Raising the reading skills of secondary-age students with severe and persistent reading difficulties: Evaluation of the efficacy and implementation of a phonics-based intervention programme.

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Abstract

The importance of reading skills to academic achievement, job acquisition and future success is well documented. Most of the research on reading interventions focuses on children in primary schools but many children start secondary school with very poor reading skills and schools require evidence-based interventions to support these children.

The aims of this study were two-fold (i) to explore the efficacy of a phonics-based reading intervention programme, Toe By Toe, among a group of 30 secondary age students with severe reading difficulties from 2 large schools in the London borough of Barking and Dagenham; and (ii) to examine perceived key barriers to implementing this intervention programme in secondary schools with a view to better understanding how these barriers could be overcome in practice. A quasi-experimental mixed methods design was used to evaluate the efficacy of Toe By Toe: 15 students allocated to an Experimental group and 15 allocated to a Waiting Control Group (matched at baseline for single word reading accuracy). Quantitative semi-structured interviews were also carried out ascertain the views of the students and teaching staff on the intervention programme and its implementation.

Results showed the intervention brought about a statistically significant improvement in the student's phonic decoding accuracy, single word reading accuracy and phonic decoding fluency skills. The intervention did not improve sight word reading fluency, passage reading fluency or comprehension. Interviews with staff and students indicated a wide range of positive responses to the intervention and some key barriers to implementation including cost and logistics. In conclusion, the intervention can be used with secondary-age English-speaking students to raise their reading skills in the areas indicated but care should be taken that users are aware of its limitations and potential barriers to implementation. Educational Psychologists can support schools in implementing an intervention of this nature. This study adds to the evidence base for the use of reading interventions in secondary schools to support students with severe reading difficulties.

I hereby declare that, except where explicit attribution is made, the work presented in this thesis is entirely my own.

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Chapter 1: Introduction

> "What is literacy? It is the means by which a child can extend its imagination into all intellectual disciplines. If a young mother in Sainsbury's dreams of her daughter being a concert pianist, a ballerina, a film star or a surgeon, all of these careers, fanciful and real, depend on her daughter's early steps in literacy"
>
> – Sebastian Walker, Founder of Walker Books

The issue of raising literacy attainment in English schools has been on successive government agendas for at least the last 60 years. As far back as the 1940s records were being gathered and kept by central government on reading and writing attainment in schools across the country, as well as analysis of how attainment was changing from year to year (Brooks & Rashid, 2010). The fact that government takes a keen interest in raising the literacy standards of school children is of no surprise. It is hard to imagine how an adult could fully function in a modern society without having the ability to read and write at a basic level and this obviously has a major impact not only on their ability to find employment but also the extent to which they can travel, use the internet and other new technologies, access entertainment and communicate with friends, family and the wider world. Thus it would appear that on an individual level, low literacy skills can severely limit future prospects and quality of life.

With this in mind it is troubling to note that in 2006 the Leitch Review (commissioned by the English government to examine the UKs long-term skills needs) claimed that 1 in 6 adults could not read at the expected level of an 11 year old (Leitch Review of Skills, 2006). The report went on to warn that the UK faces a serious skills shortage if steps are not taken to reduce this problem. Following this the labour government at the time set the target that by 2020, 95% of adults should achieve 'functional literacy' which represented a rise of approximately 10% from the 2006 levels. How far the present coalition government will go towards meeting this target, or if they intend to adopt it as a target at all, remains to be seen. However, Brooks & Rashid (2010) highlight the need for clear Local Authority and government strategies and investment

in literacy attainment in schools. The findings in this report which were widely reported in the national press on its publication showed that there had been a steady increase in literacy attainment in England between 1948 and 1960. The figure then remained almost completely constant for the next 25 years. A further gradual improvement in standards is seen between 1997 and 2004. At this point literacy attainment seems to plateau once again with no significant improvements seen since that time.

The most significant aspect of this report with regard to the present study are findings which show that in 2010, 17% of 16-19 year olds in the UK have "less than functional literacy skills" and that this figure has remained more or less constant for almost a decade. This claim makes use of a Department of Education and Employment (DfEE) definition (1999) where the minimal level of "functional literacy" is defined as National Curriculum (NC) Level 1 and "less than functional literacy" is defined as entry level.

Brooks & Rashid (2010) describe an "entry level" of skills as follows:

> "the ability to handle only simple texts and straightforward questions on them where no distracting information is present or nearby. Making inferences and understanding forms of indirect meaning (e.g. allusion, irony) are likely to be difficult or impossible" p.64

They go on to state "this is less than the functional literacy needed to partake fully in employment, family life, citizenship and to enjoy reading for its own sake" (p.64).

When these figures are taken into account it is perhaps no surprise that the rate of 16-24 year olds in the UK classified as NEET (Not in Employment, Education or Training) at the end of 2009 was at 14.8% according to data published by the Department for Children, Schools and Families (DCSF) on the government's data website. This represents over 875,000 young people. While these figures do not reveal the literacy levels of the 16-24 year olds who are NEET they do show that among this group, 42% have no qualifications. Although evidence is limited it is reasonable to assume that at least part of the cause for leaving school with no qualifications is low functional literacy. Certainly, this is the view of the National Youth Agency (2010) which claims

that "low literacy levels among young people (makes) day-to-day life more challenging and further distances them from learning and work opportunities".

As well as being a governmental concern, the issue of poor reading is also reflected in the popular media. Reports on the above Brooks & Rashid research appeared in several national newspapers and news websites including The Guardian, The Telegraph and the Teaching Times. At the time of writing (January 2012) the London Evening Standard is running a campaign entitled "*Get London Reading*", encouraging their readers to donate money to the charity Volunteer Reading Help (VRH) or offer themselves as volunteers to help improve reading attainment in London's most deprived primary schools, which has raised £250, 000 so far.

The present study aims to (i) evaluate an existing intervention that can be used with secondary-age children, Toe By Toe, but which has a limited evidence base for its efficacy and (ii) explore students and school staff responses to the intervention and potential barriers to implementing reading interventions in secondary schools. The first aim is to address a gap in the evidence base for effective reading intervention programmes in the older age range. While there are a wide range of reading intervention programmes available to help schools teach children struggling with their reading most are intended for primary school children (Brooks, 2007). This leaves a dearth of evidence-based reading interventions for children who reach secondary school lacking the necessary skills to read independently. The second aim is intended to explore concerns about barriers between research and practice in education (Monsen & Woolfson, 2010) and consider what factors influence the successful implementation of a reading intervention programme in secondary schools. Snowling & Hulme (2010) discuss creating a 'virtuous circle' between research and practice, whereby new research feeds into practice, which in turn gives rise to new research possibilities. There are many potential factors that could disrupt this 'circle' and impact on the implementation of a reading intervention programme including school budgets, staff availability, or access to current research. These require further exploration to ensure new evidence-based interventions are implemented as smoothly as possible, giving the students using them the best possible chance of success.

Chapter 2: Literature Review

Long term outcomes associated with low reading skills

Alongside the media interest outlined above, the importance of being able to read has been of clear on-going interest in the academic community for many decades. Evidence for this can be found in a review by Dugdale & Clark (2008) drawing on a wide range of longitudinal studies in England that have tracked their subjects since birth, to provide a profile of a person with poor literacy skills in the UK. Typical characteristics include being more likely to live in a household with no employment, less likely to have children, more likely to lead solitary lives, less able to access technology and less likely to vote. The research provides a wide range of strong evidence showing that reading has a "significant relationship" with a person's happiness and success in life.

In England alone there have been various major government policies released in addition to large-scale international comparison studies which indicate the importance of being able to read in improving a person's opportunities in life. For example, the Every Child A Reader programme (Every Child a Chance Trust, 2009) emphasises very clearly that children having a basic level of reading skill before they leave school is essential for future success. Research published by this organisation describes a range of educational risk factors associated with poor reading skills. These include anti-social behaviour, increased risk of exclusion, higher rates of truancy, more negative attitude to education and reduced likelihood of being entered in public examinations (Every Child a Chance Trust, 2009). It is useful to expand on some of these claims.

The Department for Education and Skills (DfES, 2006) reported data from 2004-2005 showing students who began secondary school with very low reading skills (defined as below NC Level 3 in English) were 5 times more likely to be excluded than students entering Key Stage 3 with average reading ability. The same report found that children starting secondary school with very low reading skills are 4 times more likely to truant than children with age-appropriate ability. While this is a useful study it should be

noted that the sample included children with a wide range of learning and behavior needs and the results cannot be solely attributed to poor reading ability.

When considering the impact of learning difficulties on an individual, the Foresight Mental Capital and Wellbeing (MCW) Project (Government Office for Science, 2008) estimated that individuals with developmental dyslexia may have their lifetime earnings reduced by £81,000 as a result of the condition if their reading difficulties are not identified and targeted early. It also goes on to note dyslexic literacy difficulties can reduce the probability of obtaining five or more GCSEs (Grades A*-C) by 3-12% (Government Office for Science, London, 2008).

Socio-economic costs of low reading skills

Having established some of the individual and personal costs of very low reading skills to educational and life outcomes as outlined above (Dugdale & Clark, 2008), it is also worth considering the economic costs of these outcomes. Severe reading difficulties (categorised as Speech, Language and Communication Difficulties) or reading difficulties combined with difficulties in some other area of learning is the most commonly occurring type of Special Educational Need (SEN). This translates to 34% of these children having statements of SEN by the time they leave primary school at the age of 11 (DfES, 2006) at considerable on-going cost to schools and LAs. This is in addition to the cost of SEN provision for those not on statements and the cost of permanent exclusions and truanting.

Furthermore, research clearly indicates that poor readers are much less likely to gain employment than confident readers and if they do find employment it is likely to be low-paid. A large longitudinal study by Bynner & Parsons (1997) followed 17,000 people from the age of 7, born in one week in 1958. They explored the impact of poor basic skills for participants in their sample at 37 year old and found that among those that had low reading levels and had left school at the age of 16, 4% had *never* had a job. They also found that among those who were long-term unemployed, over a fifth had very low reading levels. This study also found that poor readers were much more likely to be employed in manual work and less likely to have modern work skills (e.g.

computing), vocational training, formal qualifications or work experience. Interestingly, these differences seemed unrelated to social exclusion risk factors, which is to say that they appeared to be strongly associated with a lack of reading skill rather than any associated social disadvantage. In a later large longitudinal study Bynner & Parsons (2006) tracked people's progress from the age of 17 to 37 and found that men and women with poor literacy skills had the lowest rate of full-time employment by the age of 30 and that people with the lowest rates of literacy were the least likely to be employed. Assessments used in this study to measure literacy skills are not specifically named.

Other economic costs include the costs of crime for those children that become involved in criminal activity after leaving school. A report from the Social Exclusion Unit (2002) showed that 48% of the prison population read poorly (at or below NC Level 1) compared to around 20% of the general population and that 25% of juveniles in custody have a reading age below that of an average 7 year old. Further evidence shows that the incidence of dyslexia in the prison population is at 21-23%, around 3-4 times that of the general population (Rack, 2005). These results should be treated with some caution though as a prison population has only limited generalizability to the wider population of adults with dyslexia.

The potential cost to government of children leaving school with low reading skills is therefore very clear. A high proportion of this cohort (compared to their more literate peers) are likely to find it very difficult to find work and be unemployed for extended periods of time as a consequence. This translates into lower tax revenues, higher benefits payments and possibly higher crime for any government. While a government may have genuine concerns for the happiness, well-being and quality of life of these children and young adults (at an espoused level at least), the more pragmatic and quantifiable financial strain on the country's economy must also be considered and addressed.

Due to the complexity of the calculations involved and the need to estimate in certain areas, the exact cost of low literacy skills to the economy is hard to establish and

estimates of costs vary widely. However, a recent report by the Every Child a Chance Trust (2009) attempted a costing by drawing on a wide range of sources from the government and other agencies to calculate costs in each of the categories associated with failure to obtain basic reading and writing skills before leaving primary school. The categories included in this calculation were education costs (SEN support, truancy, statements, EP time) employment costs (lost tax revenue, benefit payments), social costs, health costs and crime costs. In this report the total upper-boundary cost to the treasury for children leaving school with low reading skills is in the region of £2.5 billion every year (the lower boundary figure provided is in the region of £200million). In support of this estimate, in 2006 KPMG released a report which estimated the annual cost of low reading skills to be £1.73 billion taking into account factors such as unemployment, crime, health and special needs support. The report notes than the estimate is conservative and also does not include various intangible benefits of strong reading skills (KPMG, 2006).

There are clearly a wide range of reasons why people experience poor reading skills and these can include learning difficulties, low quality education, disaffection with learning, parental illiteracy, family history of a language and literacy difficulty or any combination of these (Dugdale & Clark, 2008). The recurrence of poor reading skills when exploring the profiles of low-achieving and disadvantaged adults in the UK is clear. It therefore seems likely that poor reading ability can contribute to an on-going cycle of socio-economic factors which can lead to a lifetime of limited opportunities and under-achievement for a young person.

As well as these long-term risk factors associated with low reading ability, it is important to develop a clear understanding of some of the language and cognitive difficulties that contribute to low reading ability in order to gain a clearer understanding of how reading difficulties may be identified, targeted and remediated in schools.

Defining and diagnosing reading difficulties

It is useful at this stage to provide a review of the research evidence informing current thinking in this area, particularly research investigating the processes involved in reading development and difficulties learning to read, before considering the evidence from research examining effective reading interventions.

Although the vast majority of children learn to read with apparent ease and do not require any additional support other than that which is typically provided in a mainstream school, for a small proportion of people, reading difficulties become apparent that require extra teaching and in some cases, specialist teaching support (Rose, 2009). One of the most commonly occurring reading difficulties that has been contentious over recent decades and which will be the focus of this study is characterised by a primary difficulty with *word recognition and phonic decoding* - dyslexia. These difficulties are distinct from the profile of reading difficulties that can occur in people who have poor comprehension skills. Arguably, word recognition and phonic decoding skills are even more important than comprehension skills as reading comprehension depends absolutely on word reading. If a child is not able to decode, they will be unable to extract meaning from a written word (Carroll et al. 2011). Children whose reading profiles include difficulties with word recognition and/or phonic decoding are often referred to as having *developmental dyslexia* or *dyslexic difficulties* (DCSF, 2009) and according to Bishop & Snowling (2004) this affects between 3-10% of school children. These findings were recognised by the English government in 2009 in an independent report commissioned on how best to provide for children with literacy difficulties in schools (Identifying and teaching children with dyslexia and literacy difficulties, 2009). This report provides a brief summary of dyslexia as "a learning difficulty that primarily affects the skills involved in accurate and fluent word reading" which can be seen to occur across the full range of intellectual ability (Rose, 2009).

In support of this there is now considerable evidence which indicates that the best predictors of word recognition at a young age are letter-sound knowledge and phoneme sensitivity and the best predictors of reading comprehension are word

recognition, vocabulary knowledge and grammatical skills (e.g. Muter, Hulme, Snowling, & Stevenson, 2004; For a review, see Bowey, 2005). These studies suggest and that the core deficit in dyslexia is a phonological one that impairs a child's ability to understand the alphabetic principle (Vellutino, Fletcher, Snowling, & Scanlon, 2004). The alphabetic principle refers to the process of learning individual letter sounds and understanding how these blend together to form full words to represent spoken language. However, the role of verbal language skills in dyslexia should not be overlooked. It is recognised that dyslexia can also be a language based difficulty that is heritable and can run in families (Pennington & Olson, 2005). Findings from family studies of children 'at risk' of dyslexia suggest that phonological and oral language delay are linked to the severity of reading difficulties in adolescence (Snowling, Muter & Carroll, 2007).

The most prominent theory on the cognitive causes of dyslexia, and the one which will be adopted here, cites the cause as a deficit in phonological processing ability. Phonological processing is comprised of phonological awareness, verbal memory and verbal processing speed and there is a substantial amount of convincing evidence showing that difficulties in these areas are reliable predictors of dyslexia (Vellutino, Fletcher, Snowling, & Scanlon, 2004; Rose, 2009). As children develop into adolescence and adulthood signs of dyslexia tend to change and people will often show some improvement in their reading but still show poor reading fluency, slow writing speed and poor organisation in work (Snowling, 2008).

There is evidence though, that the kind of phonological processing difficulties that are evident in children with dyslexia frequently do persist into higher education and adulthood (Beaton, McDougall, & Singleton, 1997). Warmington, Stothard & Snowling (2013) conducted a recent group study with UK university students and reported that students with dyslexia in higher education have persistent difficulties with reading rate, reading accuracy, comprehension and tasks that place demands on phonological processing skills. These findings are consistent with other studies (see Hatcher, Snowling & Griffiths, 2002; Singleton et al, 2009) that indicate dyslexia is often not

compensated for in adulthood. It is useful to supplement data from group studies such as this with longitudinal follow-up studies, though these are far less common.

In the recent follow-up studies on UK populations that do exist, findings have shown that the cognitive problems associated with reading difficulties can persist throughout the years of schooling and into adulthood with little evidence of catching up. For example Snowling, Muter & Carroll (2007) carried out a longitudinal study in which they followed in early adolescence children with a family history of dyslexia (i.e. 'at risk' of having dyslexic difficulties) seen at 3:09, 6 and 8 years old. This study found that 66% of the participants from 'high risk' families had reading attainment 1 standard deviation below the mean of the control group at 8 years old and were categorised as 'reading impaired'. The remaining 34% were categorised as 'at risk – unimpaired'. When the 'at risk - impaired' group were followed up at 13 years old, their scores were found to be significantly lower than the control group for all reading measures including non-word reading, decoding efficiency, sight word reading efficiency, text reading accuracy and text comprehension. The 'at risk- unimpaired' group also had scores significantly below the control group for these measures except on non-word reading and comprehension where they performed at the same level as controls. The authors found that the reading difficulties for some children with dyslexia were 'longstanding' and that there was no evidence of the children catching up with their peers in this skill. These findings confirm that there are individual differences in children at risk of dyslexia and that reading difficulties with a developmental origin will tend to persist, unlikely to resolve without intervention. The authors acknowledge that a limitation of this study was its relatively small sample size (N=50).

Further evidence from larger scale longitudinal research (N=128) in this area comes from a study conducted by Maughan et al. (2009) on an Isle of Wight population. This study assessed poor and normally developing readers in adolescence (aged 14-15) and followed them up in middle age (aged 44-45). Results showed that individual differences in spelling and its related sub-skills were highly persistent across the 30 year follow-up and poor readers' skills remained markedly impaired at mid-life with some evidence that they had fallen further behind their peers. While this large,

longitudinal study provides very useful information it should be noted that the authors were not able to assess phonological skills in the context of the follow-up and instead assessed spelling as a key marker of literacy skills. As such, no specific data on the phonological awareness of the poor readers is provided at follow-up. However, the results confirm the findings of the studies above and strongly suggest that children with reading difficulties that persist into adolescence are likely to continue to be struggling with these difficulties well into their later life.

The studies outlined above strongly suggest that adolescent children with dyslexia are a vulnerable group of children, likely to fall increasingly far behind their peers unless appropriate targeted interventions are identified for them.

Importantly, dyslexia can be best understood as a continuum or spectrum which can vary in severity, meaning quite a large range of reading decoding and fluency ability can be seen in a group of children, all of whom have dyslexia (Department for Children Schools and Families (DCSF), 2009; Snowling, Muter & Carroll, 2007). There are alternative causal theories of dyselxia with weaker evidence bases, but there is no room to discuss these in the present study. Of course, many of the theories we currently hold about education may be incomplete or even incorrect but it is only by developing and testing them that we may improve our understanding of the problem being studied and develop more effective interventions (Snowling & Hulme, 2011).

That specific word reading difficulties exist is not in question, however controversy has arisen over the last 10-15 years as to how these dyslexic difficulties should be identified (or using the medical term 'diagnosed'). In the past it has often been diagnosed according to what has become known as a 'discrepancy definition', which is to say that a child's reading ability is significantly lower than their general intelligence or IQ (World Federation of Neurology, 1968). However, Duff (2008) points to 'increasing dissatisfaction' with this approach for a variety of reasons. First among these is the lack of important differences between children with reading ability discrepant with their IQ and children whose reading ability and IQ are both low (Fletcher et al. 1994; Stanovich & Siegel, 1994; Steubing et al. 2002). For example there

are no differences in the rate of reading improvement between these 2 groups of children and both groups show improvements in their reading skills in response to evidence-based intervention programmes (Hatcher & Hulme, 1999; Vellutino, Scanlon, & Lyon, 2000).

In response to this growing disatisfaction with the discrepancy definition a new approach referred to as the Response to Intervention (RTI) model has been developed in the USA which instead describes reading difficulties as a failure to respond to whole class literacy teaching (wave 1; tier 1 in US framework) and targeted, evidence-based interventions (Fuchs & Fuchs, 1998). This avoids the pitfalls inherent in the discrepancy model in which children cannot be diagnosed with dyslexia if they have a low IQ, or have to wait for a discrepancy to emerge between their IQ and reading ability before they can be officially diagnosed with dyselxia, in essence meaning they may have to endure many years of failure before their condition is recognised. Rose (2009) advocates avoiding this 'wait to fail approach', explaining that "a good indication of the severity and persistence of dyslexic difficulties can be gained by examining how the individual responds or has responded to intervention".

Duff (2008) explains that the most favoured model of RTI includes 3 levels of categorisation and intervention. Firstly children have their reading skills assessed regularly as a whole class during the course of regular teaching practice (wave 1). This is often done on a termly basis and makes use of teacher-based critereon referenced or standardised tests. Snowling (2011) advocates this approach noting that teacher assessments supplemented by tests of phonological skills can improve the accuracy of idenitfying children at risk of dyslexia. Any children that are found to be falling significantly behind their peers despite good attendence are categorised as 'at risk' meaning additional/targeted teaching is required to support their progress. These children then fall into a second level of reading instruction (wave 2) in which they should receive small-group, evidence-based reading interventions to give them the opportunity to engage in extra reading tuition and catch up with their peers. Only when this has proved unsuccesful and they have failed to respond to an intervention

which achieves results in the majority of cases, woud they then be diagnosed with a reading disability and provided with special educational provision (wave 3).

At this stage it may be neccesary for an Educational Psychologist (EP) to become involved if problems persist that the school cannot address (Rose, 2009). The child would then be at the 'School Action Plus' stage and the EP would be able to conduct a thorough assessment of the child's difficulties and identify any cognitive deficits that may be underpinning the difficulties. The fine-grained nature of these tests should be such that a range of abilites are assessed to idenitfy areas of weakness related to the difficulty that can be then targeted with interventions. This process of assessing progress throughout each wave is essential not only to identify struggling readers as early as possible but also to inform interventions.

Fuchs & Fuchs (1998) suggest that lack of response to intervention should be measured according to 2 criteria: (i) that children are falling behind their peers in terms of their reading ability and, (ii) the rate at which they are making progress. In this way RTI can incorporate a more dynamic assessment of reading ability (as opposed to the static discrepancy definition) and a graduated approach to the identification of dyslexia (Rose, 2009). Care should be taken with this approach though as it is clear (Griffiths & Stuart, 2011; Duff, 2008) that there is a need for further research and clarity in this area. For example, there does not yet seem to be any consensus on how a lack of response to wave 2 intervention should be measured or even agreement on how it should be defined (James, 2004).

Reading development

If we assume that the ultimate goal of reading is to understand and gain information from texts and that this is vitally important for a successful education and in later life, we can then look to a model of reading that breaks down the processes involved and explains how they are interrelated.

Figure 1: Simple View of Reading model (Gough & Tunmer, 1986)

According to the Simple View of Reading shown above in Fig. 1 (Gough & Tunmer, 1986), proficient reading depends upon the product of 2 sub-components: decoding (i.e. word recognition) and linguistic comprehension (i.e. understanding of the meaning carried by individual words and sentences). Evidence for this framework is drawn from a wide range of studies providing evidence for two distinct profiles of reading difficulties: those with poor word reading accuracy (i.e. dyslexic) and poor comprehenders (Carroll, Bowyer-Crane, Duff, Hulme, & Snowling, 2011). While most children will display typical development in reading ability showing a steady progression in both their word recognition and comprehension abilities, a minority will face a challenge in one or both of these areas, causing them to encounter a reading difficulty (Duff & Clarke, 2011). The Simple View of Reading makes it clear that there are component skills to reading that go beyond simply decoding text and extend to the need for well developed language comprehension. However, poor word recognition skills can have a major impact on an individual's ability to comprehend text accurately as whole words can either be mis-read and therefore misunderstood or even missed out entirely, thereby compromising the meaning of a text. Thus word recognition is an essential aspect of good comprehension of text and reading fluency.

It should be noted that the Simple View of Reading is not without its critics. The model came out of an attempt to reconcile 2 approaches to reading: the 'phonic' approach on the one hand and the 'whole word' approach on the other. While Gough & Tunmer

attempt to integrate these 2 approaches and acknowledge the importance of *both* in learning to read, it was argued by proponents of each approach that their approach was not given enough emphasis or importance in the model. For example, those who favoured a phonic approach to reading felt there was not enough detail in the model about the processes involved in decoding (Dombey, 2012). While criticism that the model contains little detail about the *processes* involved in decoding and comprehending seems fair (although the 'simple' in the title does rather acknowledge this) that does not detract from the usefulness of the model in shaping current thinking on the teaching of reading, assessment and identification of different profiles of reading difficulties, and it therefore represents a pragmatic attempt to synthesise 2 important aspects of teaching reading. For this reason it was adopted by the Rose Report (an independent review of research evidence informing current policy and practice for the teaching of early reading commissioned by the English government) and the DfES in 2006 and now plays a central role in the Primary National Strategy for literacy (DfES, 2006; Rose, 2006) informing teaching policy and practice in England. Although a review of the National Curriculum in England was ordered by the coalition government in 2011, no details on this are currently available and the new curriculum is not due until September 2013 (DfE website, 2011 - accessed April 2013).

The importance of phonic decoding and word recognition accuracy to becoming a fluent decoder of words

The process of moving from acquisition of letter sounds and phonic decoding skills towards more automatic and fluent reading is outlined in Ehri's 4-phase theory of reading development (Ehri, 1992, 1995). This theory posits that as children learn to read they move from a pre-alphabetic stage in which they have no letter knowledge, through to a partial alphabetic phase, a full alphabetic phase and finally to a consolidated alphabetic phase characterised by an ability to decode unfamiliar words made of multi-letter units (Stuart, Stainthorp & Snowling, 2008).

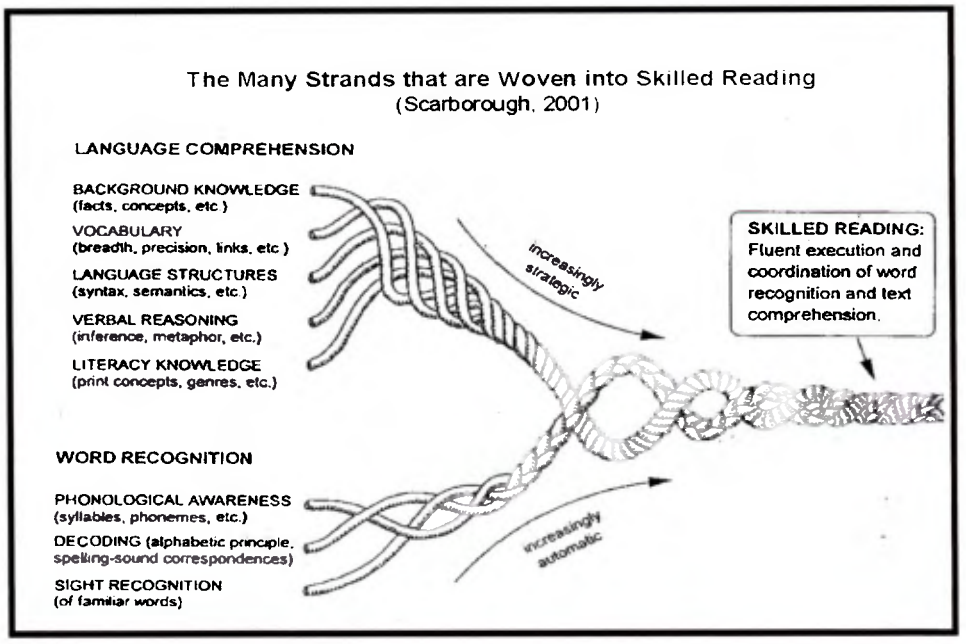
The acquisition of phonic decoding skills in this process is vital as children use this knowledge to recognise initial and final phonemes in words (in the partial alphabetic phase) and develop this further to enable letters to be mapped into sequences of sounds that can be blended into whole words (the full alphabetic phase). In this phase, children are also developing their orthographic knowledge which in turn improves

word recognition accuracy. Continued exposure to print enables these strategies to become more skilled and automatic enabling the consolidated alphabetic phase to be reached and unfamiliar words of multiple letter units can be decoded. At this point continued practice is important in order for reading to become increasingly fluent and accurate. Ehri's 4-phase theory therefore makes it clear that children must develop phonic decoding skills in order to develop their word reading skills.

The importance of fluent decoding for reading comprehension

Without accurate decoding and reading fluency, a large load is placed on the short-term memory by the process of reading and this can have a major impact on the ability to comprehend text. Wagner (2008) explains that "the more accurate and automatic readers become with these individual word recognition processes, the more cognitive space can be freed up for comprehending strings of text" p.2. Hence students may have comprehension difficulties with text reading as a result of a deficit in decoding skills (accuracy and/or fluency), even if they do not have comprehension difficulties per se. Other studies have found that word level reading is a major determinant of reading comprehension in school children, though the evidence seems to be stronger among younger children (Jenkins, Fuchs, van den Broek, Espin, & Deno, 2003). Without strong phonological decoding skills, children are likely to find it much harder to achieve the level of fluency that is required for sight-reading to occur and for comprehension of text to happen easily and automatically. This is well illustrated by Scarborough (2002) in the Strands of Early Literacy Development model (see Fig. 2).

Figure 2: Stands of Early Literacy Development model (Scarborough, 2002)



This model illustrates how word recognition and language comprehension must work together in order to extract meaning from text. It also emphasises that word recognition skills are a necessity for reading comprehension and that increasing automaticity in this area can lead to improved comprehension and eventually to skilled and fluent reading. Stuart, Stainthorp & Snowling (2008) support this view, emphasising that:

> "both word recognition and language comprehension are essential at all levels of reading skills, but are not one and the same" p.62

With this model in mind it is no surprise that the vast majority of poor readers show a difficulty with decoding individual words (Snow, Burns, & Griffin, 1998; Jenkins et al. 2003). While it is important to acknowledge that some readers will have impaired comprehension regardless of their reading fluency for a variety of reasons, for most readers their inability to comprehend text seems to arise from their inability to decode words accurately (Bruck, 1990). Snowling & Hulme (2011) summarise this idea, explaining that:

> "For many children, poor decoding skills pose a bottleneck to understanding. For such children, an intervention to promote the development of word-level decoding skills is entirely appropriate" p.10

Perhaps most importantly Wagner (2005; 2008) notes that when word-reading difficulties do arise the problem is often made worse by ineffective instruction that does not identify or target the key area of need. Wagner (2008) goes on to claim that

> "it is indisputable that phonological decoding is a basic building block upon which fluent single-word reading and fluent reading of connected text for comprehension are based" p.7

Rose (2006) supports these views, stating that phonic work is "an essential part, (but not the whole picture), of what it takes to become a fluent reader...capable of comprehending and composing text" p.17. Further evidence comes from Fuchs et al (2001) who argue that although reading fluency relies upon many different abilities, efficient (and therefore fluent) word reading relies heavily on increasing ability in phonological segmentation and decoding skills. They go on to suggest that efficient word recognition frees up cognitive capacity to enable higher-level comprehension of text. This indicates that improving decoding and phonological awareness skills could bring about an improvement not only in reading fluency but also reading comprehension.

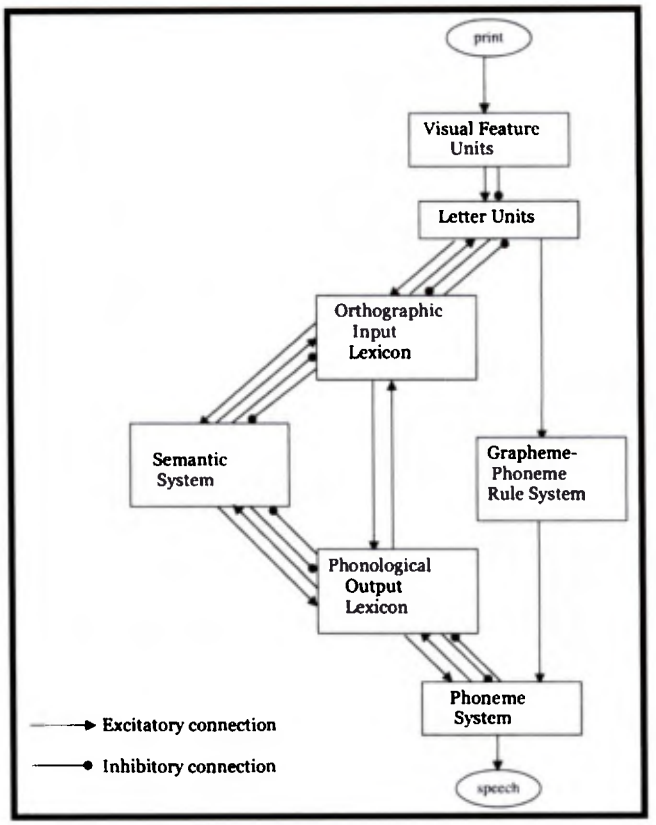
Complementary Views: The Dual-route Model and the Simple View of Reading

Discussion surrounding decoding and the development of efficient, fluent sight-word reading leads to further consideration of the Simple View of Reading (Gough & Tunmer, 1986) outlined above. This model conceptualises reading along two axes: comprehension and word recognition. While the Simple View of Reading provides a useful way of conceptualising reading it provides no detail on *how* readers learn to recognise words or comprehend text and for this a different model of reading is required.

While phonic decoding skills are extremely important they are only of use when a reader is faced with a word that has a regular spelling (e.g. hat, flip, stand). However, English is a language which has a vast number of words that have irregular spellings (e.g. his, light, yacht) and for these words phonic decoding can only be of very limited use, though arguably it may be useful to help readers guess an irregular word if it already exists in their vocabulary. For example, readers could use regular letter sounds at the beginning and end of a word as clues, as in the examples of 'light' and 'yacht' above. Combined with a word's context and placement in a sentence, this may be enough to allow a reader to guess an irregular word.

Despite the occasional potential of using phonic decoding to make an informed guess at irregular words, it is unarguable that English readers cannot rely entirely on decoding skills to decipher and understand text and must instead rely on word knowledge and sight word reading when faced with words of this kind. Coltheart (2007) describes a dual-route model of reading to provide a theory of what cognitive processes occur during word recognition and how people can accurately read irregular words that cannot be read using phonics decoding skills (see Fig. 3).

Figure 3: The Dual-Route Cascaded (DRC) Model of Reading (Coltheart, 2007)



Broadly speaking, the DRC model describes 2 pathways by which people can read written text: a lexical and a non-lexical route that operate in parallel. The lexical route involves accessing the pronunciation of a familiar word in a mental lexicon (or dictionary), which contains information about the spelling, and pronunciation of words. In order to make use of this route, sight word reading (rather than decoding) is necessary during which information about a word's pronunciation and meaning is retrieved in response to its written form. In contrast to this, the non-lexical route involves turning the graphemes (letters or letter groups) in a word into phonemes and building together the pronunciation of the word from this sequence of sounds. The idea of a dual-route pathway to reading has been considered for at least a century and according to Coltheart (2007) was first discussed by de Saussure in 1922:

> "We read in two ways; the new or unknown word is scanned letter after letter, but a common or familiar word is taken in at a glance, without bothering about

> the individual letters: its visual shape functions like an ideogram." (1922; translated 1983, p.34).

This model has been influenced by various theorists (Forster & Chambers, 1973; Frederiksen & Kroll, 1976, Baron, 1977), been through many iterations and developments and in its current form has been described as 'highly influential' (Snowling & Hulme, 2007) as a means of describing the cognitive processes at work when we read aloud. Stuart, Stainthorp & Snowling (2008) support this effort to deconstruct and investigate different aspects of the Simple View of reading, claiming:

> "The better we understand what is involved in each dimension (of the Simple View of Reading), the better placed we are to unravel and understand the essential, complex and continual interactions between each dimension which underlie skilled reading." p.59

With this in mind it is clear that an intervention like Toe By Toe cannot directly provide readers with the skills they need to read irregular words, as the programme primarily teaches phonic decoding skills which can only really be regarded as useful when reading regular words. The theory posited by the DRC model therefore highlights a limitation in the Toe By Toe scheme.

However, it could be theorised that Toe By Toe could help develop a student's mental lexicon. As regular words are read and re-read via the non-lexical route they should start to become familiar and get committed to memory, thereby entering the mental lexicon. Therefore improved knowledge of phonic decoding could indirectly aid sight word reading by increasing the rate at which words become familiar and enter the mental lexicon. This 'self-teaching' process of deciphering unfamiliar words and then storing them in sight vocabulary has been proposed by Bowey & Muller (2005), Cunningham et al (2002) and Nation et al (2007). In practice the process involves applying phonic rules to decode unfamiliar words, which then results in the storage of those unfamiliar words in the sight vocabulary (or mental lexicon).

Other frameworks conceptualise reading systems with connectionist models (Plaut, 2007) which attempt to model a neural network and are thus "neurally plausible". While there is not space to discuss these alternative models here it is worth noting that despite the differences in approach between these models, reading theorists have reached an agreement that there are dual routes involved in reading aloud, one that is used to process known regular and irregular words and another that uses decoding to read unfamiliar regular words (Coltheart, 2007).

Teaching reading - Policy and Practice in England

As outlined above, vital to the process of successful reading are skills in phonic decoding and word reading accuracy as these represent the first steps towards reading texts for meaning and developing comprehension (Carroll et al, 2011). Children in England are taught these early reading skills from their Reception year in primary school (aged 4-5 years old) via structured, systematic teaching of synthetic phonics. This approach involves teaching readers grapheme/phoneme correspondences (i.e. the alphabetic principle) in a clearly defined sequence of incremental difficulty as well as teaching them to apply the skills of blending phonemes in order to successfully read individual words. These skills then form the basis of reading mastery. While other approaches have shown some success, the Rose Report concluded that "the case for systematic phonics is overwhelming and much strengthened by a synthetic approach" (Rose, 2006).

Objectives from the National Primary Literacy Framework website (Department for Education, 2011) show that during their Reception year a wide range of phonic and word recognition strategies should be taught to children including:

- Linking sounds to letters.
- Reading simple words by sounding out and blending the phonemes all through the word from left to right.
- Reading a range of familiar and common words and simple sentences independently.

As children move from Reception into Year 1 these objectives become more

challenging. By the time children reach the end of KS1 (i.e. Year 2) they are expected to be able to:

- Read independently and with increasing fluency.
- Know how to tackle unfamiliar words that are not completely decodable.
- Read high and medium frequency words independently and automatically.

(Department for Education, 2011)

The intention is that by the time children are in Year 6 and about transfer to secondary school at the age of 11-12, they are typically expected to have reached a National Curriculum level 4 for their reading. This includes being able to:

- Respond to a range of texts.
- Use inference and deduction.
- Locate ideas and information in texts.
- Understand that texts reflect the time and culture in which they were written.

(QDCA, 2010)

The level descriptors and guidelines provided to schools by the Qualifications and Curriculum Development Agency (QDCA) are not expected to apply universally to every child and there is an acknowledgement that children will progress in their reading development at different rates for a wide variety of reasons. However there remain children who, despite receiving the same amount of tuition as others in their class, struggle with their reading and find themselves falling behind and experiencing difficulties. These children require specialised interventions to target their areas of need and help them make progress.

Evidence from research evaluating effective early reading interventions

The theory and research evidence outlined above provides a sound basis on which to identify dyslexia early and develop educational interventions targeting knowledge and skills to remediate dyslexic reading difficulties. It is clear an intervention intended to improve word reading accuracy needs to be targeting the skills which underpin this ability, namely letter-sound knowledge and phonemic awareness. Taking the view that

children with poor word reading skills are likely to have an underlying difficulty with phonics, there is 'considerable evidence' that teaching children phoneme awareness and the alphabetic principle will be important components of an intervention for those children (Snowling & Hulme, 2011; Rose, 2009). This view is supported by a meta-review by the National Reading Panel (2000) which found that interventions targeting phoneme awareness were most effective when the training also included work with individual letters.

Additionally, there are a wide range of studies providing evididence that teaching phonologically based decoding and word recognition skills in an intense, focused, multi-sensory and systematic way can have a positive impact on word reading development in even the most severely dyslexic children (see Fletcher et al. 2007; Shaywitz; 2003; Singleton, 2009 for review).

As well as the importance of the alphabetic principle, recent studies have also shown the importance of accompanying any phonics intervention with activities targeting reading skills in the context of real books. Although it appears that targeting reading skills or phonology separately can bring about improvements in phonic decoding and word reading accuracy, the combination of the two is most effective in bringing about positive outcomes. This was demonstrated in a controlled study by Hatcher, Hulme and Ellis (1994) with 7-8 year old children identified with reading difficulties .This study found that after a 20 week intervention, those children who had received training in phonological awareness and letter sounds in the context of book reading made better progress in single word reading and reading comprehension than children who only received phonological awareness training or book reading practice alone. In this study the children receiving both interventions made approximately twice the rate of progress compared to the other children over a 6 month period. Later evidence from this research group explored whether this approach would be effective with children who had more significant word reading difficutlies. Hatcher et al (2006) conducted a randomised controlled trial (RCT) using the phoneme awareness training and book reading programme described above, with 5-6 year olds selected for being in the bottom 8% of the population for reading development. This programme ran for 20

weeks in total. The intervention group received the programme for 20 weeks and a waiting control group received the programme for 10 weeks. The content and implementation of the intervention was kept the same for both groups. Results showed that after 10 weeks of daily intervention the children in the 20 week intervention group had made significant gains in their word reading accuracy compared to the waiting control group. In the following 10 weeks when the waiting control group received their intervention, they began to catch up with the intervention group. These gains were maintained 11 months after the intervention ended.

Lingard (1997) arrives at the same conclusions as Hatcher et al, pointing out

> "There is clear evidence that the ability to perform phonemic analysis, to sound out words, and to combine this with contextual information, ultimately enables children to become independent, fluent readers" p.44

Findings from recent research on effective early reading interventions for children with dyslexia are summarised by Rose (2009) who notes

> "intervention sessions for children with dyslexia need to have a strong, systematic phonic structure and be sufficiently frequent to secure children's progress and consolidate learning" p.14

The issue of *length* of intervention is also important. Surprisingly, this does not seem to automatically be a case of 'more is better'. Most intervention studies with children at risk of reading difficulties seem to range in length from 10 – 20 weeks (Griffiths & Stuart, 2011) but the National Reading Panel meta-review (2000) reported that evidence showed gains in phonological skills began to diminish after 12 weeks or more of training in this area. These findings are confirmed in the Hatcher et al (2006) RCT described above which found the rate of improvement in the 20 week intervention group started to slow after the first 10 weeks of intervention. With regard to the length of *individual* intervention sessions, Griffiths & Stuart (2011) report that few studies have manipulated this aspect of an intervention but the National Reading Panel review (2000) recommends that sessions should not exceed 30 minutes.

It is worth noting at this point that, perhaps surprisingly, there are relatively few *evidence-based* intervention programmes in education and as such relatively little is

known about what interventions are likely to work and for whom (Snowling & Hulme, 2011). This creates a concern that some school interventions are being selected and used without any real evidence of their effectiveness and this is a concern that urgently needs addressing. In addition to this virtually all of the studies discussed here were conducted on primary school age children, which is no surprise given the importance of early intervention, but means there is very little evidence for how these interventions may work with much older children who have reached secondary school without having developed sufficient reading skills.

Evidence for effective reading interventions targeting older dyslexic pupils with severe and persistent reading difficutlies

The research that exists on interventions for older dyslexic children and adults reports different rates of success. These differences can relate to a variety of factors such as severity of cognitive difficulty, family risk-factors and educational history (Rose, 2009). However, results suggest that a phonologically-based approach can still be effective, though achieving results can often be more of a challenge once difficulties have persisted beyond the age of 7-8 years (Shaywitz, Morris, & Shaywitz, 2008). Torgeson et al. (2001) completed an evaluation of 2 intensive 8-week phonologically based reading improvement programmes focusing on children between the ages of 9-11 with word reading ability below the 5th percentile. They found that both programmes resulted in significant improvements in word reading and that the gains lasted for more than 2 years post-intervention. The extent to which this study can be generalised to an English population is debatable though as it was carried out on a population of children in the USA, where the structure of the education system and curriculum is markedly different to that in England.

While there are relatively few RCT studies providing evidence for the efficacy of reading intervention programmes in primary schools in England, as children with reading difficulties progress beyond the age of 10 or 11 into adolescence studies reporting successful reading interventions for them become increasingly sparse (Rose, 2009).

Rationale for choice of scheme

Having discussed theoretical approaches and evidence on remediating dyslexic reading difficulties, it is now useful to focus on a specific programme based on the theory above and which formed the focus of the present study. Of the schemes available in England that are suitable for use at secondary school level, as noted above, research that provides evidence for their effectiveness is far less common than for primary school interventions (Brooks, 2007; Rose, 2009).

It is likely that this is largely because there is a strong expectation in the national curriculum that by the time children reach secondary school their reading and general literacy levels will be easily high enough for them to read and write independently. However, as statistics in the introduction indicate this is not always the case, leaving schools with the problematic issue of how to provide for those children that have not made sufficient progress to enable this. MacKay (2006) notes that:

> "there (is) no support for the view that children who have failed to learn to read in the early primary stages are going to succeed by the normally available group and class methods in later years" p.176

With this in mind it is vital that secondary schools are given guidance and made aware of appropriate reading schemes and interventions that are available to help this group of children that are experiencing persistent reading difficulties, especially in view of the importance of reading on their future prospects.

Reading schemes can be inappropriate for secondary school students or a secondary school teaching system for a number of reasons. Firstly, reading schemes are often designed with younger children in mind and rely upon picture books and stories intended for primary age children (e.g. Oxford Reading Tree). It seems likely that for a 13 or 14 year-old to have to engage with texts of this kind in school would be extremely demoralizing, not to mention humiliating. Additionally, it is often required that those delivering reading interventions have formal teaching qualifications. While this does not seem unreasonable, secondary schools rarely have teaching staff available to deliver a specific intervention to a very small group of students. Furthermore, some popular schemes require a large initial investment of money and

staff time to buy the necessary resources, ICT equipment and to train staff in the teaching methods used (e.g. Reading Recovery, THRASS, LEXIA).

The scheme selected for this study is called Toe By Toe and has a close focus on phonics instruction and the alphabetic principle to improve word reading accuracy and phonic decoding. As such it is well aligned to the phonological deficit theory of dyslexia. Informal interviews with school staff and EPs in the London borough the present study was carried out (Barking and Dagenham) revealed Toe By Toe was widely used and had broad appeal for schools due to its relatively low cost compared to other schemes available, its systematic approach, a lack of any indicators it is intended for a particular age group and because it does not need to be taught by a qualified teacher but can also be used by teaching assistants (TAs) and/or parents (Cowling & Cowling, 1997, p.4).

A strict routine is established at the outset of Toe By Toe that reinforces and consolidates prior learning and then quickly builds on this, providing the opportunity for children to experience quick and measurable success. In terms of cost, each Toe By Toe book costs approximately £20 (one book is required for every child doing the programme) and this is a fraction of the cost of schemes such as Reading Recovery or THRASS that require lengthy training and investment in resources.

There is a parsimonious quality to Toe By Toe that extends to the programme having no separate teacher's manual, meaning all teaching instructions are included within each book and are therefore permanently to hand during teaching. Teaching instructions are provided on every page and the programme works systematically through individual letter sounds, grapheme/phoneme correspondence, blending exercises, the use of digraphs, syllable division, single and multi-syllable words and simple sentences. Words are required to be read 3 times in a row without errors (on 3 separate occasions) before they can be considered 'learnt'. As the programme progresses, fluency exercises are also included to encourage competent reading of whole sentences. Multi-sensory activities are also included to enable children to focus on words they are really struggling with. These activities require the student to write

out words they are struggling to read 10 times in a row, while saying the word aloud as they write it. In this way multiple senses are involved (hearing, vision, touch) in learning the word with the intention of helping the student commit it to memory. Toe By Toe does not include an index or contents page as a strict rule of the programme is that is worked through in order from start to finish with no sections missed out. Picking and choosing of activities is not allowed as it is based on the view that children who have persistent reading difficulties are likely to have experienced a variety of training methods and are therefore likely to have unevenly developed skills (Cowling & Cowling, 1997, p. 3-5).

Every session is recorded in the Toe By Toe book so that progress is clearly visible and a record of the date of each session and the material covered is always available. As TAs can deliver the programme, this has obvious benefits in terms of cost-effectiveness and timetabling issues.

In summary, Toe By Toe was selected on the basis of its content, method, flexibility and cost-effectiveness. The content of the programme is based upon phonics and gradually builds on the rules of letter sounds and blending that are required for the development of decoding skills and competence in word reading. Thus the programme is theory-based and appropriate for the kind of dyslexic difficulties being targeted in the present study. There is no indication throughout the Toe By Toe book that it is intended for a particular age group. The method used is one-to-one, providing individual instruction to children tailored to their specific needs and this was an important consideration given that research has often indicated the advantages of individual over small group work for struggling readers (Bloom, 1984; Griffiths & Stuart, 2011).

Other reading schemes appropriate for secondary age children were inappropriate for this study for a number of reasons. Some require sessions to be taught in groups, which would have been extremely difficult to fit into a school timetable mid-way through a year due to the necessity for available rooms, staff and to remove children from their other lessons. Others schemes required training of staff over a number of

months at considerable expense which would have been prohibitively expensive for the schools involved. Furthermore, the other potentially suitable interventions would have needed to be delivered by teaching staff (rather than TAs) with problematic knock-on effects on the school timetables.

There is some evidence from previous research evaluating the efficacy of Toe By Toe. This has been shown in two separate research studies with primary and secondary age children. Both pieces of research have been carried out by MacKay (2006/2007) in the Scottish local authority of West Dunbartonshire and is published by the authority. It should be noted that this is grey literature, has not been peer reviewed and has various other limitations as outlined in the following section.

Existing evidence base from research on Toe By Toe

Some quantitative data was provided by MacKay (2006) demonstrating Toe By Toe's effectiveness with Year 7 students (primary school children in Scotland). This study made use of 91 participants across 32 schools in a one-group pre-test/post-test study which took place in 2003. The intervention ran for 26 weeks. Results reported that on average children made a 14 month gain in their reading age (as measured by the Neale Analysis of Reading Ability, 2nd revised UK edition) over the 6½ month duration of the Toe By Toe instruction. MacKay notes that this is particularly significant progress given the very slow rate of progress this group of children had made over the previous 2 years.

Mackay's subsequent study (2007) reporting on the efficacy of Toe By Toe at the *secondary school* level is much smaller than his equivalent primary school study. This was a quasi-experimental study using 24 students in a 2 group pre-test/post-test design conducted in one West Dunbartonshire secondary school. The 24 students were referred for learning support because of their low reading levels. Twelve of these were assigned to a control group and 12 to a test group. Assignment of children to groups was not random due to the restrictions of the school timetable. The Toe By Toe intervention ran for approximately 3 months and reading levels were taken before and after the intervention. The post-intervention testing took place 12 months after the

start of the intervention and showed that the intervention group had made gains of 2 years in their reading comprehension age. The control group by comparison had made gains of only 3 months, representing an effect size of the intervention of 1.74. Reading comprehension ability was measured by the Gapadol Reading Comprehension Test (McCleod & Anderson, 1974) which requires children to read a short passage then answer questions on what they have read in a multiple choice format. MacKay concludes that the individual Toe By Toe support had proved to be 'highly effective' in addressing reading difficulties in both primary and secondary schools. Brooks' "What works for pupils with literacy difficulties? The effectiveness of intervention schemes" (1998, 2002, 2007) report was intended to be one of the primary sources for teachers to consult when choosing evidence-based intervention programmes. In this report Brooks summarises these 2 MacKay studies and concludes that the programme can achieve "useful gains".

While MacKay provides important and useful data in his study, providing the first published data on the effectiveness of Toe By Toe in secondary schools, it would be useful to expand on his work for several reasons. Firstly, the study was carried out with students in a local authority in West Scotland with a population that is likely to differ significantly from the population of an inner-London school in terms of ethnicity (inner-London schools being among the most ethnically diverse in the country). Second, MacKay provides data on the comprehension scores of his sample using a test that was standardised over 35 years prior to the research taking place. As such the validity of the test used could be called into question when used in a recent study. Third, MacKay *only* reports on the comprehension scores of his sample, which is not the skill Toe By Toe aims to teach. No data is available to show if Toe by Toe can also improve phonic decoding skills, word reading accuracy, word reading fluency or comprehension (though presumably it will have an effect on at least some of these). Data on how Toe By Toe affects these specific aspects of reading would be useful to enable schools to better identify which students stand to gain the most from the programme. Fourth, MacKay only provides 2 data points in his study (before/after) making it impossible to assess any longer term maintenance of gains following the end of the intervention training. Therefore a study making use of a delayed follow-up

assessment of reading would be useful to provide data in this area. Fifth, Mackay indicates in his secondary school study that while fidelity checks were carried out, these may have been inadequate and some people involved in using the scheme may have been using it incorrectly, raising questions about the validity and reliability of the results (MacKay, 2007 p.33). Finally, the relatively small sample size used by MacKay limits the power of his study, making a replica study to confirm and expand on the results an important addition to Toe By Toe efficacy research.

The existing evidence for Toe By Toe and its basis in current theory and recommended practice make it a good candidate for a reading intervention. However, the existing evidence outlined above cannot be regarded as 'gold standard' due to the lack of RCTs demonstrating efficacy. RCTs randomly allocate eligible participants to an intervention or control group prior to an intervention beginning. The most important benefit of this is that it minimises allocation bias and ensures a balance of both known and unknown factors between groups that may influence the outcome of a research study. This in turn increases the likelihood that an observed outcome is the result of the intervention being tested. Carter & Wheldall (2008) argue that for an educational intervention to be delivered with confidence and regarded as 'gold standard' it should be supported by a number of RCTs. They go on to say that if an intervention is based on current theory but is supported by only limited research evidence, in the form of quasi-experimental studies, then it should be regarded as 'bronze' or 'silver' standard. It seems Toe By Toe currently falls somewhere between these two standards (depending on how the research outlined above is viewed) and the aim of the present study is to conduct a quasi-experimental matched-group study to add to the body of research evidence in this area.

The design for the present study is intended to replicate and extend MacKay's secondary school study by providing additional data on the efficacy of Toe By Toe in two secondary schools from one London local authority. It will also expand the current evidence base by exploring possible barriers to implementation of evidence based reading intervention programmes in secondary schools and the student's own views of their reading habits, reading difficulties and the support they receive. This was

achieved by means of a mixed methods approach incorporating both qualitative and quantitative data (see Methodology).

How Toe By Toe was used in the present study

Toe By Toe was chosen to target secondary age students with persistent dyslexic-type word level reading difficulties. The intervention provided phonological and letter-sound training *alongside* book reading activities across a 10-week intervention period. A phonological approach was chosen as the children being targeted showed difficulties similar to those seen in Key Stage 1 children struggling with their reading, hence it was felt a basic foundation level strategy to boost word reading accuracy and phonic decoding skills would be the most appropriate first step to addressing their difficulties. This was considered a wave 3 intervention as children involved were considerably behind their peers in their word recognition ability and had resisted earlier wave 2 interventions to help them close the gap. Evidence shows that 'non-responders' of this kind in a wave 3 literacy intervention often require intensive one-to-one teaching of programmes tailored to their specific learning needs (Griffiths & Stuart, 2011) to help them progress and this was also an important consideration when selecting an intervention programme.

Challenges of implementation - making links between research and practice

Monsen and Woolfson (2010) make the worrying observation that over the past 20 years, a large amount of government led education reforms appear to have been unsuccessful, particularly among the most disadvantaged groups. Large amounts of money have been spent on programmes intended to improve a wide range of educational outcomes with little or no evidence that they work. They go on to conclude that academic research seems to have had little effect on government education policy or applied practice. It was an intention of the present study to explore this paradox and try to better understand the difficulties schools face in accessing current research and putting findings from research into practice.

The concerns outlined by Monsen and Woolfson above were in evidence during the early planning stages of the present study. Informal discussions with senior members of the Educational Psychology team in the Barking & Dagenham local authority revealed several key concerns surrounding the implementation of dedicated reading support schemes in local secondary schools and their relatively limited use in the borough. Core among these was a simple quandary: given the knowledge and expertise of senior teachers and SENCOs in the local secondary schools, why were they making such limited use of the range of reading support schemes available for schools to purchase and outlined in detail in freely available independently produced documents (e.g. What works for pupils with literacy difficulties? Brooks, 2007).

There were a range of potential overlapping reasons suggested for this apparent mismatch between experience and action including the inflexibility of a secondary school timetable, tightening budgets, lack of staff time and lack of staff numbers. These concerns raised questions to be explored during the course of the research.

The literature on organisational barriers to change bears out these concerns. Research on implementation facilitators and barriers in schools by Forman et al (2008) examined factors important to successful implementation of evidence-based interventions in school settings. Ninety minute, structured interviews were carried out with school staff and developers of evidence-based interventions exploring barriers and facilitators of interventions and how the environment of a school can be modified to sustain them. This research lists major barriers to new school interventions as (in order of severity) budget, time in the school day, school staff beliefs about the intervention and competing priorities within the school. Conclusions from this study are limited by the small sample size (N=29) and the potential differences that may emerge in responses based on the type of intervention being discussed.

Expanding on this, Jerald (2008) lists three 'internal barriers to change' that a school is likely to face. These include technical barriers, cultural barriers and political barriers all of which could have an impact on successful implementation of an intervention. In the context of the present study, 'technical barriers' maps onto problems surrounding the

inflexibility to the timetable and availability of staff to run the intervention. 'Cultural barriers' relates to staff beliefs and their willingness to adopt and familiarise themselves with the new scheme and alter their working practices accordingly. 'Political barriers' broadly relates to sufficient budget being made available to run the scheme successfully and ensure that enough staff have the time they need to commit themselves to it as well as adequate support for the scheme from senior staff to ensure it can run smoothly and be supported by the school at an organisational level. These were all barriers that needed to be considered when selecting an appropriate reading intervention to be implemented in the schools involved in the study. Of the three barriers listed above, technical and political barriers were of primary concern. Very little in the way of cultural resistance was noted in either school, indeed both were enthusiastic and interested in the suggested intervention. Clearly though, there were limits on how flexible they could be with their timetables and their budgets and this had to be taken into consideration. A pragmatic approach was necessary here to select an intervention that has a reasonable evidence base but that would also be affordable and flexible enough to fit into a rigid timetable. Toe By Toe was felt to fit these requirements well.

In order to further address potential barriers to effective implementation it was also felt necessary to explore factors that can promote organisational readiness for change. Drawing on social cognitive theory, Weiner (2009) argues for a consideration of 'change efficacy' in these circumstances which can be described as 'organisational members appraisal of task demands, resource availability and situational factors'. Gist & Mitchell (1992) support this view, explaining that change efficacy should be viewed as "a comprehensive summary or judgement of perceived ability to perform a task". Building on this, in order to establish change efficacy it is necessary to consider 3 questions: "Do we know what it will take to implement this change effectively, do we have the resources to implement change effectively and can we implement this change effectively given the situation we currently face?" (Weiner, 2009). By knowing and sharing a view of what is required in terms of actions, time, and resources, implementation capability can be increased. These were important factors to consider when planning and setting up the evaluation of the Toe By Toe intervention

programme with the schools to ensure these questions had been discussed. There was also an opportunity to explore this in more detail during the qualitative strand of the research.

By ensuring change efficacy is as high as possible prior to implementing an intervention, the outcome is expected to be a high chance of successful implementation. However it is worth noting that this is certainly not a guarantee and while implementation effectiveness is necessary, it is not sufficient on its own to achieve positive outcomes (Klein & Sorra, 1996) and it is still possible to misjudge capacity for change or experience unforeseen difficulties.

Use of Teaching Assistants in educational interventions for pupils with SENs

The role of Teaching Assistants (TAs) in the present study is worthy of some discussion as there has been a large amount of recent debate as to how TAs should be used in schools and how they can help to implement effective interventions. TAs are a valuable school resource and have much to offer in terms of educational interventions but up until recently there has been relatively little research on their effective use and their impact on pupil outcomes. The evidence that did exist tended to be derived from small-scale intervention studies and made use of only single year groups or subject areas (see Alborz et al, 2009). Similarly, there were very few studies looking at TA effectiveness over a sustained time period (e.g. a school year) or under normal classroom conditions.

In response to this situation, Blatchford et al. (2008, 2009a/b) conducted the largest ever study of TAs in the Deployment and Impact of Support Staff (DISS) project. This project was longitudinal in design and conducted on a much larger scale than previous research. It was also designed as a naturalistic study that did not involve a targeted intervention but rather captured everyday circumstances in schools. The findings from the DISS project were troubling as it emerged that TA support can have a *negative* effect on pupil's progress, especially pupils with SEN. In general, the DISS data show that pupils who received the highest amount of TA support made less progress than their peers and this trend was most evident in SEN children (i.e. those on School Action Plus or a Statement). Furthermore, Blatchford et al. (2009b) express a concern that in

many cases TAs have inadvertently become the primary educators of children with SEN without appropriate support or training to fulfil this role adequately. The use of TAs in schools is obviously increasing, as their numbers have trebled since 1997 to around 181,100 people, meaning TAs now make up about a quarter of the entire school workforce (DCSF, 2009). This is obviously highly significant in the context of the present study in which TAs were so closely involved in the teaching of children with SEN.

It has been argued that the findings regarding negative TA impact on SEN children can be best explained by findings from the DISS project on the *deployment* (i.e. how they are used in the classroom) and *preparedness* (i.e. their training and professional development) of TAs in a given lesson or for a specific intervention (Webster et al, 2010). Consequently, if TAs are appropriately trained and deployed in the right way they can have a positive impact on pupil progress. This claim can be examined in more detail by looking other studies on the deployment of TAs in the classroom. Reviews by Alborz et al. (2009) and Slavin et al. (2009) show that the educational impact of TAs who have a teaching role delivering a *specific intervention* (especially in the area of literacy) tend to have a direct positive impact on pupil progress. Thus TAs can be used effectively to improve pupil outcomes in the context of a literacy intervention. Importantly, these reviews also note that these outcomes are only achieved when TAs are well prepared, trained and have support and guidance from the teachers they work with and from their school.

DISS project data from structured observations of TA/child interactions showed that TAs only spend around 40 minutes in a typical day leading interventions, spending the rest of their time in a less structured pedagogical role. This has led Webster et al (2010) to argue that:

> "If TAs are to retain a pedagogical role it should be limited to delivering structured and well-planned interventions and they must be properly trained and prepared for it. Interventions should ideally be on a one-to-one basis...the development of a pedagogical role should be grounded in good evidence from further research" p.332

Essentially, the DISS project and other previous studies indicate that TAs can have a positive impact on pupil progress as long as their work is delivered in the form of carefully planned, well structured interventions and supported by appropriate training. These are key findings in the light of the present study. As Toe By Toe is a pre-planned, tightly structured intervention, which was carefully built into the school timetable and appropriate training was provided to all TAs before the intervention began (see 'Training of Teaching Assistants' p.48) these core concerns have been taken into account. However, the outcomes of the present study will provide additional evidence on how successfully an intervention can be implemented by TAs when the recommendations above from Webster et al (2010), based on the DISS project, are taken into account.

Role of the Educational Psychologist

The role of the EP in the context of implementing new reading interventions in schools is wide-ranging. As well as taking careful consideration of the psychological readiness of the organisation and staff involved and maximising this as far as possible, they are also required to identify the difficulties being encountered by children who have resisted initial targeted interventions by their class teacher. This is discussed by Rose (2009) who recommends that where marked problems persist in a child which the school have not been able to address, an Educational Psychologist will be needed to provide advice. The report goes on to state that qualified psychologists should be involved in diagnosing reading difficulties in wave 3 interventions as a child moves onto School Action Plus. As well as the importance of the EP in identifying difficulties of this kind, it follows from this there is also an EP role in selecting interventions that are likely to be effective and providing schools with training and guidance on how best to provide for children experiencing reading difficulties.

Reading difficulties in children can be attributed to a wide variety of inter-related causes as discussed above. Without appropriate EP guidance and training for schools, a situation can emerge whereby children are being provided with interventions that are unlikely to be effective due to poor implementation or indeed targeting completely the

wrong aspect of their difficulties. As well as this, it has been noted above that there is limited research available on well founded, evidence-based reading interventions in secondary schools. This has caused Rose (2009) to claim that:

> "provision for secondary age children with persistent reading difficulties calls for greater attention...additional support for those children starting secondary school without reading skills is essential if they are to make progress and not fall further behind their peers" p. 13.

EPs represent an important component in the process of not only conducting further research but also in disseminating new and emerging research findings to teaching staff who may not otherwise have access to it (Monsen & Woolfson, 2012). There is then an additional EP role in helping to ensure the effective implementation of an intervention as noted by Forman et al (2009) who state

> "school psychologists...may be able to provide substantially more leadership in a programme implementation by taking on the role of 'champion' for the intervention, co-ordinating implementation procedures or providing technical assistance to primary implementers" p.35.

Overview of research aims

The above review demonstrates that while there are some evidence-based reading interventions available for children with dyslexia in England, there are very few that are appropriate for a population of secondary-age students with dyslexia. An intervention programme common in the London borough in which the present study was carried out, Toe By Toe, currently has a limited evidence base. Furthermore, there are issues relating to making links between research and practice in schools and ensuring effective implementation of new intervention programmes, which can usefully be explored. The present study is intended to inform EP professional practice by increasing the evidence-base for the efficacy of Toe By Toe, obtaining staff and student's views on the scheme and exploring potential barriers to effective implementation of the scheme. This information will be useful in supporting schools in

the selection and implementation of reading interventions for students with dyslexia. The aims can be outlined as follows:

1. Quantitatively assess the efficacy of Toe By Toe as a wave 3 phonics-based reading intervention for secondary students with severe word reading difficulties.
2. Provide qualitative information on the staff and student's responses to Toe By Toe, and on how to ensure effective implementation of the scheme.

Research questions

Having outlined the aims of the research above, the research questions are as follows:

1. Is Toe By Toe an effective intervention for a population of London secondary school children with severe word reading difficulties?
2. What are the students' views of the usefulness of Toe By Toe and do they feel the intervention has assisted their work?
3. What are the staff's views of the usefulness of Toe By Toe and do they feel the intervention has assisted their work?
4. What are the major barriers to implementing new interventions in secondary schools and how do school staff make use of current research on reading interventions?

Chapter 3: Methodology

Before addressing the questions regarding the efficacy of Toe By Toe and barriers to implementation, it is first necessary to consider the theoretical perspective being adopted by the study. Following this a method of data collection and analysis that can best answer the research questions and which complements the adopted perspective can be developed. The details of these are outlined in this section.

Theoretical and Methodological perspective

Throughout this study a pragmatic perspective was adopted in relation to methodological and epistemological issues, and the research questions have therefore been allowed to direct the choice of data gathering tools (see Tashakkori & Teddlie, 1998 for review). From this perspective, there is no search for an absolute truth but rather a belief that the research question is more important than the method used or the worldview that underpins this method. As such the research question is addressed using the most appropriate methodological tools available with a keen focus on 'what works' and the usefulness of the intervention being studied (Cherryholmes, 1992; Howe, 1988). Gergen (1999) has recommended the notion of using 'usefulness' as a pragmatic criterion for assessing whether a particular approach 'fits' for a person's needs or has been successful, rather than focusing on abstract notions of whether a hypothesis or an intervention is 'right'.

This line of thinking provides us with a way to progress with research without being constrained by our choice of method or limiting the scope of our findings. A pragmatic approach such as this is also advocated by Carr (2000) who argues that researchers can make use of empirical or qualitative research as long as they keep in mind that problems they identify are social constructions and should not therefore be regarded as 'true'. It follows that research questions and findings should not search for an absolute truth but rather should be concerned with findings and outcomes that are 'useful' for those involved. From this point of view, what is important is that techniques used to identify difficulties and bring about improvements fit with a

person's needs and bring about a positive result. When we take this view, a pragmatic perspective allows us to be flexible in our approach.

When data was being collected and subsequently analysed, this pragmatic approach to espitemology allowed a subjective perspective on the results of the research. While the research aimed to be objective in the collection and interpretation of data it was acknowledged that the role of the researcher and their values and interests may have an impact on data collected and on the selection of data used in the interpretation of results. As it is possible that unexpected results may emerge from the results of the study, a new theory could be considered in the final discussion stage in order to explain the new findings and their implications. Again, a pragmatic approach allows the possible introduction of a new theory via an inductive approach to the data (Tashakkori & Teddlie, 2009).

Historically, it has been acknowledged that a central tenet of a pragmatic approach is that qualitative and quantitative approaches are compatible and can be used together in the same study. As the paradigm accepts that these methods are compatible, they may usefully be used to complement each other in a mixed methods design (Howe, 1988). This point is also made by Reichardt & Rallis (1994) who argue there is enough similarity in values between a qualitative and quantitative approach to enable the formation of "an enduring partnership" between the two approaches. Brewer & Hunter (1989) take this arguement one step further, describing the inefficiencies of mono method design:

> "Social science methods should not be treated as mutually exclusive alternatives among which we must choose...Our individual methods may be flawed, but fortunately the flaws are not identical. A diversity of imperfection allows us to combine methods...to compensate for their particular faults and imperfections."
>
> p.16-17

Research design

In view of the above a mixed methods design was decided upon to fully address the research questions outlined above. This allowed the use of methodological triangulation in a parallel mixed methods design (Creswell, 1995) in which the quantitative and qualitative data were gathered at the same time and analysed in a complementary manner. As well as triangulation to reconcile the results, this approach also enabled *complementarity* (i.e. examining overlapping and different facets of a phenomenon) and *expansion* (i.e. adding breadth and scope to the project) of the data as defined by Greene et al (1989). The intention for this approach was that it would be an equal status mixed methods design in which both qualitative and quantitative approaches are used equally to better understand the phenomenon being studied. There is some debate as to the extent to which this can be achieved. Morse (1991) contends that the two approaches cannot be weighted equally in a single study while Teddlie & Tashakkori (1998) disagree and provide examples to the contrary.

The use of a mixed methods design allowed the research to pose both confirmatory and exploratory questions. The confirmatory questions regarding the efficacy of Toe By Toe as a secondary school reading intervention underpinned the *quantitative* data collection and analysis. This quantitative strand aimed to replicate the McKay (2007) study outlined above and provide statistical data on the efficacy of Toe By Toe in students with dyslexic-type reading difficulties. By contrast, the exploratory nature of the questions regarding staff and student views on the usefulness (or otherwise) of Toe By Toe and barriers to effective implementation necessitated a *qualitative* approach which made use of structured, open-ended interviews. Teddlie & Tashakkori (1989) note that while traditional quantitative approaches make use of relatively detailed and planned instruments for data collection, qualitative research has often been conducted without the use of such explicitly pre-planned data collection methods. Miles & Huberman (1994) provide a range of reasons why this open-ended approach can be an important virtue in social-sciences research. These include highly structured instruments (such as tick box questionnaires) being vulnerable to overlooking or misrepresenting an important underlying construct and prior

instrumentation being context-stripped and thus aiming for universality and conformity rather than picking out peculiarities or subtle differences in experience.

Certainly, arguments to the contrary could be made in favour of a more tightly pre-planned approach but in this case it was felt that open-ended individual interviews would complement the quantitative element of the study by giving the students and staff the opportunity to provide their own opinions on the usefulness and usability of the intervention in an unrestricted manner that gave them the opportunity to put their views across in their own words. The use of an open-ended interview approach allowing the interviewee to guide the discussion and the researcher to ask additional exploratory questions was felt to be the best way to achieve this aim. This is based on recommendations from Todd (2003) who argues that if students are involved in the decision making process, they can provide very useful information about their own abilities and possible interventions they feel comfortable with, that will increase the chances of a useful outcome.

It was felt it would also be useful to spend some time during the interviews exploring the experiences of reading and reading habits of the students to provide some context and background to the study and to give the students a chance to discuss this highly relevant aspect of the intervention. Similarly, school staff were also questioned on school reading policy and current intervention strategies to provide depth and context to their views on Toe By Toe and the difficulties of implementing new interventions (see 'procedure' for further details).

These responses could then be analysed in detail to explore emerging themes and commonalities (see 'Method for research aim 2' p.50).

Method for research aim 1: Quantitative evaluation of the efficacy of Toe By Toe

While recognizing that a Randomised Controlled Trial (RCT) is the 'gold standard' for this kind of research (Torgerson & Torgerson, 2008) it was not possible to achieve this for a number of reasons. First, the research was intended to collect data useful to

schools in the London borough of Barking and Dagenham and it is was therefore a necessary restriction of the research that it be carried out in the borough, limiting its random element. Additionally, the children put forward for involvement by the schools involved did not constitute a large enough sample to ensure equivalence between the Test and Waiting Control groups. As such a quasi-experimental design was adopted (see 'Design' below). While the importance of RCTs is often stressed (Torgerson & Torgerson, 2008; Snowling & Hulme, 2011;) it is worth noting that a quasi-experimental, case-controlled study can be regarded as a best alternative that can give reasonable evidence that an intervention works (Carroll et al. 2011) and that for sample sizes of less than 100, restricted randomisation does have a useful role (Torgerson & Torgerson, 2008). Additionally, the views of Torgerson & Torgerson (2008) regarding the usefulness of simple randomisation does seem to be a minority viewpoint. In a review of 232 healthcare trials published in major journals, only 9% appeared to have used simple randomisation (Hewitt & Torgerson, 2006).

The primary outcome of Toe By Toe is to improve phonic decoding skills and word recognition accuracy. Consequently, phonic decoding accuracy and word recognition accuracy tests were carried out to measure these primary outcomes. Measures were also taken for potential secondary outcomes comprising sight word reading fluency, phonic decoding fluency, passage reading fluency and passage reading comprehension. These measures of potential secondary outcomes were included as it was hoped that improved phonic decoding and word reading strategies might result in generalisation of these skills to other component skills required for reading (Scarborough, 2002; Fuchs et al, 2001). Also, results from these tests could inform future planning for on-going reading interventions as they would provide data on what aspects of reading were improved by Toe By Toe (and therefore what alternative interventions may also be necessary in certain children to improve their reading skills). In addition to these measures, psychometric measures of vocabulary were taken prior to intervention to provide an estimate of baseline verbal skills which are known to predict reading ability (Carroll, Bowyer-Crane, Duff, Hulme, & Snowling, 2011). Gathering this data allowed an analysis of how the baseline verbal skills of the students

affected their response to the intervention. Details of tests used are outlined in the 'Assessment Battery' section below.

Design

A quasi-experimental 2-group, baseline/test controlled study was conducted in which a total of 30 children from 2 inner-London secondary schools were involved in a Toe By Toe intervention, selected via an initial screening test of word reading ability. Baseline measures of vocabulary, single word reading accuracy, phonic decoding accuracy, single word reading fluency, phonic decoding fluency, passage reading fluency, and passage reading comprehension were then taken for both the Waiting Control and Test groups prior to the intervention (t1). A Waiting Control group (WCG) design was used in which the Test group (comprised of 15 participants) received the Toe By Toe intervention for 10 weeks while the WCG (comprised of 15 participants) continued receiving their lessons and any additional support as normal. After the Test group completed their 10 week intervention all measures were taken again for both groups, excluding the vocabulary measure, to assess any gains made by the Test group compared to the WCG (t2). The WCG received the intervention programme once the training of the Test group had finished, for the same duration of 10 weeks. After the WCG intervention had ended, they were given a post-intervention assessment and their data was combined with the Test group data, effectively doubling the Test group sample size. Finally, a delayed post-test follow-up was carried out with the Test group in November 2012, 6 months after the initial intervention (t3) to assess longer term maintenance of gains from the intervention. Delayed post-test follow-ups were not carried out with the WCG as less than 6 months had passed since they were last tested. This was less than the recommended re-test time for the tests used and strict time restrictions on the research meant re-testing this group 6 months after their intervention was not possible. As in the MacKay study (2007), the intervention in the present study was delivered by school TAs who were trained in the use of Toe By Toe prior to the start of the intervention.

Participants

Children were recommended for the study by their schools and were selected on the basis that they were the poorest word readers in their school year with a reading age

18 months or more behind their chronological age based on school records collected 1 month previously. The tests used to collect this data varied between the schools. One school used the Macmillan Graded Word Reading Test (1985) and one used the Neale Analysis of Word Reading Ability (1999). Year groups 7-10 were included but older age groups were excluded as their schools were not willing to disrupt their studies during their final GCSE year or A-level years. None of the children involved had a dyslexia diagnosis and 1 had English as an Additional Language (EAL). However, this EAL child was included due to concerns around her reading ability rather than due to a limited grasp of English. Table 1 shows the number of children from various ethnic backgrounds involved in the study.

Table 1: Ethnic backgrounds of the children selected for the study

Ethnicity	No. of children from this background
White – British	9
White – Other	4
Asian	2
Black – British	11
Black - Other	4

Consent forms were sent home with the children prior to their involvement, explaining the purpose and content of the intervention to parents and giving them the opportunity to opt their children out of the intervention if they did not want them involved. All children involved were on the school SEN register and had Individual Education Plans (IEPs) relating to their reading difficulties meaning their potential inclusion in a reading support programme would not be a surprise to parents. A copy of the letter to parents can be found in Appendix A. Forty-six students were put forward across the 2 schools and these were given an initial screening test of word-reading accuracy using Word Card 2 in the GL Assessment Single Word Reading Test 6-16 (GL Assessment, 2007) to test their eligibility for the study. Of these students, the 30 with the lowest word reading ability were allocated to either a WCG or Test group using a matched randomisation method as described by Torgerson & Torgerson (2008):

> "With (this method) participants are formed into pairs on the basis of one or two important co-variates...Once the participants have been paired, one of each pair is randomly allocated to the intervention group" p.35

This means that the Test group and WCG can be equally matched on key variables. This pairing process leads to well balanced groups on the pairing variables and this eliminates most of the variation that could result from these confounders, leading to more precise statistical estimates of effect. This approach was chosen because the limited sample size meant true randomization would have been unlikely to produce well-balanced groups on the key variables. In the present study, participants were matched to achieve an equal spread of age, gender and word-reading ability across each group. Despite the advantages described here, it should be acknowledged that the matched randomisation method described above is susceptible to selection bias and is inferior to a true RCT for that reason.

All students were informed of the content and purpose of the research before they started the intervention and given the option to opt-out if they did not want to be involved. None chose to opt-out. A sample size of 30 was decided upon based on an approach to estimating sample size recommended by Lehr (1992) and Torgerson & Torgerson (2008) to provide 80 percent power at a 5 percent significance level. A conservative effect size of 1 was used in these calculations, based on the effect size of 1.7 provided in MacKay's study (2007).

Assessment Battery

1. Vocabulary

   Receptive Vocabulary (t1 only): The British Picture Vocabulary Scale (BPVS II; Dunn, Dunn, Whetton & Burley, 1997) was given to provide an estimate of receptive verbal ability at baseline. In this test children are shown 4 pictures on a page and are asked to match one of the pictures to a word that is read to them.

2. Word Recognition Processes

2.1. Accuracy

Word Recognition Accuracy (t1, t2, t3): Progress in word recognition accuracy was assessed with a test of single word reading ability contained in the York Assessment of Reading Comprehension – Secondary Test (YARC; Stothard, Hulme, Clarke, Barmby & Snowling, 2010). This test is the GL Assessment Single Word Reading Test 6-16, 2007. The test requires students to read a list of increasingly difficult phonically regular and irregular words.

Phonic Decoding Accuracy (t1, t2, t3): The student's phonic decoding accuracy skills were measured with the Pseudo-word Decoding Test from the Wechsler Individual Achievement Test 2nd Edition (WIAT-IIUK; 2005). The Pseudo-word Decoding tests requires to the students to read aloud a list of increasingly difficult non-words. As such the students are forced to rely on their phonic knowledge to decode the words and cannot sight-read.

2.2 Fluency

Sight Word Reading Fluency (t1, t2, t3): The student's ability to sight read single words fluently was measured using the Test of Word Reading Efficiency (TOWRE; Wagner, Torgesen, Rashotte, 1999). In this test the students read aloud an increasingly difficult list of as many words as they can in 45 seconds.

Phonic Decoding Fluency (t1, t2, t3): The student's ability to decode phonics fluently was also measured using the TOWRE. In this test the students read aloud as many increasingly difficult non-words as they can in 45 seconds.

3. Reading Comprehension Processes

Passage Reading Fluency (t1, t2, t3): Ability to read passages fluently was measured using the YARC – Secondary Test (Stothard, Hulme, Clarke, Barmby & Snowling, 2010) making use of the supplementary passages in the test due to the expected low level of reading ability. Students are asked to read aloud a short passage and are timed while they do so. A record is kept of any reading

errors made. This test was included as it was felt an improvement in phonic decoding and word reading accuracy could result in improved passage reading fluency.

Passage Reading Comprehension (t1, t2, t3): This was also measured using the YARC – Secondary Test. Children are asked to read a passage aloud and then answer 13 literal and inferential comprehension questions and summarise the passage. Although Toe By Toe does not aim to improve comprehension it was felt that improved comprehension may be a secondary outcome if fluency and word reading ability were improved. *As measures of fluency and accuracy had already been taken, accuracy and reading rate scores generated by the passage reading comprehension test were not analysed.*

All of the tests used more than once during the research made use of parallel forms, making it possible to administer a different version of the test at each stage of data collection. For every test, set A materials were used at t1, set B at t2 and set A at t3. This made it possible to ensure a minimum of 6 months had passed between exposures to the same set of test materials. This was in line with recommendations in the test manuals. All tests generate standard scores and were age-appropriate for the sample.

The intention was to use the data gathered in ANCOVA calculations to test for statistical significance between the 2 groups on all the repeated tests and obtain effect sizes for any differences found. In this design the baseline scores would be used as the co-variate, the test scores as the dependent variable and the group (i.e. Test group/WCG) as the independent variable. ANCOVA was chosen as it has been demonstrated that change score analyses (such as t-tests) are usually unsatisfactory in a baseline/test design and that ANCOVA tends to be a more powerful test in these designs than difference scores (Dugard & Todman, 1995; Dancey & Reidy, 2004). Dancey & Reidy (2004) explain that in a baseline/test design "the pre-test score will normally be correlated with the change score thus the variation in pre-test scores is not removed when change score analyses are used". ANCOVA can be used to partial

out the effect of the pre-test to allow a focus on any possible change resulting from the intervention.

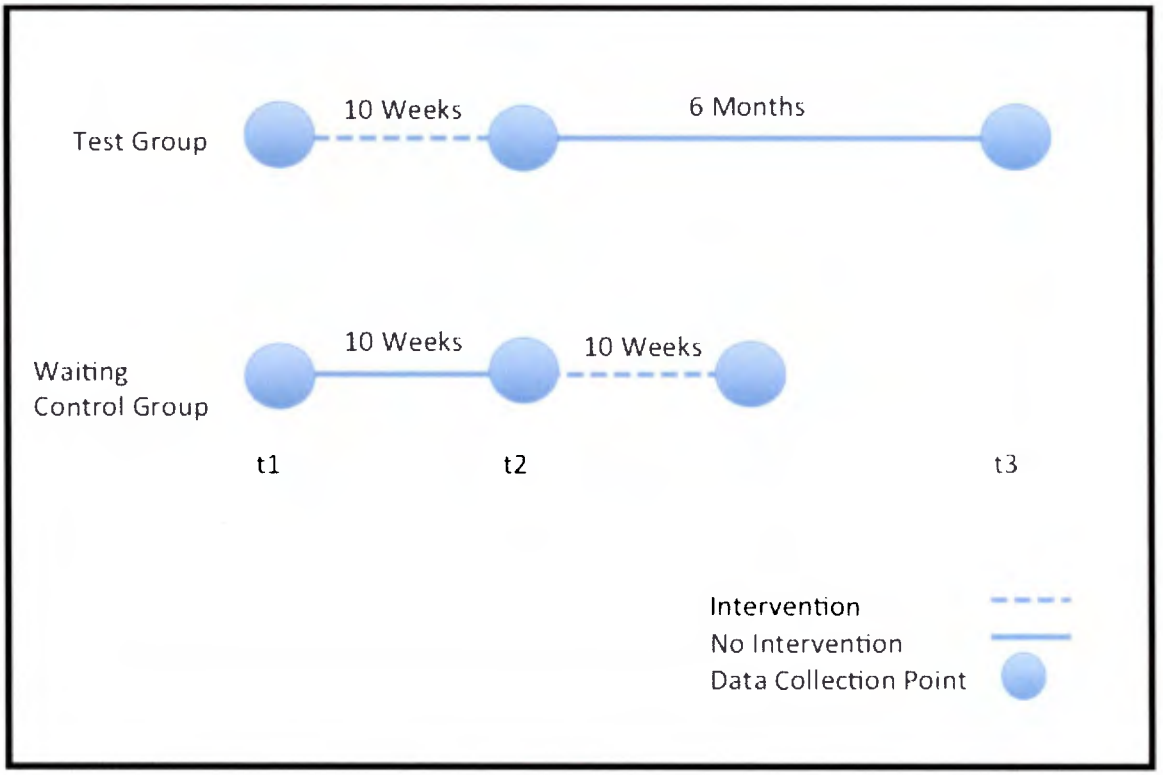
Timetable of key dates

The programme of research and intervention ran as follows:

- Beginning January 2012 – Initial screening testing and first TA Toe By Toe training sessions.
- W/c 23rd Jan – Baseline testing of Test group and WCG (t1) and second TA Toe By Toe training session.
- W/c 6th February – Test group Toe By Toe intervention starts and runs for 10 weeks.
- W/c 30th April – Test group Toe By Toe intervention ends. Both groups re-tested immediately (t2).
- W/c 7th May – Second wave of intervention begins with WCG and runs for 10 weeks.
- W/c 23rd July – Second wave of intervention ends and WCG are re-assessed.
- November 2012 – Test group delayed post-test assessment after 6 months (t3).

Fig. 4 provides a diagram of when intervention and testing was carried out for the Test group and WCG.

Figure 4: Data collection points for Test group and Waiting Control Group



Training of Teaching Assistants

The schools involved in the study allocated 1 TA per child who was to receive the Toe By Toe intervention programme, meaning a total of 15 TAs were involved in total. At the start of the spring term 2012 all TAs involved were given a 45 minute group training session on the use of Toe By Toe by an experimenter who had previously received Toe By Toe training. This involved an explanation of the aims of the programme, the skills it is targeting, its structure, techniques and the way in which a student should progress through it. Time was also taken during this session to demonstrate how each page of the book should be completed and how records should be kept of each individual session. TAs were allowed to each take a copy of the Toe By Toe manual home with them to familiarise themselves with the content.

A second 30 minute training session was held 3 weeks later by the same experimenter in which the material from the first training session was reviewed and another demonstration of how to progress through the book was provided along with a chance for the TAs to practice using the book with feedback provided. Information on the frequency and duration of the intervention was also provided. TAs were also given a

chance to ask any questions they had about the intervention and were provided with written guidelines summarising the content of the training sessions (see Appendix B).

Delivery of programme

While Toe By Toe could in theory be carried out with a child every day, the restrictions of school timetabling and staffing levels made this impossible. It was therefore agreed that each school would aim to provide the programme 4-5 times per week with every child, for 15 minutes per session in line with the hours implied in the MacKay study (though MacKay does not provide specific details on this). A 10 week intervention meant that each child could expect to receive a minimum of 10 hours of one-to-one intervention (i.e. 4 to 5 x 15 min sessions per week = 40 to 50 x 15 min sessions in total = 600 to 750 minutes per child). Fidelity checks took place at 2 week intervals and details of these can be found in Appendix C.

Additional information

During the intervention period all children involved in the intervention continued their usual school timetable as both schools chose to deliver the intervention during form time, meaning no lessons were missed. The children all attended literacy lessons every day at school meaning they received a minimum of 5 hours per week of literacy instruction while the intervention was running. In addition to this, children with low reading ability in both schools were required to complete at least 15 minutes of individual or guided reading every day. As all children involved in the intervention were in these low reading ability groups they were all required to complete this reading every day alongside the intervention and their literacy lessons. This meant the intervention drew on recommendations from Hatcher, Hulme and Ellis (1994) to teach phonics in conjunction with book reading practice to improve phonic decoding and fluency skills as effectively as possible.

Method for research aim 2: Qualitative interviews exploring staff and student responses to Toe By Toe and barriers to implementation

The qualitative strand of the research took place at t2 (see 'design' above), immediately after the Test group had completed their 10 week Toe By Toe intervention. As outlined above the aim for this strand of the research was to use

open-ended interviews to elicit views from both the students and the teaching staff involved in the study (comprising 15 TAs and 2 SENCOs). Interviews were conducted in a quiet room in which only the researcher and interviewee were present. The interviews were conducted in a semi-structured, open-ended format to allow the researcher to focus the interviewee on the key research questions while allowing them the opportunity to open up the discussion and respond in terms generated by them. Interviews were recorded electronically for later analysis and lasted approximately 15 minutes. Respondents were offered the opportunity to opt-out before or during an interview if they were not comfortable taking part and were assured before the recording started that any results obtained would be anonymous and treated with strict confidentiality.

Procedure

Following their involvement in the quantitative strand of the research, students were selected for interview from the Test sample and it was decided to interview approximately half the test sample (i.e. aiming for 8 in total, selecting 4 from each school using a matched randomisation method; Torgerson & Torgerson, 2008). Student interviews aimed to elicit the views of students towards the Toe By Toe intervention, their own reading ability and feelings towards the support they receive for their reading difficulties in school and at home. The interviews consisted of questions relating to (a) their feelings about themselves as a reader and their confidence in literacy classes (b) their feelings about the support they have received whilst at home/school and how useful this has been and (c) the Toe By Toe intervention and their perceptions of the usefulness of the scheme (see Appendix D for interview schedule).

Both school SENCOs and half of the TAs involved in the study were also selected for interviews, meaning 9 interviews were carried out with school staff. These interviews were intended to obtain their views on the difficulties facing them and the school with regard to implementing literacy interventions as well as their feelings towards Toe By Toe and its usefulness in this context. TA and SENCO interviews comprised of questions on (a) the school's reading policy and intervention strategies (b) the barriers faced when selecting and implementing literacy interventions and (c) their views on

the usefulness and ease of use of Toe By Toe as a reading intervention (see Appendix E for interview schedule). All interviewees except the 2 SENCOs were selected using a random name selector facility in Excel (2011). As the SENCOs were in charge of SEN provision in their respective schools, it was felt essential to obtain their views alongside a sample of their TA staff.

Analysis

Thematic analysis was used to encode the qualitative information. An effort was made to present all of the themes that emerged from the participant interviews no matter how often they occurred, thus avoiding the assumption that the staff or students involved had a collective view or identity and rejecting the notion of a pure generalizable voice (see Fielding, 2007). It was also acknowledged that even if the discourse outlined below is useful and authentic it must still only be viewed as partial discourse, subject to the views of the interpreter (Fielding, 2004). Thematic analysis is an approach to qualitative analysis which has been viewed as quite broad (i.e. a researcher looks at the data and picks out themes) and which has advantages and disadvantages (Braun & Clarke, 2006). However, it was decided this approach suited the data gathered as the broad research questions of the present study aimed to explore a wide range of themes that were felt to be of importance to students and school staff rather than give a highly detailed analysis of individual responses to a certain aspect of the intervention. Thematic analysis therefore provided a valid framework on which to base the analysis while acknowledging the context of the research and the specific viewpoint of the researcher. This approach was also chosen due to concerns outlined by Barbour (2001) and Yardley (2000) around overly prescriptive methods of data collection in qualitative research resulting in researchers becoming so focused on analysis with set rules and procedures that they risk overlooking key information or taking an uncritical stance to their own research. In line with advice from Yardley (2000) the procedure for analysing data and identifying themes is outlined below to ensure transparency.

The researcher listened to each interview several times, transcribed them and then analysed each one to draw out emerging themes and indicators. Preliminary themes were generated inductively from the raw information in the interviews and responses

from interviewees from each school were compared to establish any differences in response emerging from the 2 schools involved. No major differences were found. Following this the coding procedure followed recommendations outlined by Saldana (2008) and can be summarised as follows.

A process of preliminary coding took place, allowing identification of similar codes across the interviews. Care was taken to minimise interpretation at this point and develop codes as close to the raw information and language of the interview as possible. Once a code was found, other transcripts were explored for evidence of that code to identify patterns in the data. Codes were then collated where possible if they were found to be similar to other codes, or kept separate as necessary. Clusters of codes were then created so that broader themes could be identified. This involved the use of mind-maps to plot the codes and decide what over-arching theme could be used to describe them. The process used here was not linear and involved regular reviewing of transcripts to re-visit initial codes in order to produce themes that were of relevance to the research question and which appeared to represent the feelings and opinions voiced.

Having arrived at a set of themes they were then reviewed to see how well they fitted the data. If they did not appear to capture the data or did not adequately describe the codes, they were changed or removed. This process involved amalgamating or renaming some themes and producing sub-themes within a theme. The names of all the themes emerging from each qualitative research question can be found in Table 8 in the 'Results' section.

In order to improve reliability in the analysis, 'double coding' was used as described by Miles & Huberman (1984). In this technique two (or more) people engage with the raw data independently. They then make separate judgements about the interpretation of what they have observed and following this they come together to compare their results. The discussion that follows is useful in order to reach agreement on what has been observed and how it could be interpreted. No claim is made that any judgements

reached are entirely objective, but rather that confidence can be increased in the dependability of the judgements (Boyatzis, 1998).

Other merits of having multiple perspectives on the data analysis included the opportunity for another researcher to act as what Barbour (2001) refers to as 'the devil's advocate' in which new interpretations, questions and reasons for ascribing codes can be considered and findings can be discussed and justified. Furthermore, the use of additional perspectives helps mitigate against the bias of the researcher. In the present study, there may be a bias towards an EP perspective due to the background of the author and therefore the addition of viewpoints from other professionals (in this case a secondary school teacher and a clinical psychologist) allowed for critique from those with differing practical and theoretical views. During the qualitative data analysis the two additional researchers were asked to carry out the steps above using four randomly selected transcripts. This was followed by discussion about any perceived differences in codes and themes and whether there was consensus between the researchers. Again, it was accepted that differences in codes could occur, but that a 'good fit' between researchers was important. The role of the researcher and aims of the research must also be acknowledged here as potential 'coding filters'. Merriam (1998) summarises this, saying:

> "Our analysis and interpretation – our study's findings – will reflect the constructs, concepts, language, models and theories that structured the study in the first place." p.48

Chapter 4: Results

This chapter will summarise the results from the quantitative and qualitative strands of this research. Section 1 will summarise the characteristics of the two groups of poor readers, comparing group mean scores across the vocabulary and reading measures. Section 2 will then present results from the intervention study, first reporting the reading gains for the measures of word recognition (sight word reading accuracy and fluency; non-word reading accuracy and fluency) for the Test and WCG. The results for the passage reading comprehension and passage reading fluency tests will then be examined. The maintenance gains of the Test group will be examined by comparing word recognition results at time 2 (test) with time 3 (6 month delayed post-test). These quantitative results first show findings for the group as a whole and the group results are then followed by an exploration of individual differences in response to the intervention programme.

The quantitative results are followed (in Section 3) by the qualitative research findings which use thematic analysis to provide an overview of the student and staff responses to the exploratory research questions regarding the usefulness of Toe By Toe and barriers to implementation of an evidence-based intervention programme in two secondary schools.

Quantitative results exploring the efficacy of the Toe By Toe intervention

All individual reading test results from the base-line and test stages were marked and scored by an experimenter and scores were then entered into SPSS for analysis (raw scores and standard scores). No data were found to be missing from these assessments for any participants. However, analysis of the Toe By Toe records kept by each school showed that 2 students had missed almost half of their sessions due to absence from school and their results were consequently removed from the data set. This left a total of 28 participants, 14 in the WCG and 14 in the Test group. Results for the WCG were added to those of the Test group after their 10 week intervention, effectively doubling the Test group size to 28. All participants completed the reading tests as requested and the data were found to be normally distributed. ANCOVA was

used to analyse scores for each test using Group (i.e. Test group/WCG) as a fixed variable, with scores at test as the dependent variable and scores at baseline as the covariate. Standard scores are reported for all the reading tests unless otherwise stated. Partial eta^2 was used to obtain a measure of effect size. At 6 month delayed post-test (t3), paired samples t-tests were used to compare the Test group results on each reading test at t2 and t3, to assess whether the scores had altered significantly since the end of the Toe By Toe intervention. Delayed post-test testing was only carried out with the Test group, as it was not felt enough time had passed for follow-up testing to be valid for the WCG.

Significant effects for Group were found for Phonic Decoding Accuracy, Word Recognition Accuracy and Phonic Decoding Fluency. Results from all tests are presented below.

Section 1: Group characteristics at baseline (t1)

Analysis of the group scores at baseline showed that the difference in average age between the Test group and WCG was within 1 month. Scores on the screening test of Single Word Reading (GL, Assessment, 2007) were within 1 standard score point between the groups. Comparisons were carried out between the Test group and WCG on all measures at baseline (t1). Independent samples t-tests were used in these comparisons and showed that no baseline differences were significant (p=>0.01) on any of the measures. Table 2 shows key characteristics of the Test group and WCG at baseline and Table 3 shows Test group and WCG scores at t1 and t2 on all tests.

Table 2: Characteristics of Test group and WCG at baseline

	Test (SD)	Waiting Control (SD)
Average Chronological Age In Years	13.4 (1.1)	13.3 (1)
Average Standard Score on Single Word Reading Test 6-16 (GL Assessment, 2007)	73.1 (3.7)	74.1 (5.4)
Male / Female	6 / 9	8 / 7
Vocabulary Score on the BPVS-II (1997, GL Assessment)	74.4 (13.3)	71.4 (14.7)

Table 3: Mean scores and standard deviations for the Test group and WCG at T1 and T2 for all tests.

Phonic Decoding Accuracy T1				**Phonic Decoding Accuracy T2**			
Test		*WCG*		*Test*		*WCG*	
Mean	SD	Mean	SD	Mean	SD	Mean	SD
63.8	7.1	64.1	6.5	71.1	9.6	64.1	7.7
Word Recognition Accuracy T1				**Word Recognition Accuracy T2**			
Test		*WCG*		*Test*		*WCG*	
Mean	SD	Mean	SD	Mean	SD	Mean	SD
72.1	4.4	71.6	3.6	76.7	10.3	71.6	3.6
Word Recognition Accuracy (RS*) T1				**Word Recognition Accuracy (RS*) T2**			
Test		*WCG*		*Test*		*WCG*	
Mean	SD	Mean	SD	Mean	SD	Mean	SD
26.6	10.1	26.6	8.3	33.3	11.2	29.3	8.6
Phonic Decoding Fluency T1				**Phonic Decoding Fluency T2**			
Test		*WCG*		*Test*		*WCG*	
Mean	SD	Mean	SD	Mean	SD	Mean	SD
72.4	12.2	70.7	11.2	78.2	11.9	71.2	12.2
Sight Word Reading Fluency T1				**Sight Word Reading Fluency T2**			
Test		*WCG*		*Test*		*WCG*	
Mean	SD	Mean	SD	Mean	SD	Mean	SD
75.6	12.2	76.1	12	76	12.2	75.2	11.5
Passage Reading Fluency T1				**Passage Reading Fluency T2**			
Test		*WCG*		*Test*		*WCG*	
Mean	SD	Mean	SD	Mean	SD	Mean	SD
72.1	4.6	72.4	5.9	72.9	4.4	71.6	4.4
Passage Reading Comprehension T1				**Passage Reading Comprehension T2**			
Test		*WCG*		*Test*		*WCG*	
Mean	SD	Mean	SD	Mean	SD	Mean	SD
87.1	12.9	89	14.6	85.8	13.1	85.8	11.2

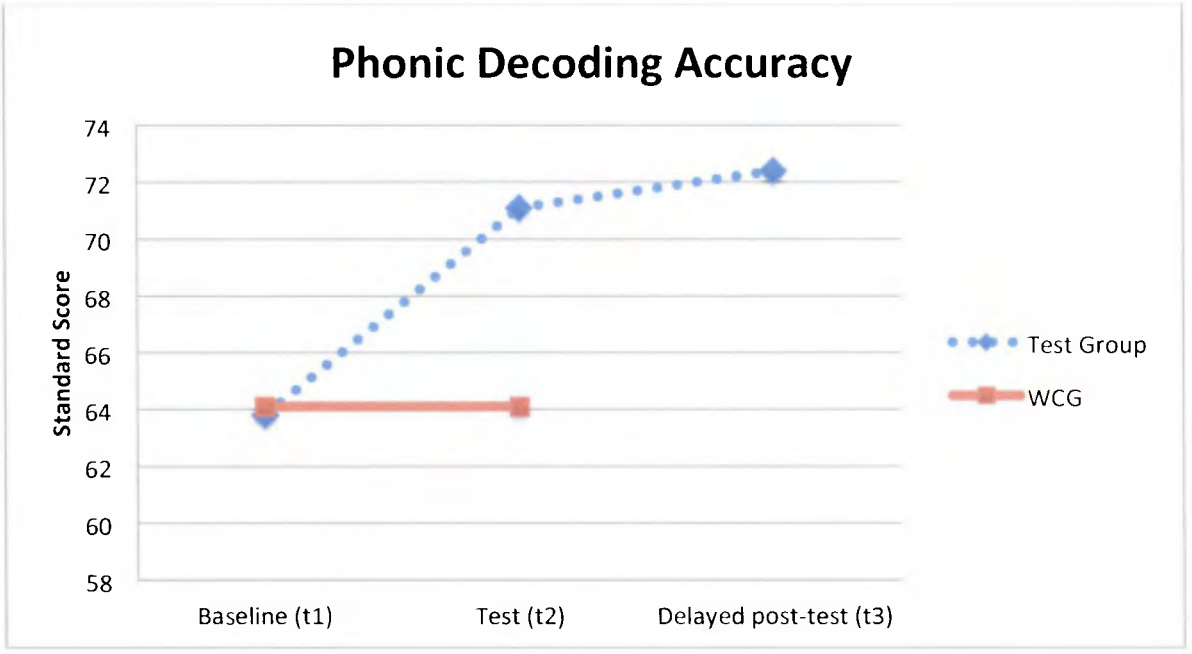
All mean scores are standard scores unless otherwise stated.

***RS = Raw Score**

Section 2: Results from the Toe By Toe intervention programme

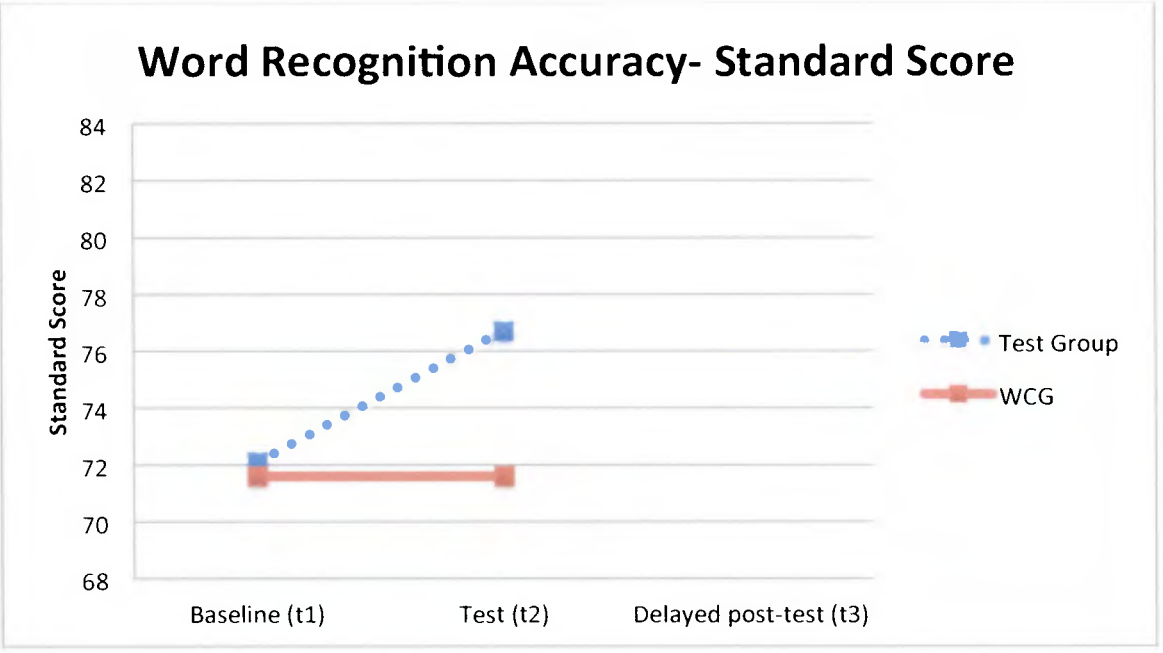
Group comparisons across word recognition processes: Accuracy

Figure 5: Group means for Phonic Decoding Accuracy standard scores at baseline, test and delayed post-test.



From Fig. 5 it can be observed that the group mean standard scores at baseline (t1) are similar. The Test group mean is 63.8 (Standard Deviation=7.1) and the WCG mean is 64.1 (SD=6.5). The Test group score rises at test (t2) to a score of 71.1 (SD=9.6) while the WCG score stays almost flat at 64.5 (SD=7.7). An ANCOVA showed a significant effect for Group $F(1,42)=15.92$; $p=<0.001$ with an effect size of 0.290. At delayed post-test (t3) the Test group mean score has risen to 72.3 (SD=10.7). A paired samples t-test showed this change in score was not significant $t(13)=1.442$; $p=0.173$.

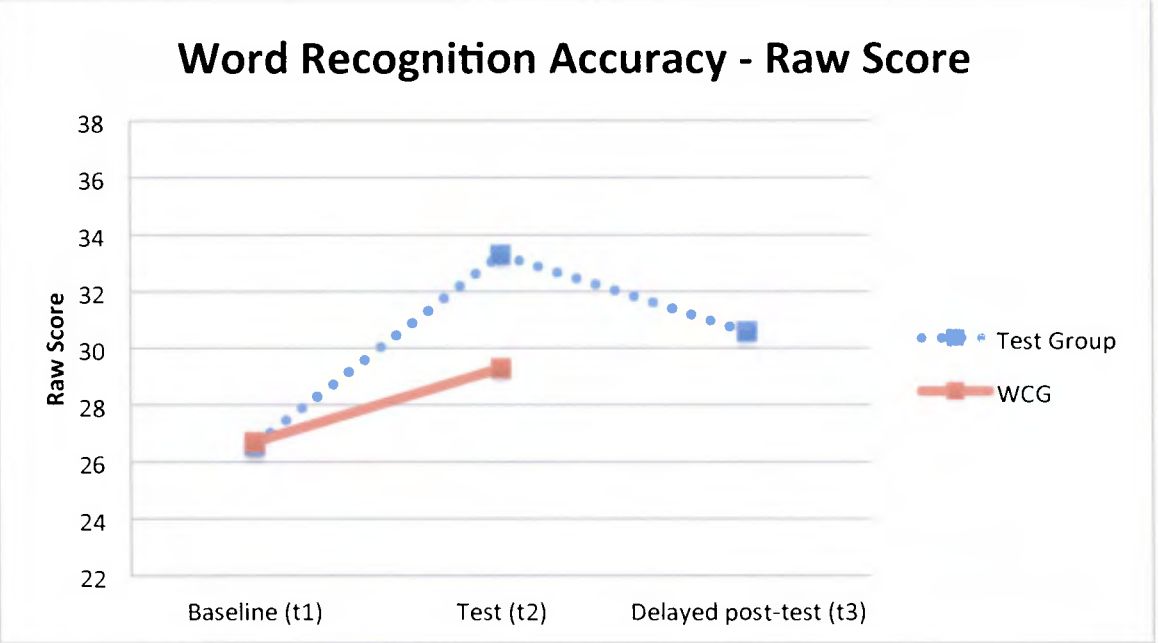
Figure 6: Group means for Word Recognition Accuracy standard scores at baseline, test and delayed post-test by Group.



The WCG had a mean baseline single word reading standard score of 71.6 (SD=3.6) compared to a Test group score of 72.1 (SD=4.4) at baseline. At test the WCG mean has stayed almost completely unchanged while the Test group mean has risen to 76.7 (SD=10.2). An ANCOVA showed that this Group effect was significant at $F(1,42)=5.09$; $p=0.03$ with an effect size of 0.116.

However, there was a concern surrounding the reliability of these results as so many students tested fell below the minimum standard score of 70 at baseline *and* test on the Word Recognition Accuracy test used. Any scores below a standard score of 70 on this test are simply recorded as <70. This lack of sensitivity in the test made it hard to measure progress using standard scores as any students scoring <70 at baseline and test had their potential progress masked by their unchanging standard score. For this reason the data was re-analysed using the student's raw scores from the test to investigate group differences further. For this test, the raw score represents the number of words read correctly during the test. A summary of the group mean raw scores on this test are shown below in Fig. 7.

Figure 7: Group means for Word Recognition Accuracy raw scores at baseline, test and delayed post-test.



These results show the baseline mean scores for the Test group and WCGs are similar at 26.7 (SD=8.3) and 26.6 (SD=10.1) respectively. At test both groups have shown a rise in their scores. The WCG mean has risen by almost 3 points to 29.3 (SD=8.6) while the Test group has shown an increase of almost 7 points to 33.3 (SD=11.2). An ANCOVA showed there was a significant effect for Group $F(1,42)=19.39$; $p=<0.001$ with an effect size of 0.332. These results confirm the concerns outlined above and show a considerably increased effect size in the Single Word Reading test results. At delayed post-test the Test group mean score has decreased to 30.6 (SD=13.2). A paired samples t-test showed that this change in score was not significant $t(13)=1.2$; $p=0.249$.

Figure 8: Group means for Phonic Decoding Fluency standard scores at baseline, test and delayed post-test.

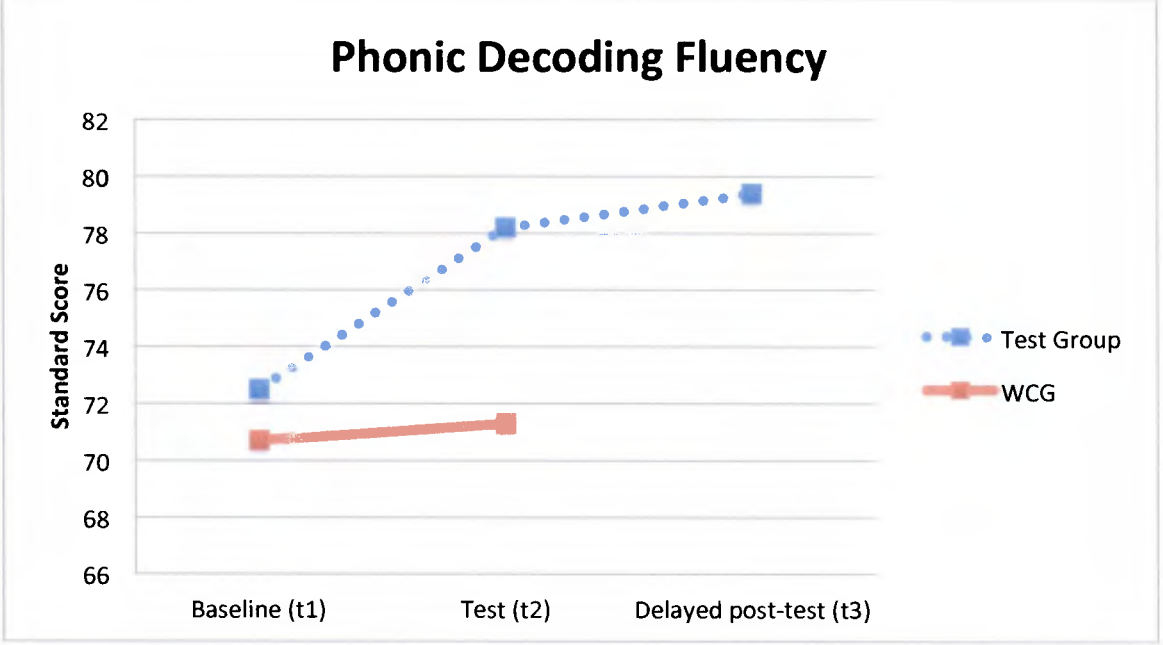
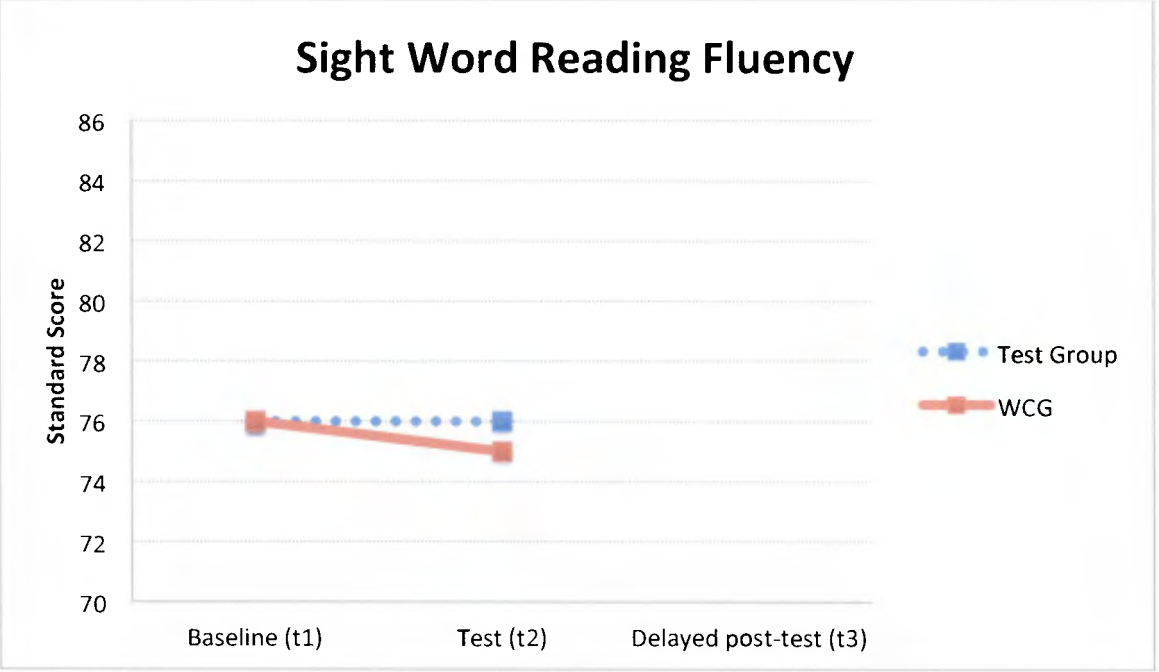


Fig. 8 shows the average baseline score for the WCG was 70.7 (SD=11.2) with the Test group scoring 72.4 (SD=12.1). The difference between the 2 groups at baseline was not significant as shown by an independent samples t-test T(1,40)=0.450; p=0.655. At test the WCG scores have risen by less than 1 point to 71.2 (SD=12.2) while the Test group scores have risen almost 6 points to 78.2 (SD=11.9). An ANCOVA showed there was a significant effect for Group F(1,42)=10.91; p=0.002 with an effect size of 0.219. At delayed post-test the Test group mean score had risen to 79.4 (SD=10.7). A paired samples t-test showed that this change in score was not significant t(13)=0.7; p=0.497.

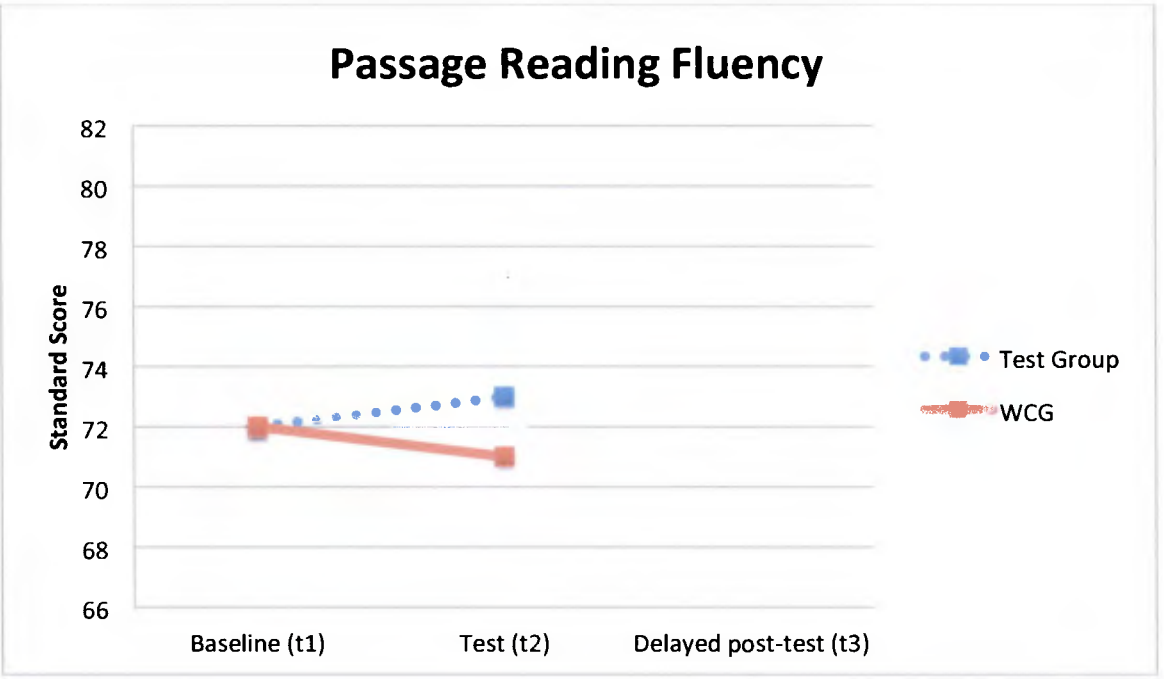
Figure 9: Group means for Sight Word Reading Fluency at baseline and test.



At pre-test the mean scores for the groups are close at 76.1 (SD=12) for the WCG and 75.6 (SD=12.2) for the Test group. At test the WCG mean is 75.2 (SD=11.5) and the Test group mean is 76 (SD=12.2). An ANCOVA showed no significant effects for Group $F(1,42)=0.623$; $P=0.435$ with an effect size of 0.016. As a result, post-test assessment was not carried out.

Group comparisons across reading comprehension processes: passage reading fluency

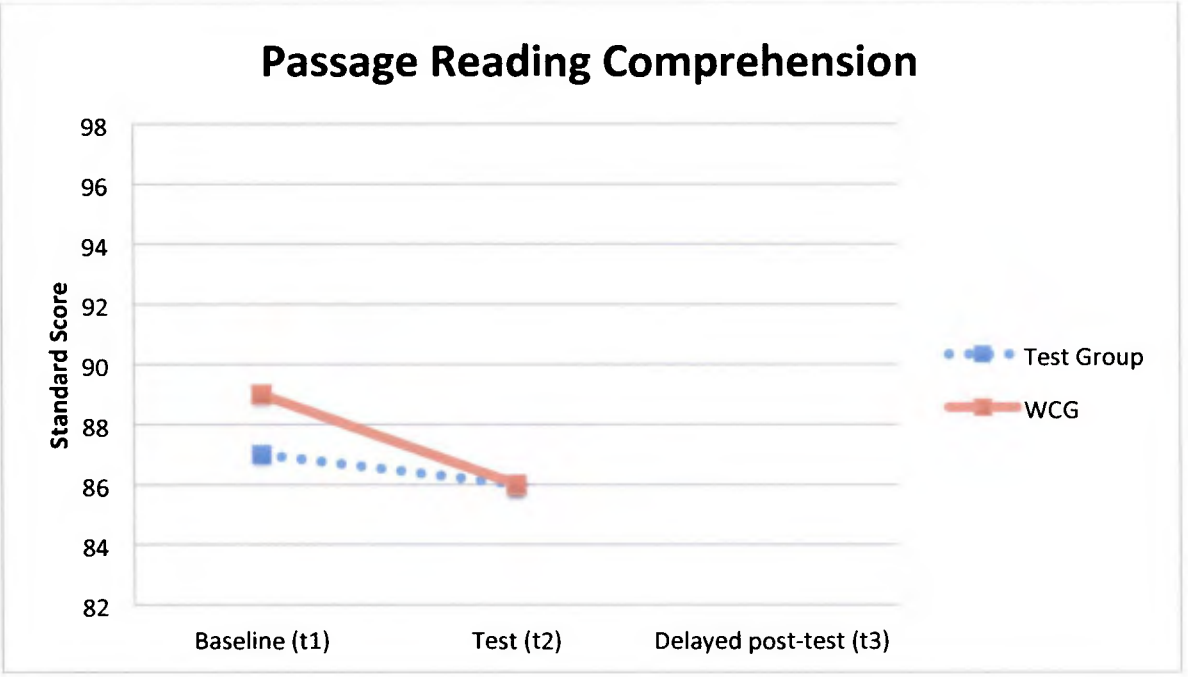
Figure 10: Group means for Passage Reading Fluency at baseline and test.



At pre-test the mean scores for WCG and Test groups are 72.4 (SD=5.9) and 72.1 (SD=4.6) respectively. At test the WCG mean is 71.6 (SD=4.4) and the Test group mean is 72.9 (SD=4.4). An ANCOVA showed no significant effects for Group F(1,42)=3.039; P=0.089 with an effect size of 0.072. As a result, delayed post-test assessment was not carried out.

Group comparisons across reading comprehension processes: passage reading comprehension

Figure 11: Group means for Passage Reading Comprehension at baseline and test.



At baseline the mean scores for WCG and Test groups are 89 (SD=14.6) and 87.1 (SD=12.9) respectively. At test the WCG mean is 85.8 (SD=11.2) and the Test group mean is 85.8 (SD=13.1). An ANCOVA showed no significant effects for Group $F(1,42)=0.537$; $P=0.468$ with an effect size of 0.014. As a result, delayed post-test assessment was not carried out.

Individual differences in reading gains

The results above focus on *average* group level of performance and improvements but not individual rates of response. While this has revealed which aspects of reading ability were most improved by the intervention across the Test group, some analysis at an individual level provides more detailed insight into how students progressed between baseline and test.

When considering the rates of improvement of individual students in the sample it is useful to look at recommendations in the manuals of the tests used for how to interpret the obtained scores. The WIAT-II (used to obtain Phonic Decoding Accuracy scores) describes a standard score of below 70 as 'extremely low', between 70-85 as

'below average' and 86-115 as 'average'. Using these definitions it is useful to look at what proportion of the sample moved from an 'extremely low' score at baseline to a 'below average score' at test on this measure of ability (see Table 4).

Table 4: Number (%) of students in the Test group with an 'extremely low', 'below average' or 'average' standard score for Phonic Decoding Accuracy at baseline and test

	No. of Students with an 'extremely low' Phonic Decoding Accuracy score (%)	No. of students with a 'below average' or 'average' Phonic Decoding Accuracy score (%)
Baseline (n=28)	9 (32%)	19 (68%)
Test (n=28)	7 (25%)	21 (75%)

Table 4 shows almost a third of the students had an 'extremely low' level of Phonic Decoding Accuracy at baseline. At Test, 2 students have managed to move from an 'extremely low' score to a 'below average' score.

The YARC (used to obtain Word Recognition Accuracy scores) describes a standard score of below 80 as representing a 'severe difficulty' with word reading, 80-84 as 'below average' and 85-100 as 'average'. Table 5 shows what proportion of the sample moved from a 'severe difficulty' at baseline to a 'below average' or 'average' score at test.

Table 5: Number (%) of students in the Test group with a 'severe difficulty', 'below average' or 'average' standard score for Word Recognition Accuracy at baseline and test.

	No. of Students with a 'severe difficulty' Single Word Reading score (%)	No. of students with a 'below average' or 'average' Single Word Reading score (%)
Baseline (n=28)	26 (93%)	2 (7%)
Test (n=28)	21 (75%)	7 (25%)

These figures show that a large proportion of the sample started the intervention with a severe level of word reading difficulty. Five children managed to move beyond a 'severe' level of difficulty during the intervention.

The TOWRE (used to generate Phonic Decoding Fluency scores) suggests a standard score below 79 is 'poor' while a score of 80-89 is 'below average' and 90-110 is 'average'. Using these descriptors, data can be provided to show what proportion of participants in the sample moved from a 'poor' score at baseline to a 'below average' or 'average' score at immediate post-test (see Table 6).

Table 6: Number (%) of students in the Test group with a 'poor', 'below average' or 'average' score for Phonic Decoding Fluency at baseline and test.

	No. of Students with a 'poor' Non-word Reading score	No. of students with a 'below average' or 'average' Non-word reading score
Baseline (n=28)	20 (71%)	8 (29%)
Test (n=28)	16 (57%)	12 (43%)

The majority of the students began the intervention with a 'poor' score on this ability measure indicating a low level of Phonic Decoding Fluency across the sample. Four managed to move from a 'poor' score to a 'below average' score at Test.

Standard score ratio gains

In order to allow comparisons of intervention efficacy across studies, meta-reviews often use ratio gain measures such as standard score gains per hour of instruction (see Torgesen, 2007; Brooks, 2007). These measures were applied to the statistically significant results above and the outcomes are summarised in Table 7. It was assumed in these calculations that students received 10 weeks of intervention and received approximately 1 full hour of intervention per week (i.e. 10 hours in total).

Table 7: Test group average standard score gains per hour of instruction

	Standard score gain per hour of instruction (SD)
Phonic Decoding Accuracy	0.48 (0.6)
Phonic Decoding Fluency	0.4 (0.5)
Word Recognition Accuracy	0.3 (0.6)

Table 7 shows standard score reading age gains of between 0.3 and 0.48 for the statistically significant test results. For further analysis of these results and comparison with previous studies, see 'Discussion' below (p.85).

Some analysis was also carried out to investigate how mean group Vocabulary scores on the BPVS-II at baseline in the Test group correlated with gains on the different measures of reading ability. As no significant correlations were observed, these data are presented in Appendix F.

Section 3: Thematic analysis from post-intervention interviews

Having presented the results from the quantitative strand of the study, it is now necessary to consider the findings from the semi-structured qualitative interviews carried out with staff and students involved in the intervention. Of the 15 children from the initial test group and 15 school staff involved, 8 children, 6 TAs and 2 SENCOs were interviewed. Interviewees were selected using a random name selector facility in Excel (2011). These are presented in terms of the themes emerging from the thematic analysis in response to each exploratory research question. Students views are presented first, followed by those of the school staff. All the themes generated during analysis are shown below in Table 8. Examples of annotated transcripts can be found in Appendices G and H.

Table 8: All themes and subthemes by research question.

Research Question	Theme	Subthemes
RQ 2. What are the students' views of the usefulness of Toe By Toe and do they feel the intervention has assisted their work?	Reading difficulties	*Struggle, lack of enjoyment, boredom, awareness of low ability, frustration, lack of progress*
	Reading Material and Frequency	*Reading preferences, choice, newspapers, magazines, library books, books from home, daily reading*
	Effect of reading location	*Preference for home, preference for school, benefits of reading environment, availability of help, better concentration, focus*
	Stress / Embarrassment	*Nerve-wracking, awareness of failure, public failure, peer pressure, standing out, viewed as stupid*
	Views of 'support'	*Being read with, extra teacher time, teaching assistants, group work, one-to-one*
	Reading strategies	*Sounding-out, blending, skipping words, guessing*
	Desired support	*More time reading, out of class reading, one-to-one, small group work, extra help*
	Responses to Toe By Toe	*Positive, fun, seeing progress, useful, individual support, desire to continue, success*
RQ 3. What are the staff's views of the usefulness of Toe By Toe and do they feel the intervention has assisted their work?	Assessment of reading	*Regular assessment, early intervention, importance of reading skills*
	Reading policy	*Dedicated reading lessons, library use, TA support, differentiation, low support staff numbers*
	Support and inclusion	*Inclusion, support (in class), support (out of class) literacy support programmes, persistent difficulties*

	Available interventions	*LEXIA, spelling workbooks, lack of funding*
	Selecting interventions	*Word of mouth, availability, lack of choice*
	Toe By Toe – Positive	*Strict record keeping, visual progress markers, evidence of work, one-to-one, clear instructions, structured, professional development, improves reading/spelling*
	Toe By Toe – Negative	*Cost, logistical/timetable problems, keeping books safe, no comprehension focus*
RQ 4. What are the major barriers to implementing new interventions in secondary schools and how do school staff make use of current research on reading interventions?	Budget/Staff	*Low budget, lack of support staff, cost of books, cost of training*
	Logistics/Timetable	*Inflexible timetable, lack of space/rooms, wasted time, missing lessons*
	Staff Training	*Plan in advance, training reviews/top-ups, time commitment, cost*
	Selecting interventions	*Word of mouth, opportunism, availability, lack of choice*

What are the students' views of the usefulness of Toe By Toe and do they feel the intervention has assisted their work?

Results from the student interviews are presented first and are organised according to the themes that arose from this research question. Relative frequencies of those who indicated a particular response are reported accompanied by quotations to provide some context for the category of response thus making use of recommendations from the National Children's Bureau (Danso et al., 2003) to present student's actual words rather than provide paraphrases. An overview of the themes identified for this research question can be found in Table 9 below.

Table 9: All themes and subthemes generated from Research Question 2

Research Question	Themes	Subthemes
RQ2. What are the students' views of the usefulness of Toe By Toe and do they feel the intervention has assisted their work?	Reading difficulties	*Struggle, lack of enjoyment, boredom, awareness of low ability, frustration, lack of progress*
	Reading Material and Frequency	*Reading preferences, choice, newspapers, magazines, library books, books from home, daily reading*
	Effect of reading location	*Preference for home, preference for school, benefits of reading environment, availability of help, better concentration, focus*
	Stress / Embarrassment	*Nerve-wracking, awareness of failure, public failure, peer pressure, standing out, viewed as stupid*
	Views of 'support'	*Being read with, extra teacher time, teaching assistants, group work, one-to-one*
	Reading strategies	*Sounding-out, blending, skipping words, guessing, segmenting, chunking*
	Responses to Toe By Toe	*Positive, fun, seeing progress, useful, individual support, desire to continue*

Reading difficulties

The vast majority of those interviewed felt that reading was a struggle for them and that they did not enjoy the process. 6 out of the 8 interviewed had negative responses to this question. Reasons provided were various such as having low ability, finding reading boring, finding reading too difficult and onerous a task and getting frustrated or embarrassed while reading with others. Most of these reasons stem from an

awareness of low reading ability and frustration with lack of obvious progress. Typical responses to these questions included:

"I don't really like reading but I try my best, it's just too hard sometimes", *"I don't have a good ability for my age. It's hard"* and *"I don't really like it. It's boring but I know I need to improve"*.

There were 2 positive responses to questions around reading enjoyment, with these students feeling that they sometimes enjoyed reading their class books or magazines but both of these also acknowledged that they needed additional support when reading and that their reading needed to improve.

Reading material and frequency

Reading material chosen by the students involved in the study varied between 3 main sources: novels (mainly selected from the school library), newspapers (tabloids such as The Sun and The Star) and gossip magazines (including Grazia and OK). Surprisingly, none of the students felt that they read internet web pages with any frequency. The vast majority obtained their reading material from the school library with only 1 having got their book from home, possibly suggesting most do not have many books at home.

When asked about how often they read, responses varied widely from *"20 minutes twice a day"* to *"only maybe 3 times per week"*. However, almost all of the students said that they read every day in school for between 20 – 30 minutes.

Effect of reading location

Six of the students said that they read at home at least 2 or 3 times a week. When asked whether they read alone or with someone responses were divided, with approximately half saying that they read with a parent who helped them with understanding and words they were struggling with. Those that read with their parents said they preferred this to reading alone as they appreciated the extra help. Two of the children who read alone at home explained that this was because their parents couldn't read well and were therefore not able to help, raising the possibility of illiteracy in the family.

When discussing preference for reading at home or at school approximately three quarters of the group felt that they preferred reading at school. A range of reasons were provided for this such as having a specific allocated reading time at school, a better range of books and being able to concentrate more. A general view emerged from this line of questioning that the academic context of the school environment and resources available made focusing on reading easier than it would be at home. Typical comments from students included:

"I like to read at school because it feels like a waste of time at home", "when you read at school you can get more help with it" and *"It's easier to remember the words at school. You can choose more books and I can concentrate better so I read more".*

Seven out of the 8 students explained that when they are reading with someone, whether with a parent or member of school staff, they were reading aloud. However, when reading alone they read silently.

Stress / Embarrassment

Students were questioned on what kind of reading they took part in at school and their preferences in this regard.

Over three-quarters of the group said that when they did read aloud in class they found it embarrassing, stressful or nerve-wracking because they were aware of their low ability compared to the other children. Regular comments alluded to this problem such as:

"I do read out loud but I don't like it, it's embarrassing and I prefer reading with just one person", "It's embarrassing reading in class because I don't want to make a mistake and everyone else can do it".

As a result of this most children expressed a preference for reading with just one other person (normally a class teacher or teaching assistant) when reading at school. Several students also felt that their comprehension of a text was improved when they were reading with another person as they less likely to make mistakes or get stuck on a word.

Views of 'support'

Three out of the 8 students reported having a dedicated TA to sit with them in classes and to help them with reading and spelling. A further 4 reported the teacher spending a lot of time with them throughout a class and 2 mentioned being part of an extra reading support group once a week at the beginning of the academic year which had stopped happening at the end of the autumn term 2011.

In most cases, the students interviewed felt that they did receive extra support for their reading at school. This feeling seemed to be affected by differing views on what constituted 'support'. Most children felt that if a teacher or TA sat with them in a literacy class and read with them, this constituted support whereas 3 felt that they were only getting extra support if they were taken out of class and worked with in a separate group or in a one-to-one context. One student mentioned that they were frequently offered help from their teacher in class but tended to turn it down, as it was embarrassing to have a teacher sat with him in class. He commented:

> *"I don't get any help in class at the moment because I don't want a teacher sat with me with my mates watching and that. It gets embarrassing".*

Despite all feeling that the help they were receiving or had received was useful, half the students commented that they needed more help than what they had received so far.

Reading strategies

A range of reading strategies were mentioned when the students were asked about how they go about tackling their reading, especially when they come to a word they are not familiar with. Four of the 8 students explained that if they come to a word they don't know they will simply skip it out with a typical response being *"I just look at a word and if I don't know it I miss it out"*. If this happened too often they would then simply give up on a text altogether. As an example of this, one boy was asked what he did when he couldn't read a word and said:

> *"I'll just leave the book and do something else".* Another *said "I just miss out words if I get stuck and then maybe eventually just can't carry on".*

Three of the students seemed to lack phonic decoding skills or any clear strategy for word reading and when asked how they tackle unknown words they often found it hard to answer and needed prompting.

However the remainder of students were able to describe methods they used to help them when they were reading. These did seem to be mainly phonic approaches and revolved around sounding out words and trying to blend together individual letters or groups of letters. For example one girl said:

> *"I break a word in half and then try and read it in sections".* Other explanations of reading strategies included: *""It helps with sounds and bits of words rather than whole words so then you can get the whole word", "I try to sound out the letters"* and *"I sound out the word but sometimes have to ask for help if I get stuck".*

Interestingly, only 2 students mentioned asking for help when they get stuck on a word. When asked about this as an option, many referred to how long they would have to wait for help, how often they needed help and the embarrassment of having to ask in the first place. Again, this provided reasons why the majority of the group preferred reading in a one-to-one context.

Responses to Toe By Toe

Responses to the Toe By Toe intervention were universally positive. Every student involved in the intervention felt that it had been either 'useful' or 'very useful' in helping with their reading. There was a strong sense among all the students that the intervention was fun, motivating and enjoyable and no apparent resentment or boredom was expressed. For these reasons all the students said they would like to carry on with the intervention as they recognised it was helping them with their reading and 4 said they would like to have it more often. When asked about their positivity towards the intervention, comments included:

> *"I'm getting much better, it's helping me with my reading and I don't mind doing it", "I've done it loads. It's helped me with my reading and writing and I like the writing-out activities...I would carry on with it"* and *"it's tricky but it is fun. I like reading the nonsense words".*

There was an appreciation among 4 of the students for the emphasis on phonics and the systematic approach evident throughout Toe By Toe. The multi-sensory activities were mentioned as good fun and a way of helping to improve spelling. The nonsense words added an element of fun for some as well as an appreciation this was helping them to sound out difficult or unfamiliar words.

There was a strong appreciation from the group for the opportunity to work on their reading out of class where there was less potential for embarrassment and more individual attention. Additionally, 3 children mentioned that they enjoyed doing a range of different activities to help their reading rather than simply working through a book in class. Thus, the over-riding sense from the students that had received Toe By Toe was that it was an entertaining, varied and most importantly *useful* intervention that was helping them with their reading that they would happily continue. These comments were passed to the school for their consideration.

What are the staff's views of the usefulness of Toe By Toe and do they feel the intervention has assisted their work?

Interviews with staff are presented according to the major themes emerging from the interviews, accompanied by indicative quotes. Six TAs and 2 SENCOs were interviewed, all of whom had been involved in co-ordinating or delivering the Toe By Toe programme. Themes and subthemes identified from the TA and SENCO interviews are outlined in Tables 10 and 11 below.

Table 10: All themes and subthemes generated from Research Question 3

Research Question	Themes	Subthemes
RQ 3. What are the staff's views of the usefulness of Toe By Toe and do they feel the intervention has assisted their work?	Assessment of reading	*Regular assessment, early intervention, importance of reading skills, monitoring*
	Reading policy	*Dedicated reading lessons, library use, TA support, differentiation, low support staff numbers*
	Support and inclusion	*Inclusion, support (in class), support (out of class) literacy support programmes, persistent difficulties, reading practice*
	Available interventions	*LEXIA, spelling workbooks, lack of funding*
	Toe By Toe – Positive	*Strict record keeping, visual progress markers, evidence of work, one-to-one, clear instructions, structured, professional development, improves reading skills, motivating*
	Toe By Toe - Negative	*Cost, logistical/timetable problems, keeping books safe, no comprehension focus*

Assessment of reading

All staff gave a clear account of the systems in place in each school to identify students that are struggling with their reading. Both schools had assessment processes in place for when the children start in Year 7 in order to notify teachers of those falling behind as soon as possible. These students should then be offered extra support though several noted that this was not always possible due to staff and/or timetabling restrictions. Both SENCOs interviewed felt that children who arrived at the school with low reading skills often struggled in all areas of the curriculum, highlighting how important reading ability is for academic attainment. The SENCOs were both

committed to the importance of early identification and intervention for this reason. The importance of reading skills across the curriculum was clear in comments such as:

> *"Often, you see, the teacher's hands are going to be tied if these children can't actually get to grips with what's on the board or in the books".*

Frustration around limited budget was typical of all those interviewed. Comments included:

> *"We could do everything for them if we had the time to do it but it's always a rush"* and *"inevitably we have to draw a line to say where extra support will be offered and where it won't".*

Reading policy

All students were expected to attend literacy classes everyday and these classes would almost always involve reading of some kind. Both schools provided at least one lesson per week that was dedicated specifically to reading and the analysis of text throughout Key Stage 3, though this was not felt to be the case in Key Stage 4. One SENCO explained this by saying:

> *"It's likely to happen less often, or in a less formal way beyond key stage 3 because, as you know, the expectation is that they can read independently by then".*

The support systems in place for those students struggling with their reading were similar in both schools. Each offered differentiation in literacy classes as a first step towards accommodating reading difficulties and operated a 'setting' system so that those falling behind could focus on "foundation skills". Those in the foundation sets are required to read in their literacy classes everyday for 15-30 minutes depending on the structure of the lesson. Within this setup, both schools had TAs available in the foundation literacy classes to support children with reading and writing if it was felt they needed it.

Support and inclusion

Outside class, the schools differed slightly on the additional support they offered to students with reading difficulties. Both SENCOs and 3 TAs stressed the importance of inclusion and the desire to keep children in class as much as possible, but also

acknowledged the need to remove children from class to deliver targeted interventions.

The SENCOs and 3 TAs mentioned that providing support for *older* children with reading difficulties was harder to do for a number of reasons, both academic and emotional. Children with serious reading difficulties in Year 9 or 10 were felt often to have become disillusioned with the process of trying to learn. In addition to this, 3 TAs mentioned that the older children often don't want additional support in class as it embarrasses them in front of their friends, for example one noted:

> *"You go over to help them but you can tell they don't want it and just say 'I'm fine thanks miss' or something like that".*

One SENCO pointed out that students with difficulties at such a late stage of their education are the ones likely to have the most persistent difficulties, saying:

> *"We do everything we can for them, but sometimes you'll see a lot of extra input bringing about only very slight progress or even none at all".*

It was felt that this makes it hard to provide interventions for these students that are likely to have an impact. There was a sense that extra guidance or intervention options for those children with the most persistent difficulties would therefore be welcomed.

Available interventions

With the exception of Toe By Toe, both schools had other literacy intervention schemes that they made use of to support children with literacy difficulties, though neither were making use of interventions that *specifically* targeted reading. One school had recently started using LEXIA, a computer based reading and spelling training programme (none of the students given Toe By Toe were on the LEXIA programme). While there was praise for LEXIA as the children enjoyed using it, there was also an acknowledgment that the intervention is largely automated with feedback provided by the computer while a TA simply supervises a session with a group of children and ensures they are using the software appropriately. There were some reservations about this with almost all the TAs interviewed feeling that some human interaction was important in any intervention programme. One TA said:

"With LEXIA they really get on with it themselves and you just keep an eye on them". Another felt that *"it's fine for them to use it (LEXIA) but I think they need something else as well. LEXIA on its own isn't enough".*

This was a view shared by the school SENCO who agreed that LEXIA could not be relied upon in isolation to boost reading skills. The SENCO had been in charge of purchasing LEXIA for use in the school and had done so on the basis of good reports from other local schools also using the programme.

In the other school, use was made of an intervention programme called "My Spelling Workbook" which aimed to improve handwriting and spelling. This was described by the SENCO as a *"tightly structured, multi-sensory"* approach that is delivered to the students in small groups by a TA. While there was a sense among the school TAs interviewed that this was a useful scheme, 2 mentioned that it was difficult to sustain the scheme regularly over a term due to a lack of staff.

Responses to Toe By Toe - Positive

There was a large amount of positivity towards Toe By Toe and the scheme was praised by TAs and SENCOs for a variety of reasons (at the time these interviews took place, none of the staff were aware of the results of the quantitative study). One SENCO described the scheme as *"absolutely brilliant"* and both SENCOs were committed to continue using the scheme in their schools into the next academic year purely on the basis of the responses from school staff and students using the scheme. Due to the strict record keeping that is intrinsic to the scheme there was a strong sense that it was easy for the school to show the work they had been doing to support particular students as well as any progress they had made. This was an important point for both SENCOs who both mentioned the need for records of work carried out to show not only to teachers and parents but also during OFSTED inspections. One commented:

"It (Toe By Toe) is quite good for showing what you've been doing and how effective it's been. When parents come asking what's being done or if you know you've got an OFSTED visit coming up, it's nice to know you've got those records to hand if you need them".

A positive element of the scheme mentioned by 6 out of the 7 TAs was the degree to which the students involved were perceived to enjoy the one-to-one support they received from their allocated TA, particularly in the school that had recently begun using LEXIA. One commented that

> *"Toe By Toe is more personal than some others, it has that one-to-one element the kids like"* another said: *"I do think one-to-one works better than LEXIA. The thing with LEXIA is that it doesn't give any human feedback".*

TAs felt that not only did the students respond well to the one-to-one support they were receiving, showing enthusiasm for the work, the TAs themselves were able to get an improved sense of the progress their students were making and the areas in which they were struggling. This enabled them to tailor their support appropriately and develop an in-depth knowledge of the abilities of their students.

Four of the 6 TAs and both SENCOs praised the scheme for being easy to follow and *"user friendly"*. Though several mentioned that the scheme can feel quite *"scary"* at first glance, they went on to say that once they had been involved with some training exercises and had a chance to use the scheme themselves for a couple of days, they became comfortable with it very quickly. A typical comment on this point was:

> *"Every page has detailed instructions. As long as you sit down and look at what's coming up you're fine. You get used to it".* Another TA responded by saying: *"it's really self explanatory you just need to plan a few pages ahead so you know exactly what you're doing".*

This ease of use seemed to give the programme an accessible feel meaning staff became comfortable with delivering it to students within the first few sessions. The 'structure' and 'gentle progression' of the scheme were both mentioned as reasons for this accessible feel.

Three TAs also mentioned the professional development that they had experienced as a result of being involved with the research. They felt that being involved in the training and subsequently getting the chance to use the scheme extensively had

provided them with a better understanding of teaching reading and improved their skill set for the future. One commented:

This was felt to be an important point by 1 SENCO who pointed out that often TAs in secondary school tend to know very little about phonics as it is not an approach that often gets used in secondary classes.

The structure and repetition in the programme was cited as a benefit by 4 TAs who felt that this made it easy to identify where students were getting stuck and where they were making progress. There was an appreciation that this also made the planning and delivery of each session easy as both students and TAs knew what to expect and the process was always familiar. This familiarity and the repetition in the scheme seemed to boost the confidence of some children, especially those with the most severe difficulties. One TA explained:

> *"If they know they've seen it before and they've done it right once already, they're more willing to give it a go. They start to realise they can sound it out".*

Responses to Toe By Toe - Negative

While the responses to Toe By Toe from school staff were largely positive, there were also some negative elements of the scheme discussed. The main criticism mentioned by almost all respondents centred on the logistical difficulties of implementing the scheme. Finding times to take students out of class and places in the school to do the work were raised as problems by 4 TAs and 1 SENCO. Despite the praise for the one-to-one nature of the scheme, this was also felt to be a difficulty as it placed such high demands on the SEN staff timetable. This meant it was sometimes hard for TAs to find good times during the day to deliver the intervention. 1 TA was concerned that:

> *"The children can end up missing the same lesson over and over if you're not careful"* and another mentioned that *"finding a time every day or nearly every day to take them out and do the work is hard".*

Linked to this difficulty is the requirement of the scheme for a 24 hour gap between each session. Several TAs explained that this made it hard to timetable sessions for some children because if they had their Toe By Toe session in the *afternoon* on one day, they then could not have their next session in the *morning* the following day.

Some felt this was overly pedantic and caused unnecessary timetabling difficulty on top of an already complicated timetable. To address these difficulties, both SEN departments developed a timetable for Toe By Toe during the first weeks of the intervention. One SENCO noted that:

> *"Really to implement something like this you need to sit down and work out how you're going to fit in around the timetable, once we got that done it was much easier".*

It was therefore felt important by almost all respondents that to implement the scheme smoothly, a timetable for delivering the scheme should be setup at the outset to avoid frustration or confusion.

There was also some concern about the cost of the scheme in a time of very limited budget and this linked to another concern around the requirement that all records of progress and work completed are kept in each student's book. This meant that TAs had to take responsibility for each book and ensure they were locked away between sessions to keep them safe. The monetary and progress-tracking value of each student's book meant allowing Toe By Toe books to be sent home was not considered an option. One TA summed up this view saying:

> *"Some of these kids aren't the most organised and if you send a book home, you might never see it again. Then what?"*

One SENCO and 2 TAs also mentioned that Toe By Toe does nothing to improve children's comprehension skills. In the case of some students on the scheme this was not felt to be an issue as their comprehension skills were within an average range, but others with very low comprehension skills had difficulties that the scheme was not able to target. It was therefore felt that these students would need to receive a different intervention either after they had completed Toe By Toe or running alongside it, to properly tackle their difficulties. Therefore care should be taken that any member of staff using Toe By Toe is aware of both the precise skills it targets and those skills it *cannot* be expected to improve.

What are the major barriers to implementing new interventions in secondary schools and how do school staff make use of current research on reading interventions?

Table 11: All themes and subthemes generated from Research Question 4

Research Question	Theme	Subtheme
RQ 4. What are the major barriers to implementing new interventions in secondary schools and how do staff make use of current research in reading interventions?	Budget/Staff	*Low budget, lack of support staff, cost of books, cost of training*
	Logistics/Timetable	*Inflexible timetable, lack of space/rooms, wasted time, missing lessons*
	Staff Training	*Plan in advance, training reviews/top-ups, time commitment, cost*
	Selecting interventions	*Word of mouth, opportunism, availability, lack of choice*

Budget/Staff

All TAs and SENCOs interviewed mentioned either budgets or staff numbers as the primary barrier to any additional support provided. Indeed, many also noted that these 2 things are inextricably linked and are to all intents and purposes the same thing. The price of an intervention and the need for some interventions to be delivered on a one-to-one basis was therefore a primary concern. One SENCO commented:

> *"Those Toe By Toe books cost £25 each! By the time we get to the end of term we'll have spent over £350 on them which for us is a lot of money…we need to be sure it's going to work if we're spending that kind of money".*

As a result both SENCOs felt that they would need to feel sure about the value of a scheme like Toe By Toe that requires one-to-one delivery as it requires a large amount of staff time relative to other schemes. Comments on this point included:

> *"If you bear in mind each child has about an hour of Toe By Toe a week and you multiply that by at least 10 or maybe more, that's a lot of TA time for that one child".*

Logistics/Timetable

Aside from budget, both SENCOs and 4 TAs also mentioned logistics as a difficulty that needs to be addressed when using any new intervention. The complexity of the SEN staff timetable was noted to be no less complicated than the student's lesson timetables and this made it difficult to find suitable times for children to be taken out of class for any intervention. This was coupled with the need to avoid taking students out of class at the same time on the same day each week as this would result in them repeatedly missing the same lessons. Both schools managed to solve this problem to a degree by timetabling the Toe By Toe sessions during tutorial time to avoid the children missing lessons but 2 people commented that this is not always possible due to staff timetables. As such very careful planning would be needed to construct a plausible timetable. Comments about Toe By Toe in this context included:

> *"You've got to find 15 minutes almost every day to get it done and if you can't do it in tutorial time or you're not available then, it can get very difficult"* and *"If someone's off sick and people end up having to cover for them, you end up scrabbling around trying to find another time to do it, because you can only do it (Toe By Toe) once a day so you can't always catch up".*

Staff training

Both SENCOs mentioned the importance of ensuring staff are adequately trained in the use of any new intervention programme, and the associated time commitments and costs to the school. When discussing the staff training for Toe By Toe, one TA mentioned that:

> *"I was fine for the first few weeks but after that it gets a bit more complicated and I had to check what I was doing with some of the other TAs. It might have been good to have an extra training session part way through the term".*

Another felt it was important for anyone delivering the programme to read a few pages ahead in the Toe By Toe book before each session with a child, to ensure they were clear on the activities they were going to be doing and the instructions they would need to provide the child. Thus it may be useful in the future for training to be delivered midway through the intervention as well as before it starts to give staff the

opportunity to discuss any concerns or questions as they emerge and adapt to the increasing complexity of the programme.

Selecting interventions

There was no mention of research evidence when staff were questioned on why certain schemes had been chosen. In both schools there was a sense that any intervention schemes used were either recommended from elsewhere or had been arrived at opportunistically. Typical comments included:

> *"I know LEXIA has been successful at xxxxx and xxxxx schools and we were looking for something that could be delivered to as many children as possible given limited numbers of staff"* and *"we had the books left over from a few years ago and this was obviously a good time to give it another go"*.

In one school the SENCO mentioned that literacy schemes are decided on and purchased by the English department with no consultation with the SEN team, explaining that:

> *"The English department make a decision about which schemes to choose, they just give them to us"*.

Both SENCOs acknowledged that this was a potential problem and expressed a need for guidance or support in this area as they were not clear on where they should look for authoritative evidence-based advice when selecting reading interventions for students with severe reading difficulties.

Chapter 5: Discussion

The aims of the present study were to explore the efficacy of an evidence-based reading intervention programme (Toe By Toe) at a secondary school level, to explore student and staff responses to the intervention and to explore potential barriers to implementation. The results from both the qualitative and quantitative aspects of the research indicate that Toe By Toe can be an effective means of improving the phonic decoding accuracy and fluency of students with severe word reading difficulties when it is delivered in a systematic manner over a period of 10 weeks. Significant gains were also observed for word reading accuracy but not word reading fluency. Gains were maintained in each case when followed-up 6 months later. No effects of the intervention were observed to impact sight word reading fluency, passage reading comprehension or passage reading fluency skills at test.

Furthermore, both students and teaching assistants involved in the study felt that the intervention had a range of important strengths and benefits that make it a useful intervention in a school setting. Unsurprisingly though, there are also limitations to the range of reading skills that Toe By Toe can help to improve and there were also a number of students that gained very little (if anything at all) from the intervention. As well as this there were some criticisms and limitations of the intervention raised by school staff relating to the logistical difficulties of incorporating it into a school day and the cost in terms of staff time and school budget.

These findings are discussed in further detail in this section which will first consider the results from the Toe By Toe intervention (the quantitative study) and then go on to consider findings from the student and teaching assistant interviews about the usefulness of the scheme (the qualitative findings). This will then be followed by some consideration of the implications of the results, both in terms of school policy and EP practice.

Consideration of quantitative findings: The efficacy of the Toe By Toe intervention programme

The primary aim of Toe By Toe is to target word recognition and decoding skills, thereby improving word reading skills and reading fluency. Broadly speaking, the intervention achieved what it intended to achieve and there are several areas of the results that are worthy of further discussion and exploration.

Group results

The results show that the most significant improvements were found in the primary skills targeted by Toe By Toe (i.e. word recognition and phonic decoding accuracy). Fluency gains were limited to phonic decoding fluency, as measured by the TOWRE. Importantly, it seems most of the gains were made in areas that tested the student's phonic knowledge and this is no surprise given the emphasis on phonics throughout the Toe By Toe scheme. With this in mind it seems likely that the gains also seen in word recognition accuracy could be attributed to an improvement in the student's ability to decode the phonically regular words included in the test that measured this ability (GL assessment, 2007). However, the test used in this study does not allow a distinction to be made between phonically regular and phonically irregular word reading skill so it was not possible to investigate this theory further.

While improvements were seen in the student's phonic decoding and word recognition ability, the effect of the intervention is clearly fading away as the measures move further away from the core skills targeted by Toe By Toe (e.g. passage reading comprehension). These secondary measures were taken in order to detect any potential gains in these areas as a result of the intervention but the effect sizes found cannot be regarded as useful or educationally significant (see 'effect sizes' p.87 for further discussion).

Results from this study are consistent with findings reported in other evaluations of phonological based intervention studies for similar age groups that aim to improve word reading skills and/or phonic knowledge. Torgesen (2005) analysed 15 recent studies and found that growth rates for phonemic decoding skills are consistently better than they are for reading comprehension. This pattern of results can be seen in the present study in which moderate gains were found for skills dependent upon

phonic knowledge such as phonic decoding accuracy and fluency while ability gains in comprehension and passage reading fluency (reading aloud) were much harder to achieve. When the group results for standard score ratio gains in the present study (shown in Table 7) are compared to the review of reading interventions by Torgesen (2005) the results are broadly similar. Torgesen finds phonic decoding standard score gains of between 0.48 and 0.18 per hour across 15 different studies using a range of interventions.

Individual response rates

It is worth noting the percentage of participants that were able to move from a 'severe' word reading difficulty to a 'below average' or 'average' level of ability between baseline and test on the measure of word reading accuracy. Table 5 shows that at baseline 93% of the sample had a 'severe' word reading difficulty. After 10 weeks of intervention this number had dropped to only 75%. If the rates of progress observed are extrapolated and it is assumed the same rate of progress would be maintained by the group for a second term (i.e. for another 10 weeks) the number could drop further so that only 60% of the sample would have a 'severe' difficulty. A similar pattern can be seen in the phonic decoding fluency results (Table 6). The number of students with 'poor' ability in this area ('poor' is the lowest categorisation the test manual provides) dropped from 71% at pre-test to 57% at post-test. Again, if this rate of progress is extrapolated for another 10 weeks this number may be expected to fall further from 57% to only 46%. On the phonic decoding accuracy test (Table 4) 32% of participants had an 'extremely low' level of ability at baseline, this number had dropped to 25% at test. If progress was maintained for another 10 weeks this percentage would fall to 15%.

Care must be taken with these calculations though as it cannot be assumed further Toe By Toe training will maintain the same rates of progress for all students. For example Hatcher et al (2006) found in a RCT of a 20 week phonic and reading intervention that there was evidence of diminishing returns from the intervention after the first 10 weeks of intervention. Therefore some students may need some other form of intervention to ensure they continue to make progress.

Delayed post-test results: Maintenance of gains

There is some debate as to how much time should be allowed to pass before carrying out delayed post-test assessments following a reading intervention. Recent studies in this area have typically carried out follow-ups between 5-12 months after intervention (see Snowling & Hulme, 2011 for review). This guidance led to the decision to carry out a 6-month delayed post-test on the students involved in the Toe By Toe intervention. The delayed post-test results show that there was some wash-out of immediate gains made during the term of intervention but that this wash-out was relatively low and scores were still higher than they were at baseline. This is to be expected and a similar pattern can be seen in a range of studies of this nature (Whitely, Smith & Connors, 2007). Despite this, the delayed post-test results do indicate that on-going intervention and support will be required for some children following a Toe By Toe intervention to ensure any gains are maintained and to allow learning to be consolidated. Without this support there is a risk that some children could eventually lose any gains achieved.

Effect sizes

As well as exploring the statistical significance of the results, it is also important to consider the effect sizes obtained from the intervention to better understand the 'real world' significance of the results rather than considering them purely in statistical terms.

The Wilkinson Task Force on Statistical Inference (1999) argues that effect sizes should routinely be used and interpreted in addition to the use of p values in null hypothesis significance testing. However, Rosnow & Rosenthal (2003) have noted that in the social sciences effect sizes can often be very small and this can lead to difficulties in interpretation. As such there is no consensus on what magnitude of effect size is required in order to be considered relevant or practically significant and this decision therefore very much depends on the nature of the intervention. In an attempt to offer some guidance in this area Ferguson (2009) draws on recommendations by Cohen (1992) and reviews by Franzblau (1958) and Lipsey (1998) to arrive at recommended effect size interpretations for social science studies, while acknowledging that effect size interpretation should always be cautious, context specific and aware of potential real-world impact of effects. Based on this (and using eta^2 as a measure), Ferguson recommends an effect size of 0.04 as the minimum for a 'practically significant' effect.

He goes on to suggest that a 'moderate effect' could be regarded as 0.25 and a 'strong effect' as 0.64.

Using these recommendations the effect sizes in the present study for phonic decoding accuracy and word recognition accuracy both fall between a 'moderate' to a 'strong' effect size. The effect size of 0.21 for phonic decoding fluency falls just below a 'moderate' effect size. Of the remaining tests that did not reach a p-value of 0.05, passage reading fluency reached a 'minimum practically significant' effect size but in the present study this result would have to be viewed as very small and unlikely to be educationally significant.

Word recognition processes – phonic decoding accuracy and fluency

Given the largest improvements in reading ability seem to have stemmed from an improvement in phonic knowledge and decoding skills, it is worth considering the value this ability has in enabling the acquisition of fluent, sight word reading skills and comprehension of text - the process of becoming a skilled reader. As decoding becomes more efficient and confident, readers are able to read text more fluently and with greater speed. More common words can be committed to memory and this enables them to be read by sight (see above 'dual-route model of reading') removing the need for decoding altogether for many words and increasing fluency further. Difficulties with decoding and word level reading become more of a problem as children progress further through school and these problems may result in slow and effortful reading of text and poor comprehension as well as lower motivation and disillusionment (Snow, Burns, & Griffin, 1998).

Null findings: comprehension, sight word reading fluency and passage reading fluency

This discussion leads to a consideration of the null findings in the present study. Neither sight word reading fluency, passage reading fluency or comprehension skills showed any significant improvement as a result of the Toe By Toe intervention. As comprehension of text is tied so closely to decoding skills as outlined in the Scarborough (2002) model (see Literature Review), comprehension could be expected to improve with an improvement in decoding ability. This raises the question of why,

when decoding skills were found to improve, did comprehension not rise accordingly? There are a number of possible explanations for this.

Given the complexities involved in reading comprehension and the need to combine decoding and word recognition with vocabulary skills, semantics and grammar it seems likely that decoding would have to improve considerably in order to have an appreciable effect on reading comprehension and also that the improvement in comprehension would follow some distance behind the improvement in decoding. As the intervention programme in this study ran only for 10 weeks, very little time was provided to allow this process to happen. In support of this view, similar results to this have been found in a range of other studies which show that during an intensive reading intervention, decoding skills increase at a much higher rate than comprehension skills (Torgesen, 2005). Also, in order to properly target comprehension skills, it would have been necessary to teach vocabulary as part of the intervention programme (Muter, Hulme, Snowling & Stevenson, 2004; Bowey, 2005) but vocabulary training is not a part of Toe By Toe.

Similarly, no significant effects were found for sight word reading or passage reading fluency. It is interesting that phonic decoding fluency improved when sight word reading fluency did not. It may be that this is because the sight word reading fluency test (TOWRE, 1999) includes some irregular words which cannot be read with phonics and therefore improvements in phonic knowledge will not help with fluently reading these words. As improvements in fluency were limited only to phonic decoding it is unsurprising that passage reading fluency was not seen to improve as this is a more demanding, high-level skill. Despite the lack of improvement on these tests, there is the possibility that as phonic knowledge and word reading accuracy improves, this increases the potential for improvements in sight word reading fluency, passage reading fluency and comprehension.

Consideration of qualitative findings: Staff and student views of Toe By Toe and barriers to implementation

The interviews with students and staff yielded a number of relevant findings about the usefulness and usability of Toe By Toe in a school context as well as providing information about the students involved in the study. This section will provide a summary of contextual information about the students as well as the perceptions that were elicited about the Toe By Toe intervention programme from staff and students. This will be followed by a summary of the perceived barriers that exist to implementing new reading interventions in schools in order to generate new understandings and add to the knowledge base in this area.

Student context

Low self-esteem and low confidence was very common among the students involved and this is unsurprising given the level of reading difficulty most of them were experiencing. These feelings are common among students with reading difficulties and are likely to have subsequent effects on other areas of their academic work and school life (Riddick, Farmer & Sterling, 1997; Snowling, Muter & Carroll, 2007). These negative feelings about themselves when they were required to read generated consequent negative feelings about the *process* of reading, meaning many of them felt reading was boring and/or frustrating. This had a clear impact on their attitude to reading, potentially making it difficult for teaching staff to engage them in work targeting their reading skills. As a result of this attitude, many of the students read as little as possible meaning they did little or no reading at all while they were at home. A small number of students explained that their parents were not able to help them with their reading, as their parents were not able to read well. Given that parental illiteracy is a known risk factor for reading difficulties (Vellutino & Fletcher, 2007) this was to be expected.

Of some concern is the finding that none of the students interviewed felt that they read internet webpages independently. This is not only surprising considering the availability of the internet to students at both schools, but also a potential barrier to future independence and employment given the centrality of the internet in so many aspects of modern life. This finding is all the more revealing in the light of research from the Office for National Statistics (2011) that revealed the largest proportion of internet users by age in England are teens and young adults (up to the age of 24).

Among those questioned in this research, 98.8% were internet users (representing 7.19 million people).

It was interesting to note that only one of the students was reading a book they had brought from home at the time of the interview. All the others had obtained theirs from the school library. There was no opportunity during the interview process to explore this further but this could potentially indicate a lack of books in the home, which is also a risk factor for poor reading skills and academic success (Levitt & Dubner, 2005).

In the light of discussion above regarding the importance of reading fluency for comprehension (Wagner, 2008) it is significant that many of the students interviewed had very minimal strategies (or none at all) for reading unfamiliar words. Typical responses indicated that when faced with unfamiliar words, the students would miss them out entirely with obvious serious consequences for comprehension of a text. Even more concerning is the assertion from several students that if they are faced with a word they find very difficult, they may give up on reading a text altogether. This situation creates a vicious circle of failure whereby a student faced with a word they can't read gives up and therefore misses the opportunity to practice, learn and achieve success. This then creates future failure as their ability to read does not improve and they experience the low morale and disillusionment that this entails. The need for targeted intervention in these cases is therefore very clear. Snowling & Hulme (2011) comment on this, noting that:

> "the downward spiral from poor reading will be poor reading fluency at the least and often in addition, poor educational attainment and low self-esteem" p.18

Many students expressed reluctance to ask for help when they got stuck reading a word. This reluctance was always linked to either embarrassment at having to ask for help or frustration at the frequency they needed help and the amount of time they had to wait for help to arrive. Clearly, class teachers cannot spend entire lessons sitting with individual children helping them to read, resulting in the exclusion of the rest of the class. Therefore what is needed is support focussed specifically on enabling these students to recognise or decode words themselves and experience a level of

independent success. This idea is supported by the student's responses, many of whom felt that any additional support would be most welcome and useful if it was offered out of class as it would increase the amount of teaching time and support they received as well as avoiding the embarrassment of having to constantly ask for help in class.

Staff and student views of Toe By Toe

A wide range of views were obtained from both students and staff about the usefulness and usability of Toe By Toe. There was a large amount of praise and positive comments about the intervention programme from both groups as well as some criticism.

Praise was more forthcoming from the students than from staff. Students had very few negative comments about the programme and many were very appreciative of the extra one-to-one support out of class. Surprisingly given the repetitive nature of the programme, students did not appear to find it boring or monotonous or if they did, these feelings were outweighed by the positive feelings invoked by improvements they saw in their own reading ability. This positivity was also fuelled by the chance to improve their reading using a method different to simply reading a book, which was the normal way in which all of the students practiced their reading. Thus a sense of novelty, or of a programme that was especially for them, also seemed important. There was also an awareness of how Toe By Toe aimed to improve their phonic awareness and decoding skills, even if this wasn't always overtly stated, but comments related to learning about word 'sounds' and linking 'bits of words' indicate an increased awareness of how to use decoding to read unfamiliar words and the processes involved in this.

Staff were also complimentary about the intervention. Feelings regarding the success of the scheme extended to the degree that both SENCOs felt committed to continuing the use of Toe By Toe into the next academic year both with students that had been using the programme in the present study and with other students they felt may benefit from it. Other positive comments related to the logical progression of the scheme as well as well as the tight record keeping it requires. This was seen to fit well into a secondary school environment where there is a constant time pressure on

lesson planning as well as being able to provide evidence for the work carried out and student progress. Being provided with a scheme where the planning was essentially done for them and progress recorded daily was seen as an important time saving benefit for staff. In addition many staff felt that learning how to use a reading improvement scheme was a useful professional development for them and the process of using it enabled them to learn more about the teaching of reading, improving their skill set.

Despite this generally positive response, staff also had some reservations and negative comments. The most common of these was the logistical difficulties in implementing the scheme in terms of the strain on teaching resources. The one-to-one nature of the scheme meant that providing the necessary number of sessions to all the students required the construction of a timetable which often became quite complicated if children were absent or could not attend a session for some reason. Unsurprisingly, there was also some concern over the cost of the scheme which again was exacerbated by its one-to-one nature, requiring every child to have their own book. It would be important for any school planning on using Toe By Toe to budget in advance and be aware of how many books they are likely to need in order to mitigate against this issue. Finally, there was an awareness among some staff that Toe By Toe does little or nothing to improve comprehension and therefore was limited in the extent to which it could improve the student's reading. While this appears to be true (as borne out by the quantitative results) it should be acknowledged that improvements in phonic decoding can potentially lead to improved comprehension in the long term, as discussed above (Wagner, 2008).

Interestingly, some of the positive comments about Toe By Toe also had negative consequences. The main example of this was the strong sense of the importance and value of a one-to-one intervention alongside the concern of how much staff time and SEN budget is taken up by an intervention of this kind. Similarly, the close tracking and recording required for each individual child was felt to be a useful benefit in terms of data collection for the school but was also a concern as a misplaced book would represent a major problem and the loss of valuable information. In cases like this, staff agreed that a pragmatic approach is required, acknowledging that an intensive one-to-

one intervention will inevitably make large demands on staff time and tight record keeping means records need to be kept safe.

There is also the issue of inclusion to consider which highlighted a key difference between staff and students. While staff are anxious to be inclusive and keep students in class as much as possible, it is clear from the student interviews that the students would much rather have any reading support sessions offered to them out of class for a number of reasons, chief of which is the humiliation of being singled out in front of their peers. The balance here between inclusive practice and acknowledging the wishes of students with learning needs is a delicate one. However, if by being inclusive the end result is a student who feels alienated, embarrassed and unmotivated the value of the inclusive practice must be called into question. Consequently it would seem that allowing the students to have these intervention sessions out of class would increase the chances of the intervention being successful by ensuring that the students were motivated and comfortable during the sessions. This must be the most important consideration and under these circumstances removing a child from a class for 15-20 minutes a day does not seem un-inclusive. Norwich (2005) supports this view when discussing 'dyslexia friendly' schools, arguing that education systems need to become more flexible in order to respond to a greater diversity of need in their students.

Barriers to implementation and the use of TAs

Upon consideration of the staff comments it is perhaps to be expected that one of the main barriers to new interventions in schools was felt to be school budget to pay for the materials and the staff time required for any new intervention. There are also the attendant difficulties of training staff to use the intervention (at additional cost) and finding suitable times within the busy school timetable to deliver it while ensuring students do not continually miss the same lessons every week. It emerged from the interviews that neither school was making use of current research on reading interventions and the interventions they had were chosen opportunistically or by word of mouth. Certainly these are major challenges but the present study demonstrates that with clear advice and careful planning of timetables, budgets and staff time they can be overcome.

It is clear from working with the schools to implement the intervention that without the full support of the school SENCOs and the continued effort from the TAs it would have been impossible for the present study to have been carried out at all. Support from senior members of staff as well as a clear understanding of the intervention being used by all those involved is therefore essential to enable its future success. This not only ensures that the intervention is carried out correctly, but also creates a group vision or purpose that all involved understand and which can be led by senior staff. Additionally, a clear awareness of the potential benefits of a chosen scheme is extremely important at a senior level in order to access funding and facilitate the logistical planning that may be required for the intervention to run smoothly. This co-operation at a senior level would also be important to aid communication between departments. As noted in the staff interviews, in one school the English department selected literacy interventions without prior consultation with the SEN department. This seems counterproductive as the SEN department can therefore find themselves in a situation where they do not have appropriate resources to support the students they work with. It is therefore vital that senior staff work together *across departments* to prevent this situation occurring and making the best use of the budgets and expertise available in the school.

An awareness of all of these issues is necessary in order to promote change efficacy in a school environment and it is important that they should be communicated to all those involved in a new intervention at the very start. This view is supported by Weiner (2009) who, when discussing organisational readiness for change, argues that:

> "when organisational members share a common favourable assessment of task demands, resource availability and situational factors, they share a sense of confidence that they collectively can implement an organisational change. In other words, change efficacy is high" p.4

The importance of keeping staff well informed and motivated when implementing a new intervention is also noted by Forman et al (2009) who used a qualitative study to examine facilitators to successful interventions in school settings. They found that most respondents (58%) felt teacher support was the most important factor as well as support from other administrators (58%) and good staff training (50%).

Therefore, in order to ensure change efficacy is as high as possible when implementing an intervention such as Toe By Toe it will be important to explain to senior staff the benefits of the scheme, the organisational demands, required budget and the students it should be targeted at as a first step. Once this has been done and the intervention agreed, training of staff can commence so that they have a clear awareness of what will be required of them, what they are trying to achieve and the difficulties they are likely to face. With this information readily to hand and potential barriers addressed at the outset, the intervention will stand the best possible chance of success.

With regard to the concerns outlined in the Literature Review by Blatchford et al. (2009b) about the deployment of TAs and their pedagogical role with SEN children, the present study shows encouraging results when recommendations based on the DISS study are taken into consideration. The TAs involved in the implementation of Toe By Toe in the present study were given appropriate training in the use of a clearly structured, well planned intervention delivered on a one-to-one basis. They were supported by their school and provided additional training opportunities throughout the intervention. In this context these TAs were able to help pupils with severe reading difficulties make progress in their reading by providing them with individual support carefully targeted to their needs. This support was not only valued and felt to be useful by the children but was also felt to be an important professional development for the TAs. This provides useful evidence to support the arguments of Wester et al. (2010) that the deployment of TAs to support children with SEN can be successful as long as this deployment is based on evidence-based advice and carefully implemented based on the recommendations above.

Summary of responses

Responses to the qualitative research questions can be summarised as follows:

Views on the usefulness of Toe By Toe – positives:

- Students found the scheme to useful and enjoyed seeing the records of their progress between one session and the next.
- Students found the scheme to be engaging and showed a desire to continue using it.

- Positivity in the students from additional reading support and seeing their reading improve.
- One-to-one nature of the support allowing an intervention closely tailored to the needs of the student.
- Simplicity of the scheme making it clear and easy for staff to follow.
- Professional development for the staff involved.
- Clearly structured with a gentle progression.
- Close recording of progress provides motivation for the students and monitoring/assessment data for the school.

Views on the usefulness of Toe By Toe - negatives

- High demands on staff time due to its one-to-one nature.
- Requires the construction of a timetable to manage staff time and ensure the right number of sessions are delivered to each child.
- The price of each Toe By Toe book.
- The need for each child to have their own Toe By Toe book.
- No focus on comprehension.

Barriers to implementing new interventions and use of current research on reading interventions:

- Budgetary concerns regarding the cost of a new scheme.
- Availability and number of staff.
- Logistical difficulties regarding the inflexibility of the school timetable and the need to avoid students consistently missing the same lessons.
- Finding available space to carry out any intervention.
- The need for additional staff training.
- Weak communication across school departments or between members of staff.
- Interventions selected opportunistically or by word of mouth.

Chapter 6: Summary

The previous chapter outlines the efficacy of Toe By Toe in a secondary school context among students with severe word reading difficulties. This information is supplemented by staff and student views on the intervention and consideration of potential barriers to implementing the intervention in the future. With the above discussion in mind, it is useful now to consider the limitations of this study as well as its implications and contribution to professional EP practice and in schools.

Limitations of study

Despite the areas of success found during the present study it is important to acknowledge its limitations and possible flaws. Core among these is the possibility of a Hawthorne effect among the participants. The Hawthorne effect refers to the phenomena whereby an intervention can bring about improved results purely because the participants involved know they are being observed or because of a positive interaction with the tester/s, rather than as a result of the intervention itself. The term has been used as early as the 1950s (see French, J, 1950) to describe this phenomenon. In the context of the present study, it is possible that the improvements in ability shown in the quantitative results came about as a result of the students feeling 'special' or making a concerted effort in response to the intervention, that they would not otherwise have made.

However, the extent to which the Hawthorne effect can be attributed to the results seems limited. In a review of educational research, Clark & Sugrue (1991) found that while uncontrolled novelty effects can account for up to 50% of the standard deviation in scores in the first 4 weeks of an intervention, this effect decays after this time and accounts for less than 1% of variance beyond 8 weeks. As the Toe By Toe intervention ran for 10 weeks, the students would need to have made extremely high rates of progress in the first month of the intervention to have achieved their overall gains on the reading tests. There was no evidence of this when interviewing the students or TAs but it should nevertheless be acknowledged that this effect may be partially responsible for improvements in results between baseline and test.

The length of time the intervention ran for could also be viewed as a limiting factor. Both groups of students (Test and WCG) received Toe By Toe for one full term each. Though obviously different students progressed through the scheme at different speeds, this was not enough time for any of the students to complete all activities in the Toe By Toe manual. As such, the present study cannot confirm that rates of progress would be maintained throughout the length of the programme when used in its entirety.

Some consideration should also be given to the educational significance of the results obtained here. Even in the light of discussion above regarding effect sizes and their corresponding importance in the real world it could be argued that the gains achieved by the use of Toe By Toe in the present study are unlikely to bring about a large effect in a classroom context. The reading tests that showed a significantly improved result between baseline and test (Word Reading Accuracy, Phonic Decoding Accuracy and Phonic Decoding Fluency) achieved group average standard score gains of between 5 and 7 for the Test group. While these results are pleasing they may not bring about large improvements in reading ability outside of a test situation, in a real-world context. However, if the results are extrapolated and it is assumed that these rates of progress could be maintained across another term by continuing the intervention then gains of 10-14 standard score points may be achieved across two terms of the intervention (or 15-21 standard score points across a full academic year). Gains of this magnitude would be much more likely to bring about a real impact in the classroom. Consequently, it would be sensible to view Toe By Toe as an intervention that should be run for at least 2 terms but preferably a year in order to give students the best chance of a positive and useful outcome.

It may also have been useful to gather information on the phonological processing skills of the students. This would have enabled analysis of how these cognitive abilities that underlie dyslexia had been impacted by the intervention and provided data on the cognitive profiles of non-responders. However it was felt that as long as the intervention was felt to be 'useful' and the data gathered suggested it fitted with student's needs and could have some impact in practice, data on cognitive scores were less relevant. These pragmatic ideas of 'usefulness' and 'fitting with needs' are advocated by Gergen (1999).

Implications for schools

The present study provides evidence for a reading intervention programme schools can use to improve the phonic decoding and word reading abilities of students who have yet to fully develop these skills. The scheme has been shown to be effective in improving the targeted component skills of reading ability and this paves the way for sight word reading accuracy and fluency to continue to develop, although additional targeted support to acquire orthographic knowledge will be essential to allow this to happen. While these skills can and should lead to improved comprehension of text it is important that any school staff using Toe By Toe are aware that it does not directly tackle comprehension skills and should therefore not be used to target this area of need. It also important to note that the intervention used in the present study made use of Toe By Toe with accompanying reading instruction provided daily in literacy classes. Therefore Toe By Toe cannot, on the basis of this research, be expected to bring about improvements in reading on its own without reading instruction occurring in parallel.

As well as being aware of its limitations it is also important for any school intending to use Toe By Toe to be made aware of the importance of the length of intervention (ideally a minimum of 2 terms) and also the need for follow-up work to develop orthographic knowledge and opportunities for consolidation of learning for students after the intervention ends. Without this there is a risk that any gains will be lost. Monitoring will be important to prevent this from happening and ensuring progress is continuing. Duff (2011) comments on this noting that it would be advisable for monitoring of a student to continue for months if not years after the end of an intervention. It follows from this that any staff involved in a Toe By Toe intervention should be made aware that progress in one area of a student's reading ability (e.g. phonic decoding) does not necessarily mean that they have achieved a 'satisfactory' reading level and can therefore stop receiving targeted intervention. This can only be decided by assessment of the full range of component reading skills and subsequent provision of the necessary interventions to target areas of weakness (of which Toe By Toe represents 1 option).

Having made a decision to use Toe By Toe, schools also need to be made aware of the demands the scheme will place on the school timetable, on staff time and on SEN or

English department budgets. Clearly this will be less of an issue if the scheme is only to be used with 1 or 2 children, but if groups of approximately 4 or more are to use the scheme at any one time, careful planning will be required. It would be important for staff timetables to be constructed and for budgets to be agreed with senior management in advance in order to ensure the necessary resources are available throughout the intervention. Thorough staff training prior to intervention would also be necessary and staff should be encouraged to read ahead in the Toe By Toe manual and discuss the activities to be carried out with each other before administering them to students to ensure the scheme is being followed consistently and correctly.

For schools concerned about the financial and timetabling implications of using a one-to-one intervention like Toe By Toe it is perhaps worth focusing on the economies and benefits of using TAs to deliver it to students. There has been a marked increased in the numbers of TAs in schools to support children with SEN in recent years (Blatchford et al, 2009a/b) and this issue has attracted some debate as to whether it is appropriate for these less qualified staff to be working with children that are the lowest attaining. The results presented here indicate that with appropriate training and on-going support, TAs can deliver Toe By Toe effectively and bring about positive results in children experiencing severe reading difficulties. This view on the benefits of using TAs in this way is supported in recent evidence-based reviews for reading interventions (see Albors et al, 2009; Snowling & Hulme, 2011). Using TAs to deliver Toe By Toe makes excellent use of a valuable resource, providing tutoring and support to low attaining students that they would not otherwise receive. This not only improves the skills of the TAs but also maximises their potential in the school environment.

Implications for EP practice

The evidence presented above indicates that training in phonic decoding and word recognition can bring about improvements in a range of skills important for reading. It appears that this form of intervention can be effective even if it occurs significantly after initial reading training has occurred, given the age of the students involved.

As discussed in the literature review and noted by Snowling & Hulme (2011), there is:

> "a dearth of evidence-based interventions in education and we still have a paucity of knowledge of 'what works' and for whom" p.4

More specifically, there is limited evidence from rigorous controlled research trials evaluating what works beyond the primary school years and the early stages of learning to read (Brooks, 2013; Rose, 2009). The present study takes a step towards addressing this issue and provides schools with evidence for a targeted reading intervention that could be used as part of a wave 3 intervention to boost the reading skills of struggling students.

The hope is that by providing schools with this information the downward spiral that could occur from poor word reading to poor reading fluency and then possibly to low self-esteem and low educational achievement (Snowling & Hulme, 2011), could be avoided. To this end, information has also been provided on how students with severe reading difficulties feel about the process of reading and about being supported with their reading. An awareness of this can help schools be sensitive towards issues arising from these feelings and provide support in a manner that it is desired and will be best received by the students. There is then the potential to interrupt this 'downward spiral' and rebuild the low motivation and fragile self-esteem evident in some students.

EPs play a key role in providing this kind of information to schools. It is telling from the staff interviews carried out that no school staff mentioned research when talking about selecting interventions and tended to rely on what was already available in schools or recommendations from colleagues when selecting reading interventions. They also expressed a need for guidance in this area. EPs can therefore provide vital insight to schools by linking current theory and research with teaching practice and ensuring reading interventions are both appropriate for individual students and evidence-based.

As well as providing advice to schools on what interventions could work for those students with severe reading difficulties, EPs can also advise on how best to implement these interventions. By understanding that even the very best, most effective interventions will not work if delivered badly, EPs can help schools to plan how they will implement their interventions to ensure the highest possible chance of success. They can do this by preparing staff and the school system for the intervention, by

offering training and raising awareness of what will be required in terms of department budgets, staff time and timetabling. This kind of preparation ensures that the organisation is ready for change and therefore more likely to experience a positive outcome from an intervention. This raising of change efficacy within an organisation by an EP is obviously transferable to other educational interventions beyond reading.

In addition to offering guidance on which interventions to select and how best to implement them, EPs can help schools consider how best to provide for those students that do not respond to intervention. It is clear from current research that there is no single reading intervention that will work for every child experiencing severe reading difficulties and also that some children will need a variety of interventions to tackle their range of needs. With on-going consultation and careful individual assessment of the student, EPs can help to ensure that appropriate interventions are selected that best address their individual needs. This will help them achieve success in reading and across other curriculum subjects at school, thereby giving them a better chance of a successful future. A huge range of skills are required to achieve success in school. Reading seems the most fundamental of these.

Ben Jeffes

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Appendices

Appendix A – Parental Consent Request

Dear Parent/Carer,

I am a student currently enrolled on a Doctorate in Educational and Child Psychology at the Institute of Education in London and am completing my training at the Barking and Dagenham Educational Psychology Service. This letter is to inform you about some research I am doing in Barking and Dagenham as part of my course, looking into raising the reading attainment of children in secondary schools, which your child could potentially be included in. If they are selected, this work would involve giving your child some extra reading support in school for one term and measuring how effective this support is in helping them make progress.

The issue of raising reading levels is an important one both in the borough and at a national level and I am hoping my work in this area will provide useful information for local schools as to how they can provide for their pupils to ensure they make the best progress possible and leave school with a good level of reading ability.

I am hoping that your child's involvement in the work will provide a boost to their reading levels and be of benefit to them in the future. All data collected will be anonymous and will not be linked to individual children, their class or the school. Having said this, if you **do not** want your child to participate in the study, please fill out the form at the bottom of this letter and hand it in to the school reception and we will ensure your child is not included in the extra support group. If you are happy for your child to participate, you do not need to take any further action.

I am happy to speak with you if you have any further questions and I can be contacted at ben.jeffes@lbbd.gov.uk.

Many thanks

Ben Jeffes

I ***do not*** wish my child.....(*insert name*) to participate in this study.

....

Name of parent/guardian Signature

Appendix B – Toe By Toe summary for TAs

Toe By Toe - Key Points to Remember

- Each child should begin on the first activity in the book and progress from there. It is important that no pages are skipped. If a student finds the first pages too easy, they will complete these very quickly and will soon reach more difficult work.

- Please remember to record the date of every session completed in the toe-by-toe books.

- Each session should be 15-20 minutes long and should not be significantly longer or shorter than this.

- A minimum of 24 hours should be left between each session.

- Toe-by-toe work should take place *at least* 4 times per week but preferably 5 times per week.

- Remember that each word has to be read correctly 3 times before it can be considered 'learnt'.

- It is very important that the books do not get lost. For that reason, please keep them in the school and do not let the children take them home.

- Please provide as much encouragement to the children as possible during each session and congratulate them as they make progress.

- Coaching instructions are provided on every page of the book, but if you are unsure of anything please feel free to contact me at ben.jeffes@lbbd.gov.uk.

Appendix C - Fidelity checks

Fidelity checks took place at 2 week intervals while the intervention was taking place. They were intended to measure adherence to the intervention and cover the following areas, as recommended by Carroll, Patterson & Wood et al. (2007).

- Content
- Coverage
- Frequency
- Duration

Content and *Coverage* were assessed by 20 minute observation sessions in which the TAs delivering the intervention were observed to ensure it was being delivered correctly, in the right order according to the instructions laid out in the manual, at an appropriate pace and with appropriate feedback to the student. These occurred during the first fidelity check (2 weeks into the intervention) and then at monthly intervals. *Frequency* and *Duration* were recorded within the Toe By Toe manual itself. The content of every session was recorded within the manual along with the date it took place. This was reviewed during each fidelity check to ensure the intervention was progressing at a steady pace as recommended in the manual. The duration of each session was 15-20 minutes. Any difficulties in adhering to these times were discussed during fidelity check sessions.

In addition to adherence checks Carroll, Patterson & Wood et al. (2007) also recommend a consideration of potential moderating variables that could have an impact on the success of an intervention. These include:

- Intervention complexity
- Facilitation strategies
- Quality of delivery

Intervention *complexity* was addressed in several ways. The Toe By Toe intervention was chosen for its relatively straightforward nature, with a design specifically tailored to be accessible to parents, TAs and those without formal teaching qualifications.

Despite this, all those delivering the intervention were required to be experienced TAs familiar with teaching children with learning difficulties. The Toe By Toe manual has clear coaching instructions on every page but an opportunity was given during every fidelity check to clarify any uncertainties or ask questions about the intervention.

Facilitation strategies and *quality of delivery* were discussed during training and observations. While advice on how best to deliver the intervention is included within the manual, this was discussed during training and follow-up fidelity checks to ensure all staff were confident with how it should be delivered, how to progress though the manual and what feedback should be given to the child. As well as this a document outlining the fundamentals of the programme was provided for TAs to refer to if they felt this was necessary (see Appendix B).

Appendix D - Qualitative Interview Schedule: Pupil Questionnaire

I would like to know how you feel about reading and the help you get with reading at home and at school. There are no right or wrong answers and your answers will not be shared with anyone else.

Thinking first about reading generally:

- How do you feel about reading and your reading ability?
    - Is it enjoyable? Boring? Stressful? Difficult? Easy?
- Do you enjoy reading? What would help you enjoy it more?
- Do you feel like you need to improve and if so, in what way?
- Do you understand better when you are reading with someone?
- What do you do when you come to a word you don't know when you're reading?
    - Sound it out using the letters in the word? Skip it and move on? Ask someone for help?
- What kind of books do you read? Name some of the most recent ones? Where do you get them from?
- What would persuade you to read more?
    - A better choice of books? More opportunity to read? More people to read with?

Thinking now just about reading at home:

- Do you read at home?
- Is anyone reading with you?
    - Do you read on your own, or does someone read aloud with you?
- How do you prefer reading at home: by yourself or with someone and why?
- Would you like more help with reading at home?
- Do you prefer reading at home to reading at school and if so why?

Now thinking just about reading in school:

- Do you think you need help with reading in school? If so, what kind of help?
- Do you feel like you need more help than you get?
- Can you describe the kind of help you get with reading at school?
- Do you read one to one or in groups? Do you do other activities related to reading? Do you ever get asked to read aloud?
- How useful is the reading help you get at school?
- How useful have you found the toe by toe work you have been doing this term?
    - How has it made a difference to how you feel about reading? Would you like to carry on with it? Did you find it easy/difficult/fun/boring?
- What else would you like your school to do to help your reading?
    - Give you more time to read? Give you more help/support to build confidence?

Appendix E - Qualitative interview schedule: SENCo and TA Questionnaire

I would like to know some details about the kind of reading support offered to children in the school and your thoughts about it. There are no right or wrong answers and your answers will not be shared with anyone else.

- How aware are you of the children in the school that have reading difficulties and how do you get this information?

- How do you feel about how these children cope in class and address their difficulties?

- What kind of reading goes on in the school and how does this change throughout the year groups?
    - Year7 compared to year 10? Home reading? Library books? Frequency and length of reading sessions?

- Can you describe the kind of support provided to children who are falling behind in their reading?
    - Shared, paired, guided reading? Phonics training? Frequency and length of input?

- What reading/literacy interventions are you aware of that the school uses?
    - Toe by toe? What others?

- Can you explain why you make use of the interventions you are currently using?
    - What others (if any) have you considered? Why did you not choose to use them? Sources of advice/recommendations?

- Is there anything preventing you from providing more literacy support to those children that need it or from using particular interventions?
    - Staff? Timetable? Behaviour of the children? Budget?

- How useful do you feel the toe by toe intervention has been for the children involved?
    - Overall enjoyment for the child? Satisfaction for teacher? Quality of outcomes? Ease of delivery?

- What do you feel are the strengths and weaknesses of the programme?
    - How easy is it to deliver? What aspects of it are awkward/difficult? How do the children react to it? Any feedback from parents/teachers?

- Would you consider continuing to use toe by toe in the future?
    - What are its advantages over other interventions? What advantages do other interventions have? What would prevent you continuing to use it?

Appendix F - Gains in reading ability based on prior vocabulary knowledge

For this analysis the student's scores on the BPVS-II (Dunn, Dunn, Whetton & Burley, 1997) were used to identify the top 10% and bottom 10% of the sample in terms of their baseline Vocabulary scores. This was based on findings from Duff (2008) that vocabulary is an important predictor of response to reading intervention. Table 11 shows the average gains in Word Reading Accuracy, Phonic Decoding Accuracy and Phonic Decoding Fluency across the highest and lowest 10% of the sample in terms of their baseline Vocabulary score.

Table 11: Gains for highest 10% and lowest 10% of the sample by Vocabulary score

BPVS-II Standard Score	Word Reading Accuracy Gain (RS)			Phonic Decoding Fluency Gain (SS)			Phonic Decoding Accuracy Gain (SS)		
Lowest 10%									
	Pre-test	Post-test	**Gain**	Pre-test	Post-test	**Gain**	Pre-test	Post-test	**Gain**
43	5	13	8	50	58	8	50	52	2
45	19	26	7	50	66	16	50	58	8
60	33	40	6	69	77	8	68	76	9
Highest 10%									
	Pre-test	Post-test	**Gain**	Pre-test	Post-test	**Gain**	Pre-test	Post-test	**Gain**
89	34	38	4	88	88	0	74	80	6
89	39	54	15	72	75	3	72	73	1
88	18	21	3	76	78	2	74	81	7

Nb. RS= Raw Score; SS=Standard Score

The 3 students in the lowest 10% in Table 4 were comprised of 2 males and 1 female. One was in year 7, 1 in year 9 and 1 in year 10. Two were in school 1, and 1 was in school 2. The top 10% were comprised of 2 males and 1 female, 2 were in year 9, 1 in year 10 and all were from school 1.

Analysis was carried out on these data to explore correlations between group mean Vocabulary scores at baseline and increases in standard scores for measures of Phonic Decoding Accuracy, Phonic Decoding Fluency and Word Recognition Accuracy in the Test group (see Table 12).

Table 12: Correlations between mean group Vocabulary scores at Baseline and increase in standard score for Phonic Decoding Fluency, Phonic Decoding Accuracy and Word Recognition Accuracy in the Test group.

		Vocabulary Score	Phonic Decoding Fluency	Phonic Decoding Accuracy	Word Recognition Accuracy
Vocabulary Score	Pearson Correlation	1	-.256	.333	.406
	Sig. (2-tailed)		.188	.083	.320
	N	28	28	28	28
Phonic Decoding Fluency	Pearson Correlation	-.256	1	.075	.004
	Sig. (2-tailed)	.188		.705	.985
	N	28	28	28	28
Phonic Decoding Accuracy	Pearson Correlation	.333	.075	1	.421
	Sig. (2-tailed)	.083	.705		.026
	N	28	28	28	28
Word Recognition Accuracy	Pearson Correlation	.406	.004	.421	1
	Sig. (2-tailed)	.320	.985	.026	
	N	28	28	28	28

These data show there were no statistically significant correlations between group mean baseline Vocabulary scores and increase in score on the reading measures.

Appendix G – Pupil Interview Transcript (1)

BDJ: Ok that's recording. First of all how do you feel about reading and like your ability with reading?

I: For me, I really do not like reading.

BDJ: No?

I: No.

BDJ: So why not, why don't you like it?

I: For me it's kind of boring. I know I need to improve and umm... There's nothing really good to read.

Comment [1]: 1a. Lack of enjoyment

Comment [2]: 1b. Low ability awareness

BDJ: Ok, you find it a bit boring. Ok so what do you think would help you enjoy it more?

I: Um

BDJ: Anything?

I: I read books that like I could enjoy as in books I like I'm into reading.

BDJ: Ok. But at the moment you haven't found a book yet that you particularly enjoy.

I: No

BDJ: What about things other than books; magazines or newspapers. Do you like them?

I: Yeah.

BDJ: Ok what kind of - so what kind of magazines or papers do you like?

I: Umm. I read kind of gossip magazines and famous people stuff magazines. And I read the newspaper cos I want to see what's going on round. So I should be careful. Yeah.

Comment [3]: 2. Reading material - magazines

Comment [4]: 2. Reading material - newspapers

BDJ: So you like that stuff but just not so much the actual books...?

I: No

BDJ: Ok. So do you feel like you need to improve with your reading?

I: Yes.

BDJ: You do? And what do you think would help you?

I: I don't really know. I think I should just read every day so I could like get used to reading.

Comment [5]: 3. Commitment/effort

BDJ: Yeah. That sounds good. Right I am going to talk to you in a bit more detail about that in minute. But just a couple more questions first. Do you ever read with somebody for a start?

Comment [6]: 4. Support

I: Umm no.

BDJ: Ok. So it's only ever you just reading to yourself?

I: Sometimes at home too.

Comment [7]: 5. Location

BDJ: Yea. Ok. And what do you do when you're reading alone? Do you ever come to a word that you can't read or a word that you know you are struggling to work out what it actually says

I: Yeah

BDJ: What do you do when that happens then?

I: I just try separating the [incomprehensible] and get the way to say it, say it spell it, yeah.

Comment [8]: 6. Reading strategies

BDJ: Ok. So you just try and figure it out for yourself and if you can't you just skip it out or...?

I: Yeah skip it out if I look at a word and don't know it I miss it out.

Comment [9]: 6. Reading strategies

BDJ: Yeah ok. So you said you like to read um like gossip magazines and stuff like that. But I guess you are reading a book because you have to have one at school so what book are you reading at the moment?

I: 'Two of Kind' from Ashley Olsen and Mary-Kate Olsen

BDJ: Ok the Olsen twins.

I: Yeah

BDJ: And you are not really enjoying it? So if you don't really enjoy it, when are you actually reading that book?

I: Every day in school because umm I need a reading book. But yeah.

Comment [10]: 7 Frequency

BDJ: But you don't love it particularly. Ok. So now thinking about just reading at home... Do you read at home all?

I: Yeah I read newspapers with my Mum at home.

Comment [11]: 2. Reading material

BDJ: Ok that's good. So you do read with her a little bit.

I: Yeah.

BDJ: How often roughly?

I: Maybe 2 or 3 times a week or something.

Comment [12]: 7. Frequency

BDJ: And so what are you reading aloud with her or just reading quietly? How does it work?

I: Um. I read loud to her and then I explain what I read so then I get it. Yeah.

Comment [13]: 8. Comprehension

BDJ: Ok so that's really good. So she helps you to really understand. That's great. And so do you prefer reading out loud to your Mum like that or do you actually prefer reading by yourself?

I: Umm. I prefer reading out loud to my Mum.

Comment [14]: 9. Preference

BDJ: Yeah. Ok. Do you think. I mean it's obviously you do get help reading at home. Do you think you need more help reading at home or do you think you get enough from your Mum?

I: Umm I think I get enough from home.

BDJ: Yeah ok and do you prefer reading at home to at school or reading at school to at home?

I: Reading at school.

Comment [15]: 9. Preference

BDJ: You prefer reading at school?

I: Yeah.

BDJ: Why is that then?

I: Because umm... reading at school is more better. Cos umm I think you get more stuck into your brain. It's easier to remember the words at school. When I get home... It's like for me it's like I waste my time reading at home- yeah. But I think that it is fun.

Comment [16]: 10. Preference for school reasding

Comment [17]: 1. Lack of enjoyment

BDJ: Ok. So are you saying that you feel like it is a waste of time reading when you are at home?

I: Yeah.

BDJ: But when you are at school it's like you are still at school and you might as well do some reading. Ok right. That all makes sense. So thinking now just about reading at school not at home. Umm do you get help with your reading at school?

I: Umm no not really.

Comment [18]: 4. Support

BDJ: No. Do you feel like you need it?

I: No.

BDJ: So you are alright and you don't get any. Right ok. So when you do read at school are you reading like in groups or just are you just sitting with the book just reading by yourself. How does it work?

I: Individual reading just by ourselves.

Comment [19]: 11. Reading at school

BDJ: Right. So you never read out loud.

I: No.

BDJ: And you don't like sit in twos or threes and read out loud to each other. Ok.

I: No.

BDJ: Do you think that something like that would be a good thing to do?

I: Yeah.

BDJ: Why would it be good?

I: Cos if it, I think it would help me even better because we would, could read the same books and pages and I could understand the way like they say it and they could understand the way I say it, read the book.

Comment [20]: 12. Need for more support

Comment [21]: 13. Group work

BDJ: So you can follow whilst someone else is reading. Stuff like that. Yea. That's good. So. I know you are not getting toe by toe this term. But when you did get it last term how often did you do it do you think?

I: Loads of times I did it. On Mondays, Thursdays and Fridays. But it was really fun!

BDJ: Ok oh that's good

I: Yeah

BDJ: You enjoyed it?

I: Yeah

Comment [22]: 14. Enjoyment

BDJ: Ok. So how do you think it was useful? How useful was it?

I: Very useful. Um. I've done loads. It helped also with some of my words in reading and umm writing as well as well as reading. I like the writing out activities cos they're fun. I wouldn't mind carrying on with it.

Comment [23]: 15. Success

BDJ: Oh really. So it helped you with your reading and your writing.

I: Yeah

BDJ: How did it help with your writing?

I: Um because umm the words they put there. I sometimes I can't say it but I can read it. Sometimes umm we have to umm spell it out and then write it, write it and spell it out and it got stuck on my...

Comment [24]: 16. Reading and writing

BDJ: So right once you have written it fifteen times it gets stuck in your head and that helps you spell it in class.

I: Yeah.

BDJ: Ok. So you found it quite fun, you thought it was pretty useful for your reading and your writing. So would you have liked it to carry on this term or had you had enough of it by then?

Comment [25]: 14. Enjoyment

I: Umm - I'd like to carry on...

Comment [26]: 15. Willingness to continue

BDJ: You would have liked to carry on.

I: Yeah

BDJ: So it's something that ... I can't, I can't promise that it will. I am just interested to know that you would have carried on if you'd had the chance. That you would have liked to have done that. Ok. So is there anything else apart from the toe by toe what else do you think that the school could do to help you with your reading?

I: I don't think anything but just bring better books in.

Comment [27]: 16. Choice of reading material

BDJ: And maybe the extra toe by toe and maybe the reading in groups might be useful.

I: Yeah

Comment [28]: 15. Willingness to continue

BDJ: Ok, well it's really good that you did all that toe by toe work and it's great that you do the reading with your Mum and I am sure that you will carry on getting better.

Appendix G – Pupil Interview Transcript (2)

BDJ: Ok so just tell me. How do you feel about reading and how good you are at reading.

I: I think I am ok. But I could improve.

Comment [29]: Need for improvement

BDJ: You could improve. Ok. Yeah well I think that's probably true for everybody. Do you enjoy reading? Or is it difficult, boring, you tell me.

I: It is a bit difficult it is but I try.

Comment [30]: Awareness of low ability

BDJ: Yeah you do try. I can see that you definitely try. So what do you think would help you enjoy it a bit more?

I: A bit like. Umm. I don't really know really.

BDJ: Ok. Can you think of anything that would make you want to read a bit more than you do? [Pause] Not sure?

I: No.

BDJ: Don't worry. You said that you feel like you need to get a bit better.

I: Yea

BDJ: Is there any particular part of reading that you need to get better at do you think?

I: I think it's like the five letter words and all that...

Comment [31]: Current level of ability

BDJ: Ok. So it's like you are okay with three and four letter words but now you need to get onto the longer words. Yeah, I think that's a good answer. So if you come to a word that you don't know when you are reading what do you do to help read it?

I: Well I try to sound out the word I do but sometimes I have to ask for help if I get stuck.

Comment [32]: Reading strategies – sounding out

BDJ: How do you... So you just use the individual letters and try and work out what it says? Do you normally manage that? Or...

I: Sometimes I manage it and sometimes I try other things as well.

BDJ: Ok. And what kinds of books to you read when you are reading?

I: I've read a bit of Mice and Men.

Comment [33]: Reading material

BDJ: Oh wow. Ok. That's good!

I: I try to read a bit of Macbeth.

BDJ: Wow. That's difficult.

I: I know - I didn't like it! Err.

Comment [34]: Lack of enjoyment

BDJ: Alright.

I: And I am reading now is Diary of a Wimpy Kid.

Comment [35]: Reading material - books

BDJ: Ok yeah. That's a good book. Alright. So lots of different things. Do you get them from the school library?

I: No. Well. Macbeth and err Mice and Men I read that in my, I tried to read that in my English class but err Diary of a Wimpy Kid is my book.

Comment [36]: Book ownership

BDJ: Right you bought the book; your own. Ok. So umm, do you also read magazines and newspapers and stuff?

I: Err. I try to read the newspaper I do?

Comment [37]: Reading material - newspapers

BDJ: Yeah which one. Is it like the sports pages or something?

I: Yeah

BDJ: Do you know which newspaper?

I: No.

BDJ: No.

I: I can't remember.

BDJ: It doesn't matter. It's alright. What do you think would encourage you to read even more than you do? Can you think of anything?

I: No.

BDJ: No. It's ok. Do you read at home?

I: Yes. I try to read yeah...

Comment [38]: Reading location

BDJ: Aha. So you try to read at home. Do you normally read with someone at home or just by yourself?

I: I read with someone. So if I make a mistake then they tell me so I can remember.

Comment [39]: Reading support

BDJ: Ok yeah that's good. So do you always read with someone when you are at home?

I: Err yeah.

Comment [40]: Support from home

[Interruption of meeting]

BDJ: Sorry about that. We will just carry on for a few minutes if that's alright. So sorry you were saying when you are at home you are always reading with somebody.

I: Yeah

BDJ: Yeah. Is that like your Mum or Dad?

I: Yeah

Comment [41]: Support from home

BDJ: Ok. And they help you?

I: Yeah

BDJ: Do you find that when you are reading with someone it's easier than when you are just reading by yourself?

I: Yeah it's easier because they like tell you the words and then you remember it. But when you try read it on yourself, err by yourself it's more harder and so you can't really remember.

Comment [42]: Benefits of reading support

BDJ: Yeah it is easier when you've got someone to help you that's true. So do you prefer reading at home or at school?

I: I prefer reading at school.

Comment [43]: Reading location preference

BDJ: Oh ok why do you prefer reading at school?

I: It's just like more books and more interesting stuff. You can choose more books and concentrate better so umm, I read more I think I do.

Comment [44]: Reading location preference

BDJ: Ok that's good. So there is more interesting stuff at school. How often would you say that you read at home?

I: I'd say like maybe like... twice a week.

Comment [45]: Reading frequency

BDJ: Twice a week and at school?

I: Oh in my English class I read a bit I do, like in books for the books and err four other classes apart.

BDJ: Right so you read a bit in English.

I: Yeah

BDJ: And in English class do you... are you reading out loud or just by yourself?

I: Out loud.

Comment [46]: Reading preference

BDJ: Ok. And do you prefer reading out loud or just quietly to yourself?

I: I prefer both.

Comment [47]: Reading preference

BDJ: So you don't really mind. So when you are reading in school is that in like a small group or in class.

I: It's just like a small group it is.

Comment [48]: Group reading

BDJ: Right. So is that some extra reading help that you are being given by the school.

I: Err yeah.

BDJ: Yeah. So what kind of help do you get apart from that?

I: I get help from classes like English sometimes. Science.

BDJ: Yeah.

I: Well I'm pretty good at that anyway so I don't really need any help.

BDJ: Ok but what's the help like. Is it someone coming to sit with you?

Comment [49]: TA support

I: Yeah it is.

BDJ: Do you ever get taken out of class for extra practice with your reading or your writing?

I: No.

BDJ: Ok so let's then talk about... Oh actually before I do that how useful do you think the help is that you get at school...

I: It's good.

Comment [50]: Views on support - useful

BDJ: Ok so that's good. Do you... When you were doing toe by toe you got taken out of class for that. So what did you think of toe by toe?

I: I think it's good.

Comment [51]: Positivity

BDJ: Why was is good, what was good about it?

I: It says like for fake words and non words... like... then it moves on... if it sounds like proper words it does then it moves you onto the real word and shows you how to link them and you hear what actually sounds like it.

Comment [52]: Sense of progress

Comment [53]: Blending/phonics

BDJ: Yea yeah. So you have these pretend words like we were reading just then and then it turns them into proper words. So you like that. Ok that's good. Is there any other way that it was useful for you.

I: Well it helped me with my reading.

Comment [54]: Helpful

BDJ: It helped you with your reading... yeah that's good! Would you like to carry on doing it?

I: Yes

Comment [55]: Desire to continue

BDJ: You would. Are you still doing it this term do you know?

I: Err... Yeah.

BDJ: You are. Ok. Well I hope that you do and that's actually not completely up to me it's up to the school ... but hopefully they will be able to carry on giving you some kind of help because obviously it's good. Do you... You said it was helpful. Do you find it fun or interesting or is it actually a bit boring?

I: Interesting.

BDJ: You do like it. Ok. Well, that's really good. That's really good. Can you think of anything else apart from the toe by toe that the school could do to help you with your reading?

I: No.

BDJ: Ok. Do you think that toe by toe is something that you could take home and use at home if someone was there to help you?

I: Maybe.

BDJ: Maybe. Well, that may be something to think about. Ok Sam well we'll stop there. That's really good.

Appendix H – Staff Interview Transcript (1)

BDJ: So first and foremost when you are working with the various different children that you work with how do they get given to you? What is the process that means that a child ends up getting extra support from you or any of the other teaching assistants?

I: Umm... We kind of looked at the list and picked as far as I remember...In terms of...

BDJ: Oh I'm not just talking about child by child for this project I'm talking about literally everything...

I: Oh...

BDJ: Starting big and then we will narrow it down a bit stage by stage...

I: Starting big. So in terms of key workers... xxx and xxxx and I and co-operate to some degree because she only works part time, split them up normally having a statement each if there are one... more than one

Comment [56]: Team Work

BDJ: Right ok

I: And then going down from there err... Blimey splitting what else up? I can't think...

BDJ: Ok. So it's like statements and who's on School Action Plus and who's on School Action and all that.

I: Yep.

BDJ: Ok and it's a whole range of different needs that you all work with isn't it so...

I: Yes I mean obviously because xxx is SENCO she'll have a specific... like the 'looked after child' we have is hers because she has to have more input into that.

BDJ: Yeah

I: But other than that it is kind of just... so for example last year where I had three Year Elevens that left... I then took three Year Sevens on ... It is just workload so that we are all evenly working.

Comment [57]: Year groups

Comment [58]: Shared workload

BDJ: Ok. Yea. And thinking then just about the children with reading and writing difficulties. Apart from err the toe by toe work that you have been doing do you spend any other time with children who have those kind of difficulties?

I: I do at the moment because I am also doing a course.

BDJ: Oh right ok. So just one or a couple..?

I: I have worked with three so far specifically for my course.

BDJ: And what kind of work are you doing with them?

I: Mostly testing cos I have done that module and after summer I am moving onto the intervention module.

BDJ: Ah ok. So different stuff. And are you... Is this like sitting with them in class or are you taking them out of class?

I: Both actually for what I had to do for my assignment it was umm... a good four or five hours of various tests...

Comment [59]: Support in and out of class

BDJ: Right ok.

I: And some bits and then some in-class observation and I don't necessarily know exactly for each child what I will do with them following that.

BDJ: And do you know what's available thinking now just about children that have reading and writing problems... what support does the school have for them again apart from the toe by toe what kind of stuff is done for them?

I: So reading and writing if they are coming knowingly that they are or even from an initial assessment in Year Seven they'll obviously go in the Foundation English Class which is taught either by xxx, xxx or myself. Umm and then obviously I mean especially the Year Seven's are generally both passed with xxx and then I've got Year 8 and xxx has got Year 9 umm having specific extra bits so they are very focused on some spelling and some handwriting and some sentence construction.

Comment [60]: Early assessment/intervention

Comment [61]: Additional support

BDJ: Yeah

I: So in terms of English that's through the teaching.

BDJ: That's sort of Phase One if you like?

I: Yes. And then obviously Lexia, toe-by-toe, speech and language to a degree is a little bit the same for the children so that's that... [Incomprehensible] obviously does sentence construction and she was always doing one on toe by toe, word reading and other things like that...

Comment [62]: Support programme

BDJ: Ok.

I: And then anything more specific again sometimes when we're supporting them we might withdraw them from the lesson to do something more focused.

Comment [63]: Targeted support

Comment [64]: Support out of class

BDJ: So there is quite a range of stuff going on...

I: And then obviously even the teachers for some of them - ummm - do very constructed worksheets for their generic core subjects when they aren't able to...

BDJ: Yeah. So it seems in the Foundation Class they are getting targeted work, if that's not working they might get something else and if that is not working they might get something else and so it just kind of builds up from there.

Comment [65]: Assesment/early intervention

I: Yes. It does build up. So we do a general and then specify for the different ones.

BDJ: Those children that are in the Foundation Set and struggling, how do you feel that they that they cope in their other lessons do you notice that they really struggle or do they get on alright... yea they do...?

I: They do... but I have to say that it's better now. Because both Maths... English, Maths and Science are all set from the third week of Year Seven so that makes a difference to them especially Science and then other things are progressively set throughout the years... It is obviously hard to timetable for every set but that is obviously where we go in terms of support. So it is not necessarily every lesson for the lesson or the subject that they struggle with but it is more or less. Especially Lower School we target because they are forms so you might have three or four in a form to focus on. A couple of lessons for each one of each subject and then as they go up they have (a) chosen their options by the end of Year 8 and so that makes a difference now and (b) they are set even in then RE so they are set in English, Maths, Science, RE, ICT and they have only got two other options and if they have taken them the chances are hopefully they have some ability so yunno it is a completely different support at Upper School.

Comment [66]: Streaming/ differentiation

Comment [67]: Timetable issues

Comment [68]: Support differs with age of students

BDJ: Yea. Ok. And thinking about how the children move through the school, the children that are in the foundation literacy group in Year Seven presumably they're reading in class more or less every day?

Comment [69]: Dedicated reading sessions

I: Yes

BDJ: Or pretty much.

I: Pretty much yeah.

BDJ: Does that change as they move through the school?

I: Not in the foundation class.

Comment [70]: Dedicated reading sessions

BDJ: Right so they are always reading...

I: I would say so yes.

BDJ: Urr. Whether they are Year Seven or Year Ten or whatever.

I: Yes I mean obviously Ten and Eleven are a little more constrained with time. But even then, I mean in Nine and Ten they are basically doing their literature preparation rather than their language preparation so they are basically reading something because that is what they are doing anyway. So certainly in forms they are still expected to be reading most mornings all year groups.

Comment [71]: Timetable issues

BDJ: Very good. And you have listed a whole load of extra stuff that the school has in the bag if you like for the children that are struggling. Do you have any particular preference for what you think works best or just something that is a favourite of yours whether it's Lexia or toe by toe or one of the other things that are available.

I: They work for different kids. I do think one to one works better and a lot of the kids that have this difficulty anyway I find that the kids really like some one to one attention anyway even if it is whilst you are ticking the page for toe by toe for example... have a quick chat about 'what did you do' and they like that and that helps them anyway. So I do think one to one works better than Lexia. Although Lexia feeds back it's not human feedback and I think that's the one to one when I have done it, it has really benefitted.

Comment [72]: Need for range of interventions

Comment [73]: Preference for one to one

BDJ: Yeah ok. So anything that is one to one has a sort of your vote a tick by it as far as you are concerned. Ok! And then thinking now specifically about toe by toe. What if I ask you to list some of the things that you liked about it some of the things that you really that you think are broadly good about it. One to one might be one of them. Anything else particularly that sticks out for you that made it good or better than something else.

I: Umm. Obviously it builds on it so they don't know... they try and try again. I mean I am not a 100 per cent sure how much each element of for example Lexia goes back and retests but the fact that you have to get the three ticks. A couple of times not many because my

Comment [74]: progress markers

student wasn't too bad but a couple of times he may be have possibly got it by fluke the first time... thought about it the second time, and then thought I am really good at this, third time maybe got it wrong. So it really proved that maybe he didn't get it quite the same way as he thought he had and then it actually maybe after the first few weeks of that he was more focused and I can really see that coming through when the sentences are being read. On those pages he is much more careful.

Comment [75]: Motivation

Comment [76]: Improvement

BDJ: Right ok so that is sort of about structure?

I: Yes. Doing it bit by bit and then putting it into sentences however randomly stupid they are. Umm made a difference. And more... even actually the best pages are the ones where you put the words in and copying them down and writing them and then randomly we'll go through the book and go back to all the ones that he has done on that and I find that really works.

Comment [77]: Structure

Comment [78]: Repetition

BDJ: Ok that's good.

I: Cos it means that obviously it's in there somewhere.

BDJ: No that's great. So that's a couple of good reasons. Any others particularly?

I: It's quite straightforward.

Comment [79]: Ease of use

BDJ: Straightforward and easy to use. Yea someone else said that...

I: Yeah it's really self explanatory and actually almost although some of them were comments for the teacher we'd read through them together and he'd then almost because he understood the principle of why we were doing it as well he understood better. I think that his inability... his reading difficulties... he's actually quite good at comprehending I think he went 'oh ok that makes sense now'.

Comment [80]: Clear instructions

Comment [81]: Improved understanding

BDJ: Oh ok so that helps as well. Do you think the training you have had was ok. I know I gave you about an hour in 2 separate sessions I think it was...

I: But it's quite straightforward... So it really wasn't... Yunno. Once the little bits of specific information were done it really was...

Comment [82]: Straightforward

BDJ: Yeah so it was ok and so you feel like the instructions in the book were easy for you to understand what you were doing. And what about the bads... the negatives? Things that you found annoying or frustrating about it.

I: Nothing frustrating about that. I find it frustrating sometimes that I couldn't physically do it because of the timetable but that's not a toe by toe issue. I don't know really...

Comment [83]: Timetable issues

BDJ: You are OK with it generally?

I: No I couldn't see a problem with it I think the only thing would be that you can only do it to so many times because of the man hours but the actual 'thing'... there weren't any really negative things with it.

Comment [84]: Staff numbers . timetable

BDJ: So you have sort of touched on this but what are the things that stand in the way of you doing more of that kind of thing? I suppose budget, man hours would be the first things...

I: Probably budget, the cost of the books and then the man hours. Physically you'd be taking away from more than one child if you then said right it is not just going to be registration time it could be a lesson. But if you are doing one to one... Unless you happen to be very lucky... Especially if you are working with Upper School you might only come out of a lesson where you are supporting one specific child if you then come away and end up supporting more than one in lower school you have obviously got to balance out priority.

Comment [85]: Budget

Comment [86]: Staff numbers

BDJ: Ok so... And what about timetable. Does that... Can you fit it around the existing timetable.

I: No we are quite used to doing different things at different times. So it kind of ok.

BDJ: Ok so I think I know what you are going to say but if... Have you got a few more minutes?

I: One...

BDJ: In that case I will skip on and just ask very quickly. The process of buying in something like Lexia or Toe by Toe how does that actually happen. Is that decided by xxx and xxx or is it decided by the three of you together?

I: I mean eventually it is not even probably our decision but as long as we can put the proposal forward for how effective it would be for the students. The budget is no longer a department budget it is a school budget you have to just bid for.

Comment [87]: Need for proven effectiveness

Comment [88]: Shared budget

BDJ: Right I see.

I: But yes I mean we all looked at Lexia for example. Somebody came in. We did a really good process of assessing it would be perfect for the kids and so therefore we were allowed to have it. So...

Comment [89]: Selection of interventions

BDJ: And that's the process.

I: Yeah

BDJ: In that case. Thank you very much. Very helpful!

Appendix H – Staff Interview Transcript (2)

BDJ: Ok so first of all do you know... When you start working with a particular child.

I: Yes.

BDJ: Why are they being given to you if you like? What is the process that gets them assigned to work with you?

I: Right as far as I am aware it's the fact that you have done an assessment on them and you think they have got a need for doing...

BDJ: Oh sorry. I am not talking about toe by toe yet. I'm just...

I: Any kind of...

BDJ: Yeah any of the children you do work with.

I: By doing a baseline assessment I would say.

BDJ: Right ok. So and...

I: As in a spelling, Macmillan or yeah the reading...

Comment [90]: Assessment of reading and spelling

BDJ: So do you mainly work with children that have reading and writing problems? Or is it a whole?

I: Is that within the... more like...

BDJ: Just in the whole school. Yeah.

I: Yes well. Weak in literacy and numeracy and because of physical disability or things like that. Varied....

Comment [91]: Varied support offered

BDJ: Ok so you do loads of different stuff.

I: Yes. Yea.

BDJ: And is there any particular thing that you do most or is it a kind of spread?

I: No it's a spread really.

Comment [92]: Wide ranging role

BDJ: A spread of all sorts. Ok. And how many children are you doing toe by toe with?

I: Just one but I am starting with another one.

BDJ: Ah ok.

I: As soon as the Year 11s finish it's not so crazy... Then yeah...

BDJ: So sorry who is your person?

I: It's XXX

BDJ: Oh right yea. Ok. Yea. He's a nice boy.

I: He is.

BDJ: But he does find it difficult. I remember him. So, just thinking now about the reading and writing support that you do. What kind of stuff do you do again... We are going get on to toe by toe but put that to one side for a minute. Just in class, out of class what kind of support activities do you do?

I: Well I run a reading support group.

Comment [93]: Reading support group

BDJ: Ah ok.

I: With Mr xxx. And um it's with the Year 10s with the Year 7s.

BDJ: Right.

I: So some of the children I work with do come to that.

BDJ: Ok.

I: So that's for fifteen minutes. It can only happen unfortunately one morning a week. But they do fifteen minutes and that is er students whose reading levels are possibly lower than they should be. Or if they are in the lowest ability English group.

Comment [94]: Lack of time/staff

BDJ: Ok.

I: But in every lesson I go to obviously I will ask them to read to me.

Comment [95]: Support in class

BDJ: Right.

I: I will read to them. We will go over stuff. We will read back.

BDJ: Ok so you are sitting with people actually in classes

I: Yes.

BDJ: And you're helping them with the reading helping them with the spelling.

Comment [96]: Support for reading and spelling

I: Helping with reading with spelling...

BDJ: Yeah.

I: Yea. With understanding what is expected of them. Yeah. The lesson objective. Yeah.

BDJ: Right. Good. And do you ever take children out of class to do any of those things with them?

I: Um.

BDJ: Or is it normally within the classroom.

I: It is usually within. Yea. Because of inclusion it is usually within the lesson.

Comment [97]: Inclusion

BDJ: Ah ok

I: However. If it is a test and they are going to want to read the question to us or because of their exam concessions we can to read the questions to them then I will take them out because then it is not disturbing everyone else.

Comment [98]: Support out of class

BDJ: Ok. So generally because you want to be as inclusive as possible you try and keep them in a class unless it's something like that a test... in which case you will take them out.

I: Which would benefit them and the other children cos they are not being disturbed yea.

BDJ: But that is normally the only reason why you will take them out.

I: Sometimes there is bits of group work where you might take them out but that's... I can't remember any instance this year when that has happened.

Comment [99]: Occasional support out of class

BDJ: So it is few and far between.

I: Yeah

BDJ: Ok and do you know apart from the toe by toe of any particular things that the school do to help children that are falling behind. You have already mentioned the.

I: I know that there is Lexia. I know that Word Wasp is being done with some children.

Comment [100]: Use of LEXIA

Comment [101]: Use of Word Wasp

BDJ: Ok and is Lexia a useful thing to have available?

I: It is good yeah, they can really just get on with it themselves and you can keep an eye on them and check it's being done right.

BDJ: How often do you use that do you think?

I: I know that xxx is doing some um mornings and some afternoons with some children as well. Yes.

BDJ: You mentioned that yeah. So there's quite a few. What about Word Wasp?

I: I've not used it myself, but I know xxx has found it useful.

BDJ: Ok, sure. So there's a few different things the school uses.

I: There's quite a few things. The reading support group. Um I know that there is um last year I used to do touch typing and I know that there is one girl who still continues with that as well.

Comment [102]: Typing support

BDJ: Ok so there is a whole spread of stuff... Good. And of those I don't know how many of those you're actually involved with...

I: Yes.

BDJ: But do you have any kind of preference for one thing that you think is particularly good or that you find the children enjoy a lot?

I: I do well... I do the toe by toe and I do the reading support. I've not done Word Wasp with a child. I used to do the touch typing which was actually was very good because it meant that um if their writing skills were a little slower maybe they were able to do that and certain children can get that as an exam concession. So if they can learn to touch type at an early age that's quite a good thing to do.

BDJ: Yeah yeah. That is good.

I: Yeah. And also some of them do you use a computer within the lesson.

Comment [103]: Use of computers

BDJ: Right ok.

I: We have got students that use laptops in lessons

BDJ: And they quite like that.

I: Yes. Yeah. I mean there is obviously the getting the computer out, the switching it on so there can be time factors but once everything is set up I think it is quite a good idea for them to be able to do that.

BDJ: Sure yea. Yeah. And so the touch typing that's a good one. Any others that you would pick out?

I: I found toe by toe really interesting actually.

BDJ: Yeah.

I: It has made me think also about the way that I would then read something and the way that I would understand something. So yeah...

BDJ: Ok so that is helping you in that sense.

I: I mean obviously I have done this job for 11 years but still...

BDJ: Really? Wow!

I: But you kind of... it is good to go back over things and... I mean everyone is learning every day. And I always think it's a really good thing to do. Yeah.

Comment [104]: Improving skills

BDJ: Ok so let's talk about toe by toe in that case. What did you think of it? If I told you, if I said to you I don't know anything about it. Just tell me... Give me the kind of basics. Is it worthwhile? Do the children enjoy it?

I: I think because it is more personal than others, it has that one to one thing I think that the kids quite like that but because they are able to come into you. They are able to talk to you at the beginning of it and then we you know obviously we go through the fifteen minutes of that. But then I think this was mentioned in the meeting but because it is a personal thing I think that that is quite a good thing. I think the actual program is really good. The way that it seems to be set out and the way that things are repeated within it. And the way that it is explained is very good.

Comment [105]: Benefits of one to one tuition

Comment [106]: Personalised approach

Comment [107]: Clear instructions

BDJ: Ok. That's good.

I: Yeah I think that the way that it is explained. And certain things I did have to read and then go and check with someone else who had already done that page just to you know 100% check that I am doing it correct as well. But once you've learnt how to use it you'll always know how so you can go back to that if you ever need it.

Comment [108]: Team working

BDJ: Ok. So there is the repetition that is good.

I: The repetition is good

Comment [109]: Repetition helpful

BDJ: The one to one is good.

I: The one to one is good. Yes.

BDJ: And er what else did you say?

I: The way that the instructions are set out.

Comment [110]: Clear instructions

BDJ: Oh yes. The way that the instructions are set out.

I: And the fact that there is quite a lot of space for you. Because certain things he did continually seem to get them wrong. So then we... But there is quite a lot of space and scope to go back through the book and then things are repeated again so you can grasp. Yeah. Different ideas.

Comment [111]: Good layout

BDJ: Ok. And so it is all nice and clear there for you.

I: Yes I would think so yeah.

BDJ: If I said to then do the opposite and say why is it not good. What is the bad side of it? Where's the... ... It can't all be perfect. How would you criticise it if at all? You don't have to. But if there was something.

I: I think... Not actually the program but I think if you if we had the time and the resources to be able to do it every day. Yeah. I think that would benefit a lot more. I mean xxx who I am with has got a bit of an issue with attendance... no necessarily with attendance but with punctuality... So it means that within the mornings he is not always there. So trying to fit in the fifteen minutes can be a bit of an issue.

Comment [112]: Lack of time / Staff numbers

Comment [113]: Attendance issues / wasted time

BDJ: Yeah.

I: So if it has been ten-to, I have said to him go to registration and I will grab you last lesson.

BDJ: Right.

I: But then it can work out awkward because of the 24 hour thing. Do you see what I mean. If I have seen him and then I am seeing him in the morning. They can end up missing the same lesson over and over if you're not careful.

Comment [114]: Inflexible timetable / missing lessons

BDJ: Oh I see yes! Oh yeah.

I: It is not enough time so I then have to then see him in the afternoon.

BDJ: I see.

I: That would be the only thing. If I knew that he could be in every morning and I could do that without having other commitments.

BDJ: I see yeah. Ok. That's a good point actually. Someone else. I think it might have been xxx said it would have been good to have had some more training. Do you think the same?

I: Well I think that because our team work quite well together we are able to kind of go 'not quite sure about this page'...

BDJ: Yeah.

I: And then we will look through it and we can kind of work it out between us. You see. But yea training would be good. But that is the same with everything really.

Comment [115]: Team working

BDJ: Yeah I mean I gave I think like one half hour session or whatever it was. I could have given you two I just didn't want to be patronising doing page after page after page.

I: No I can see that.

BDJ: But I could have given a two half hour sessions for example. Do you think that would have been helpful?

I: I do. I mean certain I mean certain of the pages it is very very clear. Some other pages I did have to kind of read it twice and also if you are meeting that student sometimes you are not sure how far you are going to get and although I am reading pages ahead we can get further than that in that fifteen minute session and then I have to read and then obviously explain to them what we are going to do. These are real words or these are nonsense words. Blah blah blah blah blah.

Comment [116]: Clear instructions

Comment [117]: Planning in advance

BDJ: Good point..!

I: Do you see what I mean?

BDJ: You need to know ahead.

I: So you kind of have to... yeah... you have to read quite a long way ahead!

BDJ: Ok yeah. So yeah sort of normal school... school problems. Like planning time and the timetable.

I: Yeah timetable yeah.

BDJ: And needing to make sure you know what is coming up in the books so you don't suddenly find yourself thinking what I am supposed to do here... Ok yeah that's all good and... Yeah... I mean... You are probably going to be using it through this term

I: Yes

BDJ: But whether the school carry on using it in September isn't just down to me it's about what xxxx and xxxx want to do as well. Do you... If it was just down to you would you think it is worth carrying on using it?

I: Definitely yea. I mean I think that if you start something you need to finish it otherwise you are not giving them their full...

Comment [118]: Worth continuing with Toe By Toe

BDJ: Yeah so you wanna finish it with those children...

I: To reach their full potential... I mean really I can't think what page we are on but I know there is quite a few pages to go... So yeah I mean probably wouldn't finish it this year but if next year it was feasible to do it again.

BDJ: You would.

I: Yeah.

BDJ: What about with other children.

I: I think so yea.

BDJ: You would recommend it.

I: Yea. Definitely. Because I know I am working with Year 7 but the boy other one I will see is a Year 10. So I'm quite interested in the contrast between the two. To see... Yeah.

Comment [119]: Use with different age groups

BDJ: Ok no that's a good point as well. Alright that's great. Thank you very much.

I: You're welcome!

BDJ: It's all very helpful.