psychology practice in identifying appropriate involvement with pupils with needs, this is not necessarily the most effective approach in sampling participants for research.

Further limitations of the current study relate to possible confounding variables, such as socioeconomic status (SES), Home Literacy Environment and individual differences between participants, such as memory skills, which were not controlled for or measured in pre- to post-testing. The localities of School A and B differed greatly according to census statistics with regard to parental employment and proficiency in English. As demonstrated by Hart and Risley (1995), these factors have a profound impact on children's vocabulary development, therefore may have influenced results.

6.2 Strengths

The current study contributes to the developing evidence base regarding the use of Reciprocal Teaching in English schools; especially in diverse settings such as London. Despite challenges faced during implementation, the beginnings of useful educational gains were observed in vocabulary for monolingual and EAL pupils. Children had the opportunity to share their views, which enabled greater insight into their experience as participants of an intervention. Eliciting children's views through group semi-structured interviews was successful and adheres to the British Psychological Society guidelines (BPS, 2015) involving the importance

of obtaining the child's voice. Although a possible confounding variable, conducting this research in two settings demonstrated the complexities inherent within school systems and emphasises the need for Educational Psychologists (EPs) to consider a range of factors when disseminating evidence based practice.

6.3 Implications for future research

It would be beneficial to conduct further research on the impact of RT on EAL learners and to control for potentially confounding variables identified within the current study. Completing additional pre- and post-test measures, such as those measuring metacognition and memory, would provide a more rounded profile of an individual's skills. Developing a reading comprehension assessment that incorporates the RT strategies may enable better identification of children's strengths and needs and could facilitate the planning and execution of targeted provision to meet these needs. As a result of increasing challenges and pressures faced by teachers and school staff in England, it would be worthwhile exploring their perspective regarding knowledge and understanding of evidence based practice to avoid the situation described by Moon (2011, p. 97) as:

> *"another clueless attempt by researchers to tell me how to run my classroom."*

6.4 Implications for EP practice

In addition to consultation (Wagner, 2000), developing a collaborative framework for implementing interventions or initiatives in partnership with school practitioners may facilitate the EP's role in 'giving psychology away' (Miller, 1969) and thus support children and young people on a wider, systemic level. Alternatively, the explicit use of an existing Educational Psychology framework such as the Constructionist Model Of Informed and Reasoned Action (COMOIRA) with school staff may be productive in guiding procedures when disseminating evidence based practice. This model acknowledges and explores individuals' perspectives as well as the multiple truths and realities created by individuals and social systems (Gameson & Rhydderch, 2008). Involving parents in this process would be advantageous due to influences of the home environment on the development of vocabulary and reading comprehension skills

(Cain & Oakhill, 2011).

In the current context of ethical trading for Educational Psychologists (DECP, 2013), careful negotiation of work is essential. EPs are required to demonstrate their added value and differences between the EP's perspective and clients' views regarding service delivery can result in confusion (Ashton & Roberts, 2006). Preparation of a leaflet detailing the RT evidence base and the commitment required by school if they were to implement RT as an intervention (or guided reading approach) may be provided during Special Educational Needs (SEN) planning meetings and discussed initially with SENCos.

If schools were to 'buy-in' EP time to facilitate implementation of an RT intervention, a great deal of forethought and planning would need to occur to avoid the challenges faced in the current study. It would be beneficial for schools to gather detailed information regarding prospective participants in terms of reading habits and language exposure at home, language proficiency in all languages spoken, a description of their reading profile according to the Simple View of Reading (Gough & Tunmer, 1986), school attainment and progress and other pertinent information (e.g. referrals to other services within the local authority or children's service).

Inviting teachers to attend an informal meeting to glean their interest and to secure reading champions (LSEF, 2015) for each key stage may empower staff and facilitate a collaborative working relationship between EP and practitioners. A confidential questionnaire regarding staff wellbeing could be conducted to gauge staff capacity in employing a novel initiative. Meetings between the senior leadership team and EP to discuss the possible contribution of RT to the school improvement plan may also be productive at a systemic level and engaging parents through a coffee morning may be helpful in securing their involvement. Finally, EPs or school staff could meet with the school council (a group of students elected to represent pupils' views regarding their school) to gain their views on reading and vocabulary in school and the possibility of participating in the RT approach.

6.5 Conclusion

This study contributes towards the gap in extant research regarding the use of Reciprocal Teaching to facilitate the development of vocabulary in addition to reading comprehension skills with monolingual and EAL pupils in Key Stage Two. Framed within the context of two schools situated in a diverse London borough, the current study presents findings that vocabulary gains approaching educational significance were observed following a Reciprocal Teaching intervention. However, gains in reading comprehension were not achieved and the reasons for this remain unclear. Furthermore, the presence of confounding variables and threats to intervention fidelity affect the reliability of results, therefore further research involving Reciprocal Teaching is necessary to corroborate other findings that it is an effective approach to adopt in English schools.

This study demonstrates the complexity inherent in conducting research in schools and the barriers and opportunities associated with the role of the EP in recommending and supporting implementation of evidence-based interventions. Findings illuminate the importance of empowering school staff and developing trusting relationships through rapport building, consultation and solution-focused approaches. Furthermore, challenges encountered indicate the need for careful negotiation of EP involvement and the influence of systemic issues in schools on work carried out.

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Appendix A - Proficiency in English descriptors (DfE, 2017, p. 144)

Code	Description
A	**New to English** May use first language for learning and other purposes. May remain completely silent in the classroom. May be copying/repeating some words or phrases. May understand some everyday expressions in English but may have minimal or no literacy in English. Needs a considerable amount of EAL support.
B	**Early acquisition** May follow day to day social communication in English and participate in learning activities with support. Beginning to use spoken English for social purposes. May understand simple instructions and can follow narrative/accounts with visual support. May have developed some skills in reading and writing. May have become familiar with some subject specific vocabulary. Still needs a significant amount of EAL support to access the curriculum.
C	**Developing competence** May participate in learning activities with increasing independence. Able to express self orally in English, but structural inaccuracies are still apparent. Literacy will require ongoing support, particularly for understanding text and writing. May be able to follow abstract concepts and more complex written English. Requires ongoing EAL support to access the curriculum fully.
D	**Competent** Oral English will be developing well, enabling successful engagement in activities across the curriculum. Can read and understand a wide variety of texts. Written English may lack complexity and contain occasional evidence of errors in structure. Needs some support to access subtle nuances of meaning, to refine English usage, and to develop abstract vocabulary. Needs some/occasional EAL support to access complex curriculum material and tasks
E	**Fluent** Can operate across the curriculum to a level of competence equivalent to that of a pupil who uses English as his/her first language. Operates without EAL support across the curriculum.
N	Not yet assessed

Appendix B - Systematic search completed for Literature Review

Systematic Search Planner
This planner will assist in undertaking a systematic approach to researching a topic, identifying key search concepts, information sources and material relevant to your research.

Write your research question (or issue or problem) in the box below:

Reciprocal Teaching: an exploration of its effectiveness in improving the Vocabulary and Reading Comprehension of Pupils with and without English as an Additional Language in Key Stage Two.

Research Questions

1) Would educationally significant gains be made in vocabulary and reading comprehension as a result of this short RT intervention?
2) If educationally significant gains were observed, would these be restricted to children who received the largest number of RT sessions?
3) If educationally significant gains were observed, would these differ in magnitude for monolingual children and pupils with EAL?
4) What is the experience of the children taking part in the RT intervention?
5) What are the facilitators and barriers to implementation of the RT intervention?

1. Using the PICO(T) formula write down the question
   - Population/Problem **(*Primary School Pupils*)**
   - Intervention **(*RT*)**
   - Comparison/Control **(*standardisation population*)**
   - Outcome **(*gains in vocabulary and reading comprehension*)**
   - (Timeframe) **(*25 RT sessions; 12 weeks*)**

2. List the main concepts derived from the question into the table below.✓

3. Find the synonyms of those words, alternate spelling, and the words you wish to exclude and insert in the column below. ✓

4. Combine searches (Boolean searching using **AND, OR, NOT**) ✓

5. Identify controlled vocabulary (thesaurus terms). ✓

6. Keep a systematic log of recorded database searches: ✓

	Concept 1	Concept 2	Concept 3	Concept 4
Main concepts from the above summary	Reciprocal Teaching/ metacognition	Vocabulary	Reading for meaning	Young pupils
Keywords	Reciprocal Teaching	Expressive Receptive Vocabulary	Reading Comprehension	Primary age pupils
Alternate search terms Using Truncation* and Wilcards? (root word* = different endings, word? = singular and plural)	Reciprocal Teaching OR Reciprocal Reading OR Reciprocal Teaching of Reading	Expressive AND Receptive Vocabulary Vocabulary development/ growth/acquisition Word meaning	Reading for meaning Poor comprehender	British search terms: Primary school pupil/child*/ Student (Key Stage 1 and Key Stage 2) American search terms: Ages 3-4 Preschool. Ages 5-10 Elementary; Kindergarten to 5th grade. Ages 11-13, Middle School, 6th to 8th grade. EAL/ELL/ESL/EFL
Synonyms (alternate words, alternate spelling)	From original authors and American papers as RT originated in America- look for other terminology whilst searching.	Lexicon Lexical	Understanding	ELL/ESL/EFL- from papers read.
Excluded concepts	/	/	RT used in areas other than reading.	Students aged 11+ (unless limited research with younger pupils).
Controlled vocabulary Using APA thesaurus online/database thesauri	No alternatives	Vocabulary development, vocabulary skills expressive and receptive language	Semantics, reading development, reading ability	Pupils, students, primary school, elementary school.
Limit by: Time period Geographical region Age group Language Other	1984-present, any country	Vocabulary development via reading, rather than other school subjects.	/	Primary, not secondary pupils.

Information Sources

Information can be found in various formats including print, electronic and multimedia. There is no single comprehensive source that will fulfil all research needs; therefore, it will be necessary to consult a number of different sources. To keep current with sources (e.g. databases, websites, journal TOCS etc.), identify them first and then set up alerts. This must include key scholarly sources such as peer-reviewed articles, conference papers, reports, books and systematic reviews conducted on your topic or related areas. Key unpublished formats may include grey literature e.g. working papers, government reports, conference posters, blogs, etc.)

Make a note of these as you progress with your search.

Key Scholarly Formats (e.g. peer-reviewed journal articles, conference papers, reports, books, systematic reviews etc.) ✓

Key unpublished formats (e.g. grey literature, working papers, government reports, conference posters, blogs etc.)

Theses and Dissertations (NB theses and dissertations have opposite meanings in N. America) ✓

Key Authors ✓

Recording your search strategies: It is important to record search strategies when reporting your future findings. ✓

Search criteria

Search terms (derived from research questions and through use of database thesauri) **Reciprocal Teaching: an exploration of its effectiveness in improving the Vocabulary and Reading Comprehension of Pupils with and without EAL in Key Stage Two.**	1. "Reciprocal Teaching" OR "Reciprocal teaching" OR "reciprocal teaching" 2. "Reciprocal Teaching" OR "Reciprocal teaching" OR "reciprocal teaching" AND Vocabulary OR "vocabulary development" OR "vocabulary growth" OR "vocabulary skills" 3. "Reciprocal Teaching" OR "Reciprocal teaching" OR "reciprocal teaching" AND "expressive vocabulary" OR "receptive vocabulary" 4. "Reciprocal Teaching" OR "Reciprocal teaching" OR "reciprocal teaching" AND EAL/ELL/ESL/EFL
Search IoE, UCL and Senate House Library catalogues Databases Collect relevant incidental references	
Database content/field	Education

	Psychology Social Sciences Child development
Databases searched	BEI (EBSCO) APA PsychNET ERIC (Proquest) AEI (Proquest) Web of Science ASSIA COPAC JSTOR PsychINFO PsychARTICLES Linguistics and Language Behavior Abstracts (LLBA)
Inclusion/exclusion criteria ☑	☒
Vocabulary development Word meaning Reading- decoding or comprehension Reciprocal Teaching (RT) Implementing RT RT compared with other reading interventions Primary age pupils (7-11) English as an Additional Language Epistemological stance Poor comprehenders Poor readers Participants with SEN Reading and metacognition Any country (limited research carried out in the UK)	Individuals aged 11+ (unless limited evidence for age range within inclusion criteria) Online/computerised interventions Highly adapted RT General teaching approaches in the classroom RT used with specific subjects, not reading (e.g. maths, science, business studies etc.)

Example page taken from systematic search grid created by the researcher to record literature perused and selected

"Reciprocal Teaching" OR "reciprocal teaching" OR "Reciprocal teaching" Search: IoE library catalogue: 374 results (includes resources from the IOE Library and Archives catalogues, electronic resources such as the IOE EPrints Repository, DERA, and articles to which IOE students and staff have full text access); (ordered by most recent: wanted a developmental progression of the research. No option for oldest-newest.) -Duplications excluded -Green: to be included -White: excluded after further investigation -Yellow: incidental relevant references encountered whilst search.	Excluded (title)	Excluded (abstract)	Excluded (body)	R (relevance: whole topic or aspects?) E (expertise: qualifications/ cited by others?) V (viewpoint: bias?) I (intended audience: public/ scholarly) E (evidence: peer reviewed?) W (when published)
Pratt, S., & Urbanowski, M. (2016). Teaching Early Readers to Self-Monitor and Self-Correct. *Reading Teacher*, 69(5), 559-567.	N	N	N	Teachers correcting students, rather than allowing them to self-correct. Means children don't develop these strategies themselves.
Endang Komariah, Putri Ace Riaula Ramadhona, & Tengku Maya Silviyanti. (2015). Improving reading comprehension through Reciprocal Teaching Method. *Studies in English Language and Education*, 2(2), 99-115.	N	Y		High school students/using audio tapes of passages from texts.
Hampson-Jones, Frances Elsie. (2014). *Reciprocal Teaching: Investigation of its Effectiveness as a Method of Whole Class Reading Comprehension Instruction at Key Stage Two*.	N	N	N	High relevance
Clarke, P., Truelove, Emma, Hulme, Charles, & Snowling, Margaret J. (2013). *Developing Reading Comprehension [electronic resource]*. (1 st ed.). Hoboken: Wiley.	N	N	N	
Sporer, Nadine, & Schunemann, Nina. (2014). Improvements of self-regulation procedures for fifth graders' reading competence: Analyzing effects on reading comprehension, reading strategy performance, and motivation for reading. *Learning and Instruction*, 33, 147.	N	N	N	Using RT and additional self-regulation measures. Critique of 'lethal mutations'.

Appendix C - Table summarising participant information

Code	Gender	Ethnicity	First Language	Reason for teacher referral	SEN (Special Educational Needs)
				School A	
A61	Male	Afghan	Dari	Reading progress slow	SEN (learning needs)
A62	Female	Indian	Other	Vocabulary and comprehension skills	
A63	Female	Indian	Other	Vocabulary and comprehension skills	SEN (learning needs)
A64	Female	Black- Somali	Other	Vocabulary and comprehension skills	SEN (learning needs)
A65	Female	Black- Somali	Other	Just below year group, progress slow	
A66	Male	White and Asian	English	Vocabulary and comprehension skills	SEN (learning needs)
A67	Male	Indian	Other	Vocabulary and comprehension skills	
A51	Female	Indian	Other	Vocabulary and comprehension skills	
A52	Female	Indian	Hindi	Vocabulary and comprehension skills	
A53	Female	White Western	Polish	Vocabulary and comprehension skills	SEN (learning needs)
A54	Female	Other Asian	Sinhala	Vocabulary building	
A55	Male	Indian	Panjabi	Vocabulary building	
				School B	
B51	Male	White British	English	Vocabulary and comprehension skills	
B52	Female	White British	English	Vocabulary and comprehension skills	SEN (speech and language, learning needs)
B53	Male	White British	English	Vocabulary and comprehension skills	SEN (learning needs; working memory)
B54	Female	Other Ethnic Group	English	Vocabulary and comprehension skills	
B55	Female	White Western European	English	Vocabulary and comprehension skills	
B56	Male	White British	English	Vocabulary and comprehension skills	
B41	Male	White British	English	Vocabulary and comprehension skills	
B42	Male	White Eastern European	Polish	Vocabulary and comprehension skills	
B43	Male	White Eastern European	Lithuanian	Vocabulary and comprehension skills	
B44	Male	White British	English	Vocabulary and comprehension skills	

Appendix D - Reciprocal Teaching strategy assessment rubric

(Oczkus, 2010)

Rubric for the Reciprocal Teaching Strategies

Strategy	Exemplary (4)	Proficient (3)	Developing (2)	Beginning (1)
Predict	• Uses text features and clues to make logical predictions. • Uses background knowledge to make predictions. • Consistently uses the language of predicting. • Gives solid reasons for predictions. • Discusses predictions with detail after reading to change or confirm.	• Provides predictions that make sense. • Makes predictions based on text clues, background information. • Confirms and changes predictions throughout reading, usually gives reasons for predictions. • Checks predictions after reading. • Uses the language of predicting most of the time.	• Makes some simple, sensible predictions. • Sometimes uses text clues and background to make predictions. • Makes some predictions that are not sensible. • Sometimes gives reasons for predictions. • Begins to use the language of predicting such as, "I think...will happen, because...."	• Predictions don't always make sense. • Does not use text clues such as illustrations, headings, to make logical predictions. • Predictions are wild and not text based. • Experiences difficulty even when prompted in giving reasons for predictions.
Question	• Consistently asks a mix of well-crafted questions including recall questions that go with the events and ideas of the text; inferential questions; and critical thinking questions that take the discussion beyond the text such as "Why [How] do you think..." or "How does...compare to...?" • Asks questions about the theme and deeper meanings of the text.	• Asks several levels of questions including a mix of literal recall questions about the main ideas of the text, literal recall about important details of the text, and inferential questions. • Wonders about the text and beyond. • Sometimes asks questions of the author. • Asks critical thinking questions, such as "Why do you think...?"	• Asks simple recall questions that go with the text and begin with *who, what, when, where, why, how,* and *what if.* • Asks simple "I wonder..." questions that relate to the text. • Sometimes asks inferential questions. • Sometimes asks main idea questions.	• Experiences difficulty formulating even simple literal recall questions that begin with question words. • Asks questions about details in the text rather than important ideas. • Asks questions that do not correspond with the text.
Clarify	• Identifies words and ideas that are unclear. • Consistently identifies and uses a rich variety of strategies for figuring out difficult words and ideas and portions of text (e.g., reread, read on, sound out). • Identifies and clarifies high-level ideas such as idioms, metaphors, and symbolism.	• Identifies words to clarify. • Sometimes identifies ideas and portions of text to clarify. • Consistently uses more than one strategy for clarifying words and ideas (e.g., reread, read on, sound out).	• Identifies words to clarify. • Identifies ideas and portions of text to clarify when prompted. • Uses the same one or two strategies to figure out words and ideas. • Sometimes does not realize that meaning has been lost. • Begins to use language of clarifying such as "I didn't get..., so I...."	• Does not stop to try to figure out words. • Identifies words to clarify when prompted. • Identifies ideas to clarify when prompted. • Uses only one strategy to figure out words or ideas and needs to be reminded of others. • Does not realize when he or she is stuck.
Summarize	• Retells in own words using some of the new vocabulary. • Gives only most important events, points, and key details. • Summarizes, giving points in order. • Uses text structure to organize summary. • Uses rereading and text supports such as illustrations and headings to summarize.	• Leaves out unimportant details. • Usually retells in own words using a vocabulary word or two from the text. • Gives most of the points in correct order. • Usually draws from text structure to summarize. • Rereads and uses clues from the text.	• Finds it difficult to separate main ideas from unimportant details. • Includes some of the events in order but may give some out of order. • Leaves out some of the important events and ideas. • Needs prompting to reread or use text clues.	• Does not remember much of the reading. • Recalls random ideas or events from the text. • Includes unimportant details. • Needs heavy prompting to respond. • Does not reread or use text clues as tools for summarizing.

Appendix E - RT strategies introductory script

(adapted from Appendix A of Palincsar, David & Brown, 1992).

Introduction

“In this reading group, you will learn four strategies to help you with your reading. A strategy is a plan of action and the four strategies we will talk about are called summarise, question, predict and clarify. Does anyone know what these words mean? Do you have any good strategies that you already use when you read?”

Summary: “Do you know what a summary is or what summarise means? A summary is a shortened version of something you have read, heard or watched and is made up of only the most important ideas. A good summary does not include unimportant information. Why would it be helpful to summarise when you read? Summarising helps to see if you really understood what you read.”

Question: “A question is very different from a statement. A statement is a sentence that tells us information but a question is for when you want to find something out. Questions often begin with ‘who,’ ‘what,’ when,’ ‘where,’ ‘why,’ and ‘how.’ How would questions help us when we are reading? Questioning helps to think about what is important in a story.”

Predict: “Predict means to use the clues in a story to think about what might happen next. Predicting helps you to think about what you already know and to test your ideas by seeing if your predictions come true.”

Clarify: “Clarify is about figuring out the meaning of a difficult word or idea. How can it help us? It is important that we can make sense of what we are reading or hearing so we can understand the messages that a speaker or author are trying to tell us.”

Appendix F – Fidelity Checklist

In addition to aspects identified during training, the following elements are key to RT (taken from the evidence discussed) and should be included in every session or carefully considered throughout the RT intervention:

Dialogue

- ✓ Structured dialogue involving four strategies: questioning, summarising, predicting and clarifying;
- ✓ Turn-taking should occur between the teacher and pupils (this is why the approach is called Reciprocal Teaching);
- ✓ All children to be encouraged to engage in discussion with each other and to build upon one another's ideas;
- ✓ Pupils to talk about their thinking;
- ✓ Discussing reading processes is prioritised over amount of text read;
- ✓ Pupils to be actively engaged in bringing meaning to text so scaffolding should be used to guide children's thinking.

Strategies

- ✓ Discuss strategies in an order that is appropriate to the text;
- ✓ The goal of RT is for pupils to use strategies flexibly and independently;
- ✓ Adults should model strategies by thinking aloud and gradually transfer responsibility over time so that pupils take the lead in discussion once they are confident with the RT approach;
- ✓ Children need time to practise strategies so that they become embedded;
- ✓ Promote use of the hand actions for each strategy to make them more concrete for children;
- ✓ Use the posters, sentence starters and bookmarks to prompt children so that strategies are explained clearly and children understand them;
- ✓ Evidence (Brown & Palincsar, 1987) shows that strategies must be incorporate within dialogue to have an impact on children's reading comprehension, so worksheets and adult-only questioning are to be avoided.

Procedure

- ✓ Choose texts that are challenging for pupils but not so challenging that they are unable to access the text;
- ✓ Mixed ability grouping of 4-6 students;
- ✓ At least 25 RT sessions should be carried out (2-3 per week, for a duration of 20-30 minutes);
- ✓ At the beginning of each group remind pupils of the group rules to enable respectful and productive discussion;
- ✓ Children can read aloud or silently.

Key tasks during RT sessions

- ✓ Adult: model, scaffold, evaluate
- ✓ Child: monitor reading comprehension, collaborate with peers, reflect on thinking.

Appendix G - PowerPoint used to train school staff

RECIPROCAL TEACHING IN READING

Sarah Relton
Trainee Educational Psychologist

Outline of session

- What is Reciprocal Teaching in reading?
- Evidence base
- What will it look like?
- Measuring the impact
- Questions/discussion
- Session evaluation

What is Reciprocal Teaching in reading?

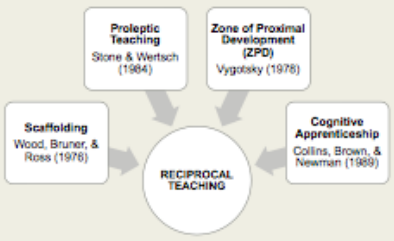
Reciprocal Teaching (RT) was developed by **Palincsar and Brown (1984)** and has been shown to improve reading comprehension. It involves scaffolded discussion based on four strategies:

Summarising Drawing out main ideas and important information.	**Clarifying** Identifying words or phrases that are either unknown or not understood.
Questioning Asking questions about the text.	**Predicting** Looking for clues in the text to anticipate what might happen next.

What does it involve?

- These strategies are explicitly taught by an adult and form the basis for each RT session.
- Fiction or non-fiction texts can be used, along with a range of other media (newspapers, magazines etc.).
- Initially the adult guides the group, modelling use of strategies through 'talk alouds' and demonstrating the role of the 'teacher'.
- As sessions progress the emphasis shifts to the children leading the group and adopting the role of teacher, with the adult acting as coach.

The psychology underpinning RT



Evidence base

- Extant research mainly carried out in America and other countries.
- Palincsar & Brown (1984): after 15-20 consecutive days of RT students progressed from scoring 30% to 80% on a reading comprehension assessment.
- Rosenshine & Meister (1994): reviewed 16 RT studies and concluded that RT does improve reading comprehension.
- See Stricklin (2011) for further references.
- "Very little" RT research conducted in the UK (Brooks, 2013).

Evidence base

- However, Brooks reports the following in *What Works for Children and Young People with Literacy Difficulties? The Effectiveness of Intervention Schemes*:

- Reciprocal Reading

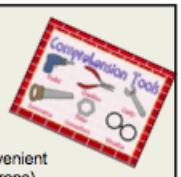
"A pilot study was conducted in four primary schools in Middlesbrough in 2011. The 48 children had comprehension ages well below their accuracy ages. They made remarkable progress in both aspects." (p. 47)

- Reciprocal Teaching

"For the 2007 edition Christa Rippon supplied data on 88 children from Haringey, and the analysis of those data remains in this edition. The results showed a useful gain in reading accuracy and a substantial one in comprehension." (p.48)

What will RT look like?

RT clip



- 10 weeks, at least twice per week
- 20-30 minutes per session
- During guided reading/a time that is convenient
- Introduce the 4 strategies at once (see props)
- Children practise these strategies in each session
- Adult models the strategies (any order)
- Adult models the role of the teacher
- Gradually the children lead the sessions with the adult acting as a coach

What will RT look like?

- Before reading activate children's existing knowledge- what will this text be about? What do you already know about this?
- Children read silently to themselves
- Pause after each paragraph or page (depending on the complexity of the text) to go through the strategies
- After 10 weeks pupils should be using these strategies as they read
- Making reading an active process
- Structuring sessions- see examples

Measuring the impact

- Pre- and post-tests (YARC and BAS3 subscales)
- Weekly audio recording (metacognition)
- Pre- and post-scaling questions for children (motivation and attitude towards reading)
- Feedback from school staff

Discussion

- The role of the Trainee EP
- [redacted]
- Questions or points for discussion?

Please complete the evaluation form

☺

Thank you for your time

Appendix H - School feedback from training questionnaire

The following is a summary of the feedback given (staff were asked to rate their knowledge and confidence in each area on a scale of 1 to 10, with 1 being the lowest and 10 the highest):

School A Teaching Assistant and SENCo feedback

Questions	Teaching Assistant	Teaching Assistant	Teaching Assistant	SENCo
Knowledge of RT (what it looks like/how it is carried out)	8	7	9	8
Knowledge of RT research	8	7	9	8
Confidence in describing RT to another member of staff	9	5	8	8
Confidence in carrying out RT with pupils	8	5	7	8
What did you find most useful?	Everything was useful.	Video and discussion.	I can carry it on into my comprehension groups and the verbal side will be helpful.	Learning about the process and how to carry it out.
What changes would you have made to this session?		Changes to my timetable.	I was happy with it all.	None
Any other comments?			I am looking forward to trying it out.	Thanks- feel more confident in my understanding of the programme.

School A Teacher feedback

Questions	Teacher	Teacher	Teacher	Teacher
Knowledge of RT (what it looks like/how it is carried out)	7	8	6	8
Knowledge of RT research	5	3	3	6
Confidence in describing RT to another member of staff	6	5	5	7
Confidence in carrying out RT with pupils	7	6	6	7
What did you find most useful?	Looking at elements taught within each reading session and how the scheme would be carried out at a practical level.	Being able to see this broken down and having a nice pack of ideas to help explore RT.	The video was helpful and I'll read the handouts to find out more info.	Finding out about RT (I didn't know anything about it previously). It looks like a great strategy.
What changes would you have made to this session?		Would be nice to have longer to explore the ideas and different strategies.	I will need to read a bit more about it to see exactly what it involves and how it is carried out.	Nice to have had more time to find out more about how to implement it.
Any other comments?			Sounds interesting and useful to whole class. Thanks.	Thank you for the info- I'll definitely be doing some extra research into this!

School B Teaching Assistant feedback

Questions	Teaching Assistant	Teaching Assistant	Teaching Assistant
Knowledge of RT (what it looks like/how it is carried out)	2/3	6	6
Knowledge of RT research	3	4	5
Confidence in describing RT to another member of staff	2	5	6
Confidence in carrying out RT with pupils	3	5	5
What did you find most useful?	I have never heard of this form of teaching	General intro.	The fact it's evidence based.
What changes would you have made to this session?	A longer session.	Offer to more staff.	More chance to discuss the implementation of it and logistics of doing it.
Any other comments?	I have not had time to read the information handed out.		

School B Teacher feedback

Questions	Teacher	Teacher	Teacher
Knowledge of RT (what it looks like/how it is carried out)	3	6	5
Knowledge of RT research	3	6	6
Confidence in describing RT to another member of staff	4	5	5
Confidence in carrying out RT with pupils	3/4	6	6
What did you find most useful?	Video- how to deliver a session	Understanding the four main ideas behind each session and showing how children can take charge in their guided reading sessions.	The symbols- easy to introduce
What changes would you have made to this session?	We needed longer- not your fault I know. It would have been good to spend time working out how it might work for us in practice.	.	More time and discussion
Any other comments?	Hoping to observe a session.		Just need more time otherwise it sounds very good and links really well with visible learning.

Due to the confidence levels identified in both schools, staff were informed that the researcher would model RT sessions and provide ongoing support throughout the intervention to ensure that adults possessed the knowledge, understanding and confidence required.

Appendix I - Table indicating the results of Tests of Normality

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
pre yarc reading accuracy	.178	22	.067	.924	22	.093
pre yarc reading rate	.129	22	.200*	.934	22	.148
pre yarc comprehension	.108	22	.200*	.966	22	.617
post yarc reading accuracy	.123	22	.200*	.924	22	.092
post yarc reading rate	.143	22	.200*	.937	22	.168
post yarc comprehension	.122	22	.200*	.972	22	.748
pre bas3 word definitions	.110	22	.200*	.975	22	.815
pre bas3 verbal similarities	.234	22	.003	.853	22	.004
pre bas3 word reading	.134	22	.200*	.953	22	.367
post bas3 word definitions	.140	22	.200*	.947	22	.278
post bas3 verbal similarities	.130	22	.200*	.908	22	.042
post bas3 word reading	.164	22	.128	.937	22	.169

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

These tests indicated that pre-test BAS3 Verbal Similarities demonstrated non-normality.

Word Definitions

As Word Definitions data did not violate assumptions of normality, a parametric analysis of variance (ANOVA) was conducted to assess the impact of number of RT sessions on Word Definition gains. In the mixed ANOVA, the between groups variable was number of sessions (10 or 6 to 8) and the within groups variable was time (pre-test to post-test). However, Levene's test for equality of variance was significant for pre-BAS3 Word Definitions (p=0.035) and post-BAS3 Word Definitions (p=0.009), meaning that the assumption of homogeneity of variance was violated. Because of this, a non-parametric analysis was necessary.

Appendix J – Pre- and post-test comparison of EAL and monolingual pupils for vocabulary measures

As Verbal Similarities data were non-normally distributed, non-parametric analyses were conducted. Mann Whitney U test indicated that there were no significant differences between EAL and monolingual participants in Verbal Similarities at pre-test: z=-1.904, p=0.057 or post-test: z=-1.193, p=0.233. Word Definitions data demonstrated normality, hence parametric approaches were taken. Independent t-test showed that there were no significant differences between EAL and monolingual participants for Word Definitions at pre-test: $t(20)$=0.434, p=0.669 or post-test: $t(20)$=0.889, p=0.391.

Appendix K - Semi-structured interview questions for children and adults

Semi-structured interview with children (to be recorded)

1. Tell me about Reciprocal Teaching
   (prompt: what are the 4 strategies and what do they mean?)
2. Did you have a favourite strategy out of the 4? (prompt: why?)
3. Will you use these strategies again? (prompt: why? /what else?)
4. Did Reciprocal Teaching change anything about the way you read?
5. Was there anything you enjoyed about the sessions? (prompt: why? /what else?)
6. Was there anything you didn't enjoy about the sessions? (prompt: why? /what else?)
7. Is there anything you'd like to change? (prompt: why? /what else?)
8. Anything else you'd like to say?

Staff (teachers, TAs and SENCos) questionnaire (to be emailed)

1. What is Reciprocal Teaching?
2. How was Reciprocal Teaching carried out and how many sessions took place?
3. What do you think about Reciprocal Teaching?
4. Would you be interested in using Reciprocal Teaching in the future and why?
5. Was there anything that helped with implementing Reciprocal Teaching in school?
6. Were there any difficulties with implementing Reciprocal Teaching and if so, what were they?
7. Would you make any changes to the way Reciprocal Teaching was introduced in school? If so, what would these be?
8. Did you notice any differences with pupils after using Reciprocal Teaching with them?
9. Other comments you'd like to make

Head teacher questionnaire (to be emailed)

1. What were you hoping for when agreeing to the implementation of Reciprocal Teaching in school?
2. What do you feel the outcome of implementing Reciprocal Teaching has been?
3. Have you received feedback from staff and what are your views on this?
4. Was there anything that helped with implementing Reciprocal Teaching in school?
5. Were there any difficulties with implementing Reciprocal Teaching?
6. Do you feel that Reciprocal Teaching could contribute to the school's reading policy/agenda and why?
7. Other comments you'd like to make?

Appendix L- Ethics form

Ethics Application Form: Student Research

All research activity conducted under the auspices of the Institute by staff, students or visitors, where the research involves human participants or the use of data collected from human participants are required to gain ethical approval before starting. *This includes preliminary and pilot studies.* Please answer all relevant questions responses in terms that can be understood by a lay person and note your form may be returned if incomplete.
For further support and guidance please see accompanying guidelines and the Ethics Review Procedures for Student Research http://www.ioe.ac.uk/studentethics/ or contact your supervisor or researchethics@ioe.ac.uk.

Before completing this form you will need to discuss your proposal fully with your supervisor(s). Please attach all supporting documents and letters.

For all Psychology students, this form should be completed with reference to the British Psychological Society (BPS) Code of Human Research Ethics and Code of Ethics and Conduct.

Section 1 Project details			
a.	Project title	Reciprocal Teaching: An Exploration of its Effectiveness in Improving the Vocabulary and Reading Comprehension of Key Stage Two Pupils with and without English as an Additional Language	
b.	Student name and ID number (e.g. ABC12345678)	Sarah Relton [redacted]	
c.	Supervisor/Personal Tutor	Professor Jackie Masterson	
d.	Department	Psychology and Human Development	
e.	Course category (Tick one)	PhD/MPhil ☐	EdD ☐
		MRes ☐	DEdPsy ☒
		MTeach	MA/MSc

		☐	☐
		ITE ☐	
		Diploma (state which) ☐	
		Other (state which) ☐	

f.	Course/module title	Doctor in Professional Educational Child and Adolescent Psychology
g.	**If applicable,** state who the funder is and if funding has been confirmed.	N/A
h.	Intended research start date	October 2015
i.	Intended research end date	July 2017
j.	Country fieldwork will be conducted in *If research to be conducted abroad please check www.fco.gov.uk and submit a completed travel insurance form to SE in UCL Finance (see guidelines). This form can be found here (you will need your UCL login details available): https://www.ucl.ac.uk/finance/secure/fin_acc/insurance.htm*	England

k.	Has this project been considered by another (external) Research Ethics Committee?	
	Yes ☐	External Committee Name:
	No ☒ ⇨ *go to Section 2*	Date of Approval:

If yes:

- Submit a copy of the approval letter with this application.
- Proceed to Section 10 Attachments**.**

Note: Ensure that you check the guidelines carefully as research with some participants will require ethical approval from a different ethics committee such as the National Research Ethics Service (NRES) or Social Care Research Ethics Committee (SCREC). In addition, if your research is based in another institution then you may be required to apply to their research ethics committee.

Section 2 Project summary

Research methods (tick all that apply)

Please attach questionnaires, visual methods and schedules for interviews (even in draft form).

☒ Interviews ☒ Focus groups ☒ Questionnaires ☐ Action research ☐ Observation ☒ Literature review	☒ Controlled trial/other intervention study ☒ Use of personal records ☐ Systematic review ⇨ ***if only method used go to Section 5.*** ☐ Secondary data analysis ⇨ ***if secondary analysis used go to Section 6.*** ☐ Advisory/consultation/collaborative groups ☐ Other, give details:

Please provide an overview of your research. This should include some or all of the following: purpose of the research, aims, main research questions, research design, participants, sampling, your method of data collection (e.g., observations, interviews, questionnaires, etc.) and kind of questions that will be asked, reporting and dissemination.

Purpose of research

The purpose of this research is to identify whether Reciprocal Teaching (as a reading intervention) will improve the vocabulary as well as reading comprehension skills of primary-age pupils.

The Intervention

Reciprocal Teaching (Palincsar & Brown, 1984) involves teaching children or young people to use four strategies to engage particular processes: predicting, clarifying, summarising and questioning. Rather than focusing on adult questioning this intervention promotes students' independence.

Reasons for research

This research came about as a result of an OFSTED inspection in one of the schools that the researcher worked with last year. A group of children were identified as making no progress in reading and school staff wanted to explore this. Following further investigation, it transpired that pupils were experiencing difficulty with receptive and expressive vocabulary but that this was being masked by their fluent word reading. A pilot study was conducted, which showed that Reciprocal Teaching improved the pupils' expressive and receptive vocabulary as well as their reading comprehension skills.

Aims of research

Following the success of this pilot study the researcher aims to carry out Reciprocal Teaching with a larger number of participants to establish whether similar gains take place. One long-term aim is to provide schools with a reading intervention that is simple to implement and maintain. It is hoped that following the research, school staff will continue to roll out Reciprocal Teaching across their setting to enable other pupils to benefit from this approach.

Methodology

A mixed method approach will be adopted. In order to explore both aspects of reading comprehension as conceptualised by The Simple View of Reading (Gough & Tunmer, 1986), the BAS3 (British Ability Scales: Third Edition) will be used to assess vocabulary, with the YARC (York Assessment of Reading for Comprehension) being used to determine reading comprehension skills. These tests have been chosen due to their recent normative data collection (2011 and 2009 respectively). Qualitative data will be collected after the Reciprocal Teaching programme, in the form of semi-structured interviews to gather participants' views.

Participants

Pupils that have been identified by school staff as 'stagnating' in reading progress or having difficulty with reading comprehension will take part. Currently, six pupils have been identified in one school, with further individuals to follow in other schools. The Reciprocal Teaching programme will take place over a period of twelve weeks, with two sessions taught per week. Teaching Assistants (TAs) will be trained to deliver sessions, with support from the researcher conducting this study.

Focus groups will be held with pupils following the Reciprocal Teaching programme to ascertain their views. The class teachers, TAs and SENCos involved will evaluate the intervention in semi-structured individual interviews, which will be analysed through thematic analysis.

Section 3 Participants

Please answer the following questions giving full details where necessary. Text boxes will expand for your responses.

a.	Will your research involve human participants?	Yes ☒	No ☐ ⇨ *go to Section 4*

b. Who are the participants (i.e. what sorts of people will be involved)? Tick all that apply.

☐ Early years/pre-school	☐ Unknown – specify below
☒ Ages 5-11	☒ Adults *please specify below*
☐ Ages 12-16	☐ Other – specify below
☐ Young people aged 17-18	

NB: Ensure that you check the **guidelines** (Section 1) carefully as research with some participants will require ethical approval from a different ethics committee such as the National Research Ethics Service (NRES).

c. If participants are under the responsibility of others (such as parents, teachers or medical staff) how do you intend to obtain permission to approach the participants to take part in the study?

(Please attach approach letters or details of permission procedures – see Section 9 Attachments.)

Initially, members of school staff are to be approached by a trusted member of the borough (a Senior Educational Psychologist with experience of working within the borough) as well as the researcher. Once participants are selected, information and consent forms will be read and completed by: Head teachers of the schools, the TAs, parents of the pupils involved and the young people that will be participating. Following this, the researcher will work collaboratively with the Special Needs Coordinators (SENCos), Class Teachers, TAs and pupils to plan a programme that will aim to meet individuals' needs.

d. How will participants be recruited (identified and approached)?

School staff will identify individuals whom they have highlighted as requiring additional

	support with reading comprehension. Once consent by parents is obtained a meeting with students, the researcher and TAs will take place to discuss the intervention and to answer any questions pupils may have.
e.	Describe the process you will use to inform participants about what you are doing. Information will be sent out with the consent forms to parents of pupils and to school staff detailing aims of research and approach to be taken. Discussions will be held with all members of school staff and children in addition to these documents, with the opportunity for such individuals to ask questions at any point in the research. The opportunity to opt out will also be discussed and emphasised that this can take place at any time.
f.	How will you obtain the consent of participants? Will this be written? How will it be made clear to participants that they may withdraw consent to participate at any time? *See the guidelines for information on opt-in and opt-out procedures. Please note that the method of consent should be appropriate to the research and fully explained.* Pupils will complete a form to communicate their consent. This will be explained to them by a familiar member of school staff. One of the statements to be ticked explains that participants may opt out at any time without providing an explanation and that there would be no repercussions for this.
g.	**Studies involving questionnaires:** Will participants be given the option of omitting questions they do not wish to answer? Yes ☒ No ☐
	If **NO** please explain why below and ensure that you cover any ethical issues arising from this in section 8.
h.	**Studies involving observation:** Confirm whether participants will be asked for their informed consent to be observed. N/A Yes ☐ No ☐

	If **NO** read the guidelines (Ethical Issues section) and explain why below and ensure that you cover any ethical issues arising from this in section 8.
i.	Might participants experience anxiety, discomfort or embarrassment as a result of your study? Yes ☐ No ☒
	If **yes** what steps will you take to explain and minimise this? If **not**, explain how you can be sure that no discomfort or embarrassment will arise? Participants and staff will be given the opportunity to opt out at any point without giving any explanation and without any repercussions for choosing to do this. Participants and staff involved will be referred to by code in any writing so that confidentiality is maintained during and after the research.
j.	Will your project involve deliberately misleading participants (deception) in any way? Yes ☐ No ☒
	If **YES** please provide further details below and ensure that you cover any ethical issues arising from this in section 8.
k.	Will you debrief participants at the end of their participation (i.e. give them a brief explanation of the study)? Yes ☒ No ☐
	If **NO** please explain why below and ensure that you cover any ethical issues arising from this in section 8.

l.	Will participants be given information about the findings of your study? (This could be a brief summary of your findings in general; it is not the same as an individual debriefing.) Yes ☒ No ☐
	If **no**, why not?

Section 4 Security-sensitive material Only complete if applicable			
Security sensitive research includes: commissioned by the military; commissioned under an EU security call; involves the acquisition of security clearances; concerns terrorist or extreme groups.			
a.	Will your project consider or encounter security-sensitive material?	Yes ☐ *	No ☒
b.	Will you be visiting websites associated with extreme or terrorist organisations?	Yes ☐ *	No ☒
c.	Will you be storing or transmitting any materials that could be interpreted as promoting or endorsing terrorist acts?	Yes ☐ *	No ☒
** Give further details in **Section 8 Ethical Issues***			

Section 5 Systematic review of research Only complete if applicable			
a.	Will you be collecting any new data from participants?	Yes ☐ *	No ☐
b.	Will you be analysing any secondary data?	Yes ☐ *	No ☐
** Give further details in **Section 8 Ethical Issues*** *If your methods do not involve engagement with participants (e.g. systematic review, literature review) **and** if you have answered **No** to both questions, please go to **Section 10 Attachments.***			

Section 6 Secondary data analysis Complete for all secondary analysis				
a.	Name of dataset/s			
b.	Owner of dataset/s			
c.	Are the data in the public domain?	Yes ☐ No ☐ ***If no,*** *do you have the owner's permission/license?* Yes ☐ No* ☐		
d.	Are the data anonymised?	Yes ☐ No ☐ *Do you plan to anonymise the data?* Yes ☐ No* ☐ *Do you plan to use individual level data?* Yes* ☐ No ☐ *Will you be linking data to individuals?* Yes* ☐ No ☐		
e.	Are the data sensitive (DPA 1998 definition)?		Yes* ☐	No ☐
f.	Will you be conducting analysis within the remit it was originally collected for?		Yes ☐	No* ☐
g.	**If no,** was consent gained from participants for subsequent/future analysis?		Yes ☐	No* ☐
h.	**If no,** was data collected prior to ethics approval process?		Yes ☐	No* ☐

** Give further details in **Section 8 Ethical Issues***

*If secondary analysis is only method used **and** no answers with asterisks are ticked, go to **Section 9 Attachments.***

Section 7 Data Storage and Security *Please ensure that you include all hard and electronic data when completing this section.*			
a.	Confirm that all personal data will be stored and processed in compliance with the Data Protection Act 1998 (DPA 1998). *(See the Guidelines and the Institute's Data Protection & Records Management Policy for more detail.)*		Yes ☒
b.	Will personal data be processed or be sent outside the European Economic Area?	Yes ☐ *	No ☒

*** If yes,** please confirm that there are adequate levels of protections in compliance with the DPA 1998 and state what these arrangements are below.

c.	Who will have access to the data and personal information, including advisory/consultation groups and during transcription? Sarah Relton (researcher) and Jackie Masterson (Supervisor)
During the research	
d.	Where will the data be stored? In a password protected file on the researcher's laptop
e.	Will mobile devices such as USB storage and laptops be used? Yes ☒ * No ☐ * **If yes,** state what mobile devices: USB storage and laptop. * **If yes,** will they be encrypted?: Yes, the USB storage will be encrypted and any files on the laptop will be password-protected. The Laptop will be locked away when not being used by the researcher and a password is required to log on.
After the research	
f.	Where will the data be stored? On encrypted UBS storage and within password-protected files on the researcher's laptop.
g.	How long will the data and records by kept for and in what format? 1 year in encrypted UBS storage and within password-protected files on the researcher's laptop.
h.	Will data be archived for use by other researchers? Yes ☐ * No ☒ * **If yes,** please provide details.

Section 8 Ethical issues

Are there particular features of the proposed work which may raise ethical concerns or add to the complexity of ethical decision making? If so, please outline how you will deal with these.

It is important that you demonstrate your awareness of potential risks or harm that may arise as a result of your research. You should then demonstrate that you have considered ways to minimise the likelihood and impact of each potential harm that you have identified. Please be as specific as possible in describing the ethical issues you will have to address. Please consider

/ address ALL issues that may apply.

Ethical concerns may include, but not be limited to, the following areas:

- Methods
- Sampling
- Recruitment
- Gatekeepers
- Informed consent
- Potentially vulnerable participants
- Safeguarding/child protection
- Sensitive topics
- International research
- Risks to participants and/or researchers
- Confidentiality/Anonymity
- Disclosures/limits to confidentiality
- Data storage and security both during and after the research (including transfer, sharing, encryption, protection)
- Reporting
- Dissemination and use of findings

<u>Methods</u>

The participants' class teachers and TAs will contribute to the planning and development of the Reciprocal Teaching programme, thus catering for the needs of such individuals. Time out of class will be considered carefully to ensure that pupils do not miss crucial learning opportunities. Pupils will be made aware of the involvement of the TAs and class teachers, enabling additional explicit means of communication, for example: in the event that they wish to discuss an aspect of the intervention that they do not feel comfortable discussing with the researcher.

Student 'voice' will be sought throughout the study to encourage open and honest communication around teaching materials and approaches through verbal and written format. Plenary diaries will be completed at the end of each session by participants, with the option of an anonymous messaging and ideas system to be reviewed by the researcher so that any potential issues may be resolved.

Adults and children will be made aware of the choice to opt out at any point, without any repercussions.

One aspect to be considered is the supervision of the TA by the researcher regarding use of Reciprocal Teaching materials and approaches. It is important to consider the potential power imbalance that could arise as a result of such supervision; hence a collaborative approach to working will be established from the initial point of contact with school staff.

Workload and use of a novel intervention may result in feelings of anxiety and concern from the TA. Regular discussions will take place with the SENCo to ensure that all staff involved are

satisfied with procedures and approaches.

Safeguarding/child protection

All adults working with participants have full DBS disclosure. When working with the small group, doors will be propped open to enable constant monitoring by other school staff. Any disclosures related to child protection made by pupils will be reported according to the school's safeguarding policy and procedures. The researcher will ask for copies of this policy along with instructions regarding whom to approach in the event of a disclosure.

Sampling

Participants are to be selected by school staff that know them well, hence increasing the likelihood of the intervention being beneficial. In addition, parents will be approached in a sensitive manner by adults that they are familiar with, increasing the probability of engagement and feelings of reassurance.

Vulnerable participants

The researcher will read relevant information about each pupil involved and will hold discussions with the SENCo or Head teacher to determine whether any topics covered during sessions may be of a sensitive nature to certain individuals. This will also be considered in relation to adults involved in the research. Tasks will be explained clearly to students to avoid confusion or uncertainty that could impact upon self-esteem. Children's well-being will be considered at the beginning of each session to ensure that it is suitable to continue working. The researcher will explain their role clearly when meeting participants so that they understand that certain information may not remain confidential (if a disclosure related to child protection is made).

Anonymity

Codes will be used to refer to participants and staff to maintain complete confidentiality throughout the gathering, analysis and reporting of data.

Data storage and security

Data will be stored on an encrypted USB and in password-protected folders on a laptop. The laptop requires a password in order for a user to log on. Data will be kept for one year under such protection before being deleted and removed from the laptop. Names will be removed

from any items of work that are collected by the researcher.

Findings

Gaining pupils' perspectives is viewed as crucial in this study in that Reciprocal Teaching will be used to influence their learning. Findings from qualitative and quantitative data will be shared in general terms with students and their parents and school staff in terms of each individual's progress.

Section 9 Further information
Outline any other information you feel relevant to this submission, using a separate sheet or attachments if necessary.

Section 10 Attachments Please attach the following items to this form, or explain if not attached			
a.	Information sheets and other materials to be used to inform potential participants about the research, including approach letters	Yes ☒	No ☐
b.	Consent form	Yes ☒	No ☐
	If applicable:		
c.	The proposal for the project	Yes ☐	No ☒
d.	Approval letter from external Research Ethics Committee	Yes ☐	No ☒
e.	Full risk assessment	Yes ☐	No ☒

Section 11 Declaration		
Yes ☐	**No** ☐	
I have read, understood and will abide by the following set of guidelines. ☒	☐	
BPS ☒	BERA ☐	BSA ☐ Other (please state) ☐
I have discussed the ethical issues relating to my research with my supervisor. ☒	☐	
I have attended the appropriate ethics training provided by my course. ☒	☐	

I confirm that to the best of my knowledge:

The above information is correct and that this is a full description of the ethics issues that may arise in the course of this project.

Name	Sarah Relton
Date	25/9/2015

Please submit your completed ethics forms to your supervisor.

Professional code of ethics

You should read and understand relevant ethics guidelines, for example:
British Psychological Society (2009) *Code of Ethics and Conduct*, and (2014) *Code of Human Research Ethics*
or
British Educational Research Association (2011) *Ethical Guidelines*
or
British Sociological Association (2002) *Statement of Ethical Practice*
Please see the respective websites for these or later versions; direct links to the latest versions are available on the Institute of Education http://www.ioe.ac.uk/ethics/.

Disclosure and Barring Service checks

If you are planning to carry out research in regulated Education environments such as Schools, or if your research will bring you into contact with children and young people (under the age of 18), you will need to have a Disclosure and Barring Service (DBS) CHECK, before you start. The DBS was previously known as the Criminal Records Bureau (CRB)). If you do not already hold a current DBS check, and have not registered with the DBS update service, you will need to obtain one through at IOE. Further information can be found at http://www.ioe.ac.uk/studentInformation/documents/DBS_Guidance_1415.pdf

Ensure that you apply for the DBS check in plenty of time as will take around 4 weeks, though can take longer depending on the circumstances.

Further references

The www.ethicsguidebook.ac.uk website is very useful for assisting you to think through the ethical issues arising from your project.

Robson, Colin (2011). *Real world research: a resource for social scientists and practitioner researchers* (3rd edition). Oxford: Blackwell.

This text has a helpful section on ethical considerations.

Alderson, P. and Morrow, V. (2011) *The Ethics of Research with Children and Young People: A Practical Handbook.* London: Sage.

This text has useful suggestions if you are conducting research with children and young people.

Wiles, R. (2013) What are Qualitative Research Ethics? Bloomsbury.

A useful and short text covering areas including informed consent, approaches to research

ethics including examples of ethical dilemmas.

Once completed and approved, please send this form and associated documents to the relevant programme administrator to record on the student information system and to securely store.

Further guidance on ethical issues can be found on the IOE website at http://www.ioe.ac.uk/ethics/ and www.ethicsguidebook.ac.uk

Email confirmation of ethical approval

From: [redacted]

Subject: Ethics Approval

Date: 19 October 2015 at 17:24:06 BST

To: Sarah Relton [redacted]

Cc: [redacted]

Dear Sarah

I am pleased to inform you that your research project **"Reciprocal Teaching: An Exploration of its Effectiveness in Improving the Vocabulary and Reading Comprehension of Key Stage Two Pupils with and without English as an Additional Language",** for the Doctorate in Professional Educational, child and Adolescent Psychology, has been given ethical approval. If you have any further queries in this regard, please refer the enquirer to your supervisors.

Please note, if your proposed study and methodology changes markedly from what you have outlined in your ethics review application you may need to complete and submit a new or revised application. Should this possibility arise, please discuss with your supervisors in the first instance before you proceed with a new/revised application.

Your ethical approval form has been logged and uploaded to the UCL IOE database.

Good luck with your data collection.

Best wishes

[redacted]

[redacted]

Programme Administrator

Doctorate in Professional Educational, Child and Adolescent Psychology

Psychology & Human Development

Institute of Education

25 Woburn Square

London WC1H 0AA

****

UCL Institute of Education: Number 1 worldwide for Education, 2015 QS World University Rankings www.ucl.ac.uk/ioe

Appendix M - Consent forms for Head Teacher, Staff members, parents and children

Head Teacher
School address
Dear Mrs. X,

RE: RECIPROCAL TEACHING INTERVENTION

As you are aware from my work with [SENCo], I am a Trainee Educational Psychologist in the second year of doctoral training at the UCL Institute of Education. As part of my training course I am required to carry out a thesis and am writing to you to request your permission to complete this research in your school.

The project would involve working with Teaching Assistants or teachers to develop materials for Reciprocal Teaching sessions, which we would both carry out with the children over a period of 12 weeks. The aim of these sessions would be to build upon children's vocabulary and to improve reading comprehension skills.
Sessions would be tailored according to children's needs and their progress (according to the aims of each session) would be closely monitored to inform planning for subsequent content. Conversations with the class teacher would take place to select the most appropriate times for students to be withdrawn from class. Any written records produced from this work would remain anonymous, with pupils and staff having the right to withdraw at any point.

I would really appreciate the opportunity to work collaboratively with your school on this project with the aim of improving the vocabulary and reading skills of the young people involved. If you have any questions or would like to discuss this further, please contact me on the email address below.

I look forward to hearing from you,

Yours sincerely,

S. Relton
Sarah Relton
Trainee Educational Psychologist

Thesis:

Reciprocal Teaching: an exploration of its effectiveness in improving the Vocabulary and Reading Comprehension of Pupils with and without EAL in Key Stage Two.
HEAD TEACHER CONSENT FORM

Researcher: Sarah Relton

- ✓ I would like my school to be involved in the research study mentioned above.
- ✓ I understand what the project entails and am aware of whom to contact to ask questions.
- ✓ I understand that participation is voluntary and that staff and children can choose whether to take part in this study.
- ✓ I understand that both staff and children have the right to withdraw at any time and may inform Sarah Relton if this is the case.
- ✓ I am aware that all data will remain confidential, will be stored securely and will be referred to using a coded system.

[Please complete the following in block capital letters]

- School name: _____

Name of head teacher: _____

Date: _____ Signature: _____

- Person taking consent: _____

Date: _____ Signature: _____

[To be signed and dated in the presence of the head teacher]

- Lead researcher: _____

Date: _____ Signature: _____

Once this has been signed, a copy will be made for you and the researcher will store the original document in a secure location.

School address

Dear _____ (Teaching Assistant),

I am writing to you to request your permission to become involved in the research project related to Reciprocal Teaching (RT). This would involve us working together to plan sessions for the children, discussing their progress and generating next steps.

The project will involve developing materials for RT sessions (at least 2 per week), which you would carry out with the children over a period of 12 weeks.

Sessions would be tailored according to children's needs and their progress (according to the aims of each session) would be closely monitored to inform planning for subsequent content. Conversations with yourself and the class teacher would take place to select the most appropriate times for students to be withdrawn from class.

Any written records produced from this work would remain anonymous, with yourself and pupils having the right to withdraw at any point.

I would really appreciate this opportunity to work collaboratively with you to improve the reading skills of the young people involved. If you have any questions or would like to discuss this further, please contact me on the email address below.

I look forward to hearing from you,

Yours sincerely,

S. Relton
Sarah Relton

Trainee Educational Psychologist

Research Project:

Reciprocal Teaching: an exploration of its effectiveness in improving the Vocabulary and Reading Comprehension of Pupils with and without EAL in Key Stage Two.
SCHOOL STAFF CONSENT FORM

Researcher: Sarah Relton

- ✓ I would like to be involved in the research study mentioned above.
- ✓ I understand what the project entails and am aware of whom to contact to ask questions.
- ✓ I understand that participation is voluntary and that I can choose whether to take part in this study.
- ✓ I understand that I have the right to withdraw at any time and may inform Sarah Relton if this is the case.
- ✓ I am aware that all data will remain confidential, will be stored securely and will be referred to using a coded system.

[Please complete the following in block capital letters]

- School name: _____

Name: _____

Date: _____ Signature: _____

- Person taking consent: _____

Date: _____ Signature: _____

[To be signed and dated in the presence of Ms. X]

- Lead researcher: _____

Date: _____ Signature: _____

Once this has been signed, a copy will be made for you and the researcher will store the original document in a secure location.

[To be transferred onto the school's letterhead]
Dear Parent/Carer,

Project: Developing Vocabulary and Improving Reading Skills.
My name is Sarah Relton and I am a trainee Educational Psychologist in my second year of doctoral training at the UCL Institute of Education in London. Part of my role involves finding ways to help children with their learning in school. I taught as a primary school teacher for 9 years before beginning this training so have experience of teaching and knowledge of the National Curriculum. I have full DBS enhanced disclosure and work with families, children and young people within the Local Authority.

I am writing to you to ask permission for your child to be involved in a project I am carrying out that focuses on building children's vocabulary and improving reading comprehension. Children involved in the project would work in a small group 2-3 times per week for 12 weeks. This group work would happen outside of the classroom and each session would last for approximately 20 minutes. I have spoken with their class teacher to make sure that they will not miss other important learning.

During sessions children will be taught about the skills they need to use when reading using Reciprocal Teaching (an evidence-based programme that has been shown to improve reading comprehension). These sessions will involve reading part of a text and exploring it in detail through a range of interactive activities.

To make sure that children have the best chance to improve their reading I will collect information on their Literacy skills before and after this group work so that any changes are clear. I will also ask pupils their opinion at the end of each session so that they can talk about whether the skills they are learning are helping them when reading. This information will be kept strictly confidential and will be locked in a secure place with a code used for your child's name. They will remain anonymous throughout this project and can withdraw at any time.

If you are happy for your child to take part in this project please sign the consent form below by Wednesday 27th January. This confirms that you are giving your permission for them to take part.

Please contact me on the email address below if you have any questions and I look forward to hearing from you.

Yours faithfully,
S. Relton
Sarah Relton
Trainee Educational Psychologist

Research Project: Using Reciprocal Teaching to develop vocabulary and improve reading comprehension skills.

PARENT/CARER CONSENT FORM

Researcher: Sarah Relton

Please write your initials in the boxes below to give your permission for your child to take part in this project:

☐ I would like my child to be involved in the research project mentioned above.

☐ I understand what the project involves and am aware of whom to contact to ask questions.

☐ I understand that participation is voluntary and that my child can choose whether to take part in this study.

☐ I understand that myself and my child have the right to withdraw at any time and may inform Sarah Relton if this is the case.

☐ I am aware that all data will remain confidential, will be stored securely and will be referred to using a coded system.

[Please complete the following in block capital letters]

- Child's name: _____

Parent/Carer's name: _____

Date: _____ Signature: _____

- Person taking consent: _____

Date: _____ Signature: _____

[To be signed and dated in the presence of school staff]

- Lead researcher: _____

Date: _____ Signature: _____

Once this has been signed, a copy will be made for you and the researcher will store the original document in a secure location.

Please may you complete the following information. Again, this will remain confidential:

Child's main language_____

Language/s spoken at home_____

PUPIL CONSENT FORM

Researcher: Sarah Relton

Please tick the boxes next to the sentences that you agree with.

☐ I have been told about the Reading Project and I know I can speak to my class teacher if I have any questions.

☐ I understand that I will do some reading with Sarah and (TA) outside of the classroom.

☐ I understand that I can stop taking part in this project if I want to.

☐ I understand that my work will be locked away safely and that a code will be used instead of my name.

☐ I would like to take part in the Reading Project.

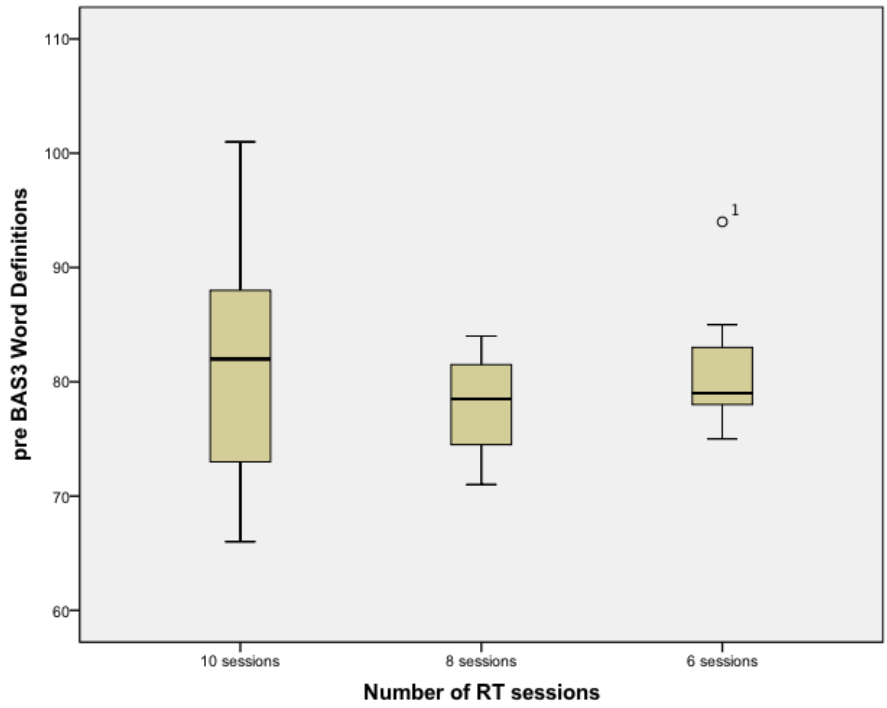
- My name: _____
- My signature: _____

Date: _____

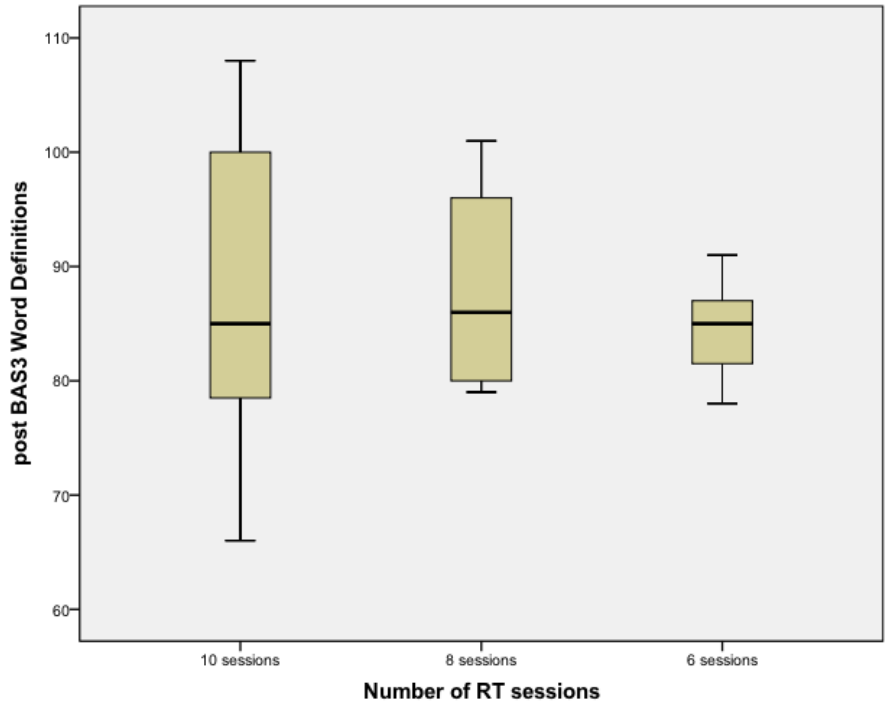
Once this has been signed, Sarah will lock this paper away in a secure place.

Appendix N - Initial exploration of data

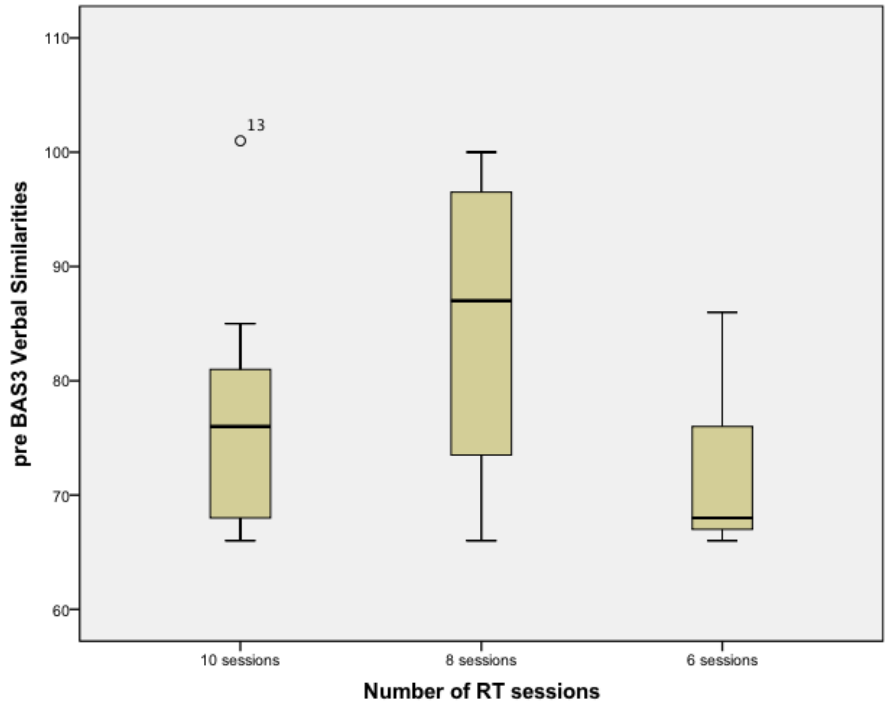
Boxplots were generated to show variability of scores within and between groups and to identify any outliers. As seen in the Boxplots, two outliers are present, which SPSS defines as extending more than 1.5 box lengths from the end of the box (Pallant, 2010). Outliers were included within analyses as means did not vary greatly from 5% trimmed means.



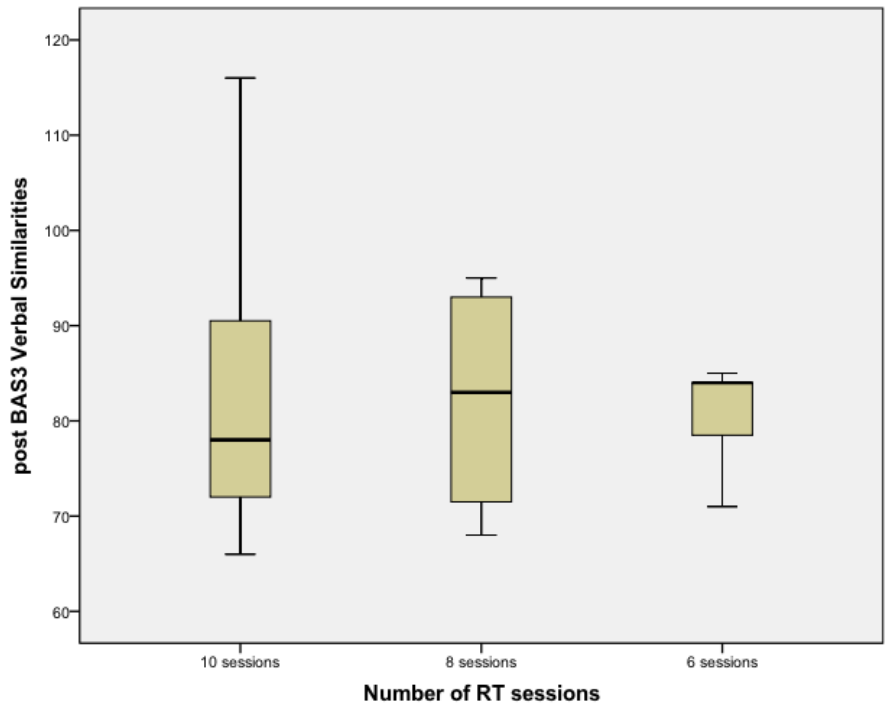
Boxplot to show variability of BAS3 Word Definitions pre-test scores between the three groups



Boxplot to show variability of BAS3 Word Definitions post-test scores between the three groups



Boxplot to show variability of BAS3 Verbal Similarities pre-test scores between the three groups



Boxplot to show variability of BAS3 Verbal Similarities post-test scores between the three groups.

Appendix O - Additional YARC measures

Results indicated that for the group overall, differences were not significant for Reading Accuracy: $t(21)=-1.872$, $p=0.075$, Reading Rate: $t(21)=-0.456$, $p=0.653$ or Reading Comprehension: $t(21)=0.077$, $p=0.939$. A significant difference was found between pre- and post-BAS3 Word Reading scores: $t(21)=-2.886$, $p=0.009$.

Appendix P – Example of semi-structured interview transcript

SENCo School B

What is Reciprocal Teaching?
A reading intervention where children are encouraged to use strategies (summarising, clarifying, questioning, predicting) with a range of text.

How was Reciprocal Teaching carried out and how many sessions took place?
It was initiated by a trainee educational psychologist (EP) who is an experienced teacher. Children were initially identified by the school SENCo and discussed at SENplan meeting. An introductory training session was delivered by the EP to specific class teachers and their support staff. Some of the staff observed the EP taking some of the group sessions. Class teachers tried to incorporate it into their Guided Reading sessions and some support staff tried to continue the sessions with the small group. The number of sessions varied so I am unsure of the exact number that took place.

What do you think about Reciprocal Teaching?
As an accredited Reading Recovery teacher and SENCo/SENDCo who has worked closer with Speech and Language therapists I can see a lot of benefits of RT. I have seen how children learning to 'clarify' words or phrases – has benefited some of the children who have specific SLT targets or EAL needs. It has helped them develop their vocabulary knowledge and their research skills (using a dictionary for example) and giving them the confidence to ask questions if they are unsure. Not only has the 'summarising' strategy helped draw out the main ideas and important information, it has help with retelling skills and sequencing of information using vocab from the text. In my experience supporting children with reading difficulties, children often don't have many opportunities to apply (or share) 'predicting' skills – RT gives them this opportunity. The adult led, small group intervention that is RT gives children a 'safe' environment to make predictions and ask questions – particularly the quieter members of a large mainstream class.

Would you be interested in using Reciprocal Teaching in the future and why?
Yes. Going forward, I would be keen to see it introduced to all (KS2) classes as part of the Guided Reading programme, with opportunities for the most experienced Teaching Assistants or HLTAs to offer/extend it to a small group of children. A pre-and post-test that is quick and easy for TA/HLTAs to administer, would need to be identified to help measure the impact of the intervention.

Was there anything that helped with implementing Reciprocal Teaching in school?
EP carrying out sessions with staff being able to observe. One of the groups (year 4) incorporated the RT sessions within their guided reading sessions and because the children were all from this class, it was easier to timetable.

Were there any difficulties with implementing Reciprocal Teaching and if so, what were they?
Teaching staff were not clear on the expectations for themselves- the teachers thought the sessions were going to be taken by the EP as part of her research. The training session took place in the Spring term when timetables and routines were already established. One teacher missed the training session, others commented that although they found it useful, they needed more time to prepare or time to implement it. Staff felt a little underprepared and perhaps slightly overwhelmed with their own workload. Timetabling proved particularly difficult as one of the groups (year 5) had children from 3 different classes. Their guided reading sessions were at different times. The EP came at varying times of the day and some sessions took longer than expected. These sessions

were out of the classroom so the teachers could not observe many sessions. Teachers commented that RT was encouraging children to call out and talk over others (which they weren't keen on) and they perceived this as a step back (with behaviour management).

Would you make any changes to the way Reciprocal Teaching was introduced in school? If so, what would these be?
Training to the whole staff (or at least to KS2), driven by the English subject leader, with the support of Senior Leadership Team (SLT). This would then make it more transparent and manageable if it was to be offered then as an intervention. More guidance with text to use and having these before it was launched would help the staff.

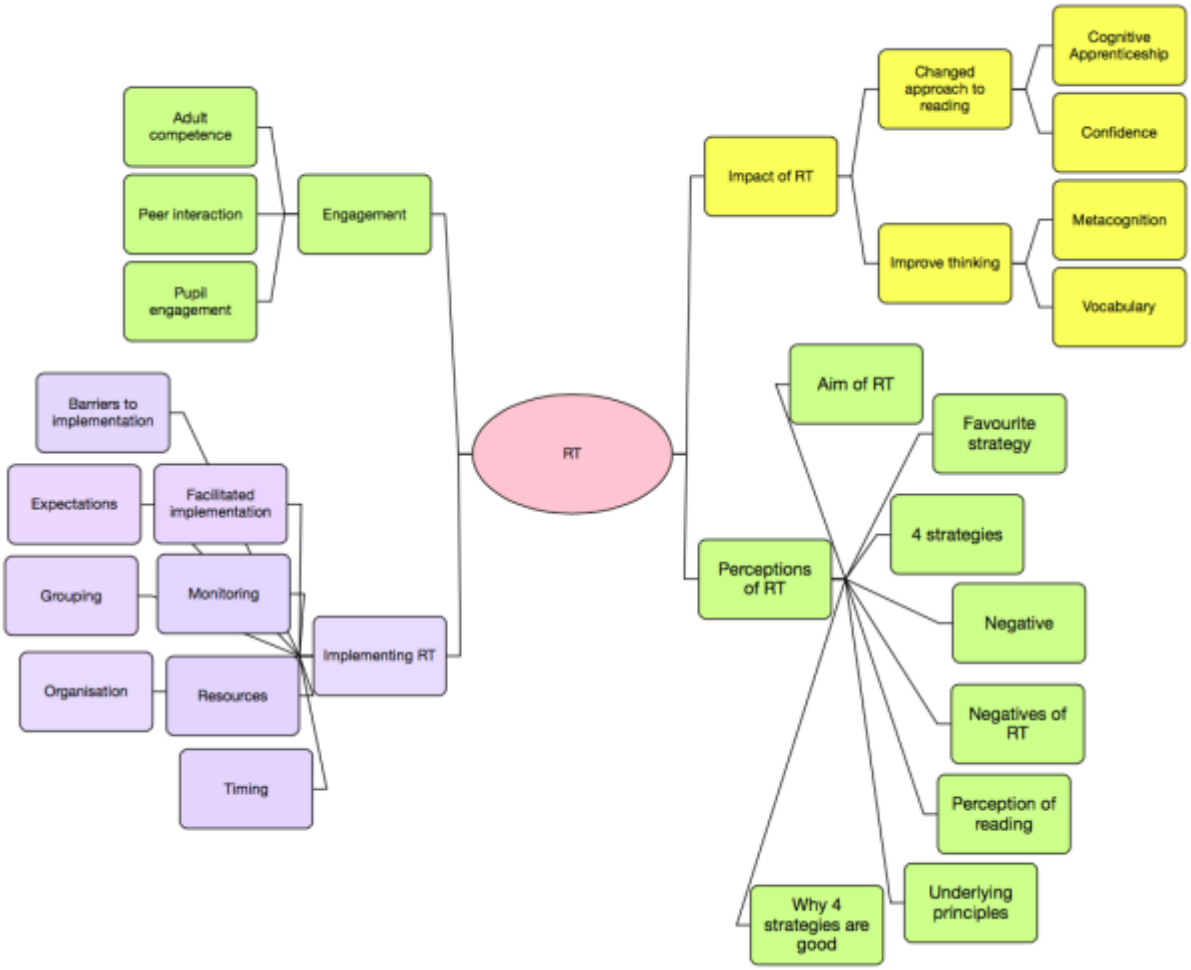
Did you notice any differences with pupils after using Reciprocal Teaching with them?
They were enthusiastic and confident in discussions.
One girl in particular kept asking me when they were going to be having their reading session again.

Other comments you'd like to make
An update following exit assessments about the impact of RT for these children and the next steps, would be helpful to school and home.

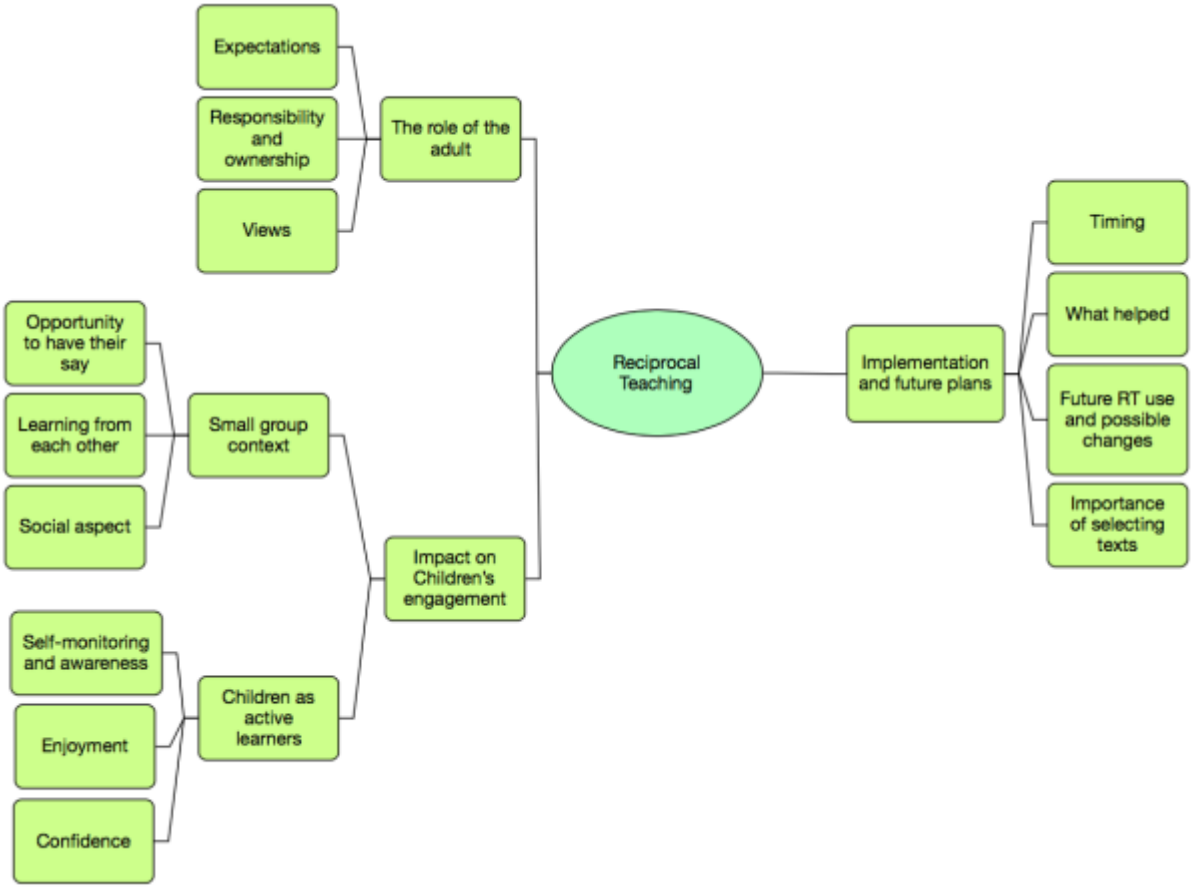
Appendix Q - Visual representation of development of thematic analysis

In line with Braun and Clarke's (2006) Thematic Analysis stages.

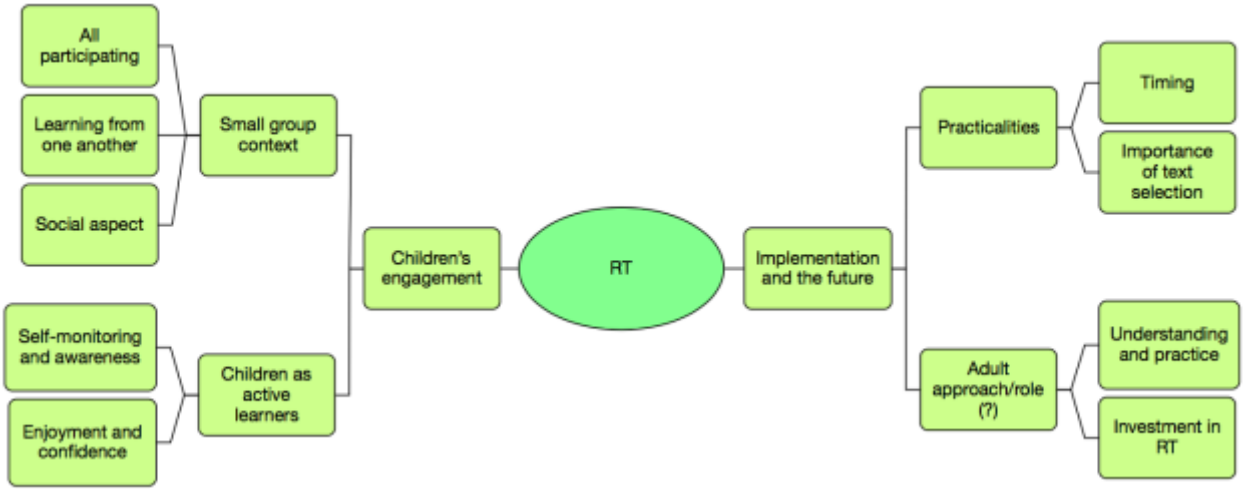
Phase 3 (searching for themes)



Phase 4 (reviewing themes)



Phase 5 (defining and naming themes)



Continuation of Phase 5 (defining and naming themes)

Final themes