The LAMP Language and Communication Screen Used to Support Teachers to Identify Speech, Language, and Communication Difficulties in Four Primary Schools in Varied Social Contexts

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Abstract

The research described here was inspired by a national review which concluded that too many children come into our primary schools with unmet speech and language needs (Bercow, 2008). Teachers are in a position to identify language difficulties but many have expressed uncertainty regarding their role in this process. I believed that the LAMP (Linguistic Assessment for Mapped Provision) screen for language and communication which I had developed would help teachers to identify language concerns and would also increase their professional confidence in this complex area.

I had developed the LAMP screening instrument and piloted it over a 2 year period prior to this study. It is employed here as a universal screen that is used in a whole school approach in order to enable teachers to identify language need. The use of the LAMP as a universal screen applied to all the children in a school lessened the likelihood of preconceived notions impacting upon teacher's perceptions of need in the classroom. The LAMP data allowed schools to track the progress of individual children within a class and whole school context.

Teachers need to be aware of any pre-conceptions they may have in relation to the performance of children from different socio economic circumstances. The hypothesis that poverty continues to provide the weightiest detrimental effects upon children's language development was examined and within the parameters of this study was found to be contestable.

Study design: A systematic survey was conducted over 4 Primary schools using the LAMP. Rich picture data was accessed from teacher questionnaires and focus groups involving participants from the schools in the study. The repeated measures design provided information on what teachers had learned in the period of reflection between the screenings. The use of a mixed methods repeated measures design helped me to understand what was difficult for teachers and what the teachers felt would help them. The 4 schools in the

study were chosen to reflect varied social contexts in order to explore any impacts of SES on the results.

Analysis of data: In a repeated measures design, a LAMP screen was completed for every child across the 4 schools by their teachers in February and then June in one school year. Results of screening were analysed and compared on a range of variables using SPSS. Questionnaires were used to collect teacher perceptions before and after using the LAMP screen. Focus groups were held in the schools at the end of the study to add more information on how helpful teachers felt the process had been in raising their awareness, confidence, and skills in the identification of SLCN.

Findings: The main trend observed was a decrease in levels of teacher concern related to children's speech and language needs from the first to second screening survey. Differences were found at a statistically significant level on a range of variables. The expected differences between high and low socio-economic status (SES) schools were not found.

Teachers reported increases in their awareness, confidence, and skill in identifying children's speech language and communication concerns by the end of the study. Some changes to classroom practice were reported.

Conclusions: I propose that use of the LAMP screen increased teacher awareness of the nature of language difficulty and that this heightened awareness was a key variable in the observed changes to language concern scores. The LAMP screening process was seen by schools' staff to have had a positive effect on teacher's skills and to be relatively easily assimilated into the school system. However some participants identified a number of challenges relating to time constraints and maintaining the use of LAMP as high profile in the context of competing time demands in their schools. It is suggested that EP services would be in a position to support schools to implement and embed the LAMP screening model as part of their Service provision.

It is also proposed that economic deprivation or disadvantage did not appear to be the only important factor to consider when making funding decisions intended to support children's linguistic competency in schools.

4

Contents

List of Tables

11

13

15

16

17

Definitions, abbreviations

ASD: Autistic Spectrum Disorder

BCRP: the Better Communication Research Programme

EIC: Excellence in Cities

EP: Educational Psychologist

EPS: Educational Psychology Service

ERBS: Expressive, Receptive, Behaviour, Social Skills (LAMP screen scales)

HBAI: Households Below Average Income

IDACI: Income Deprivation Affecting Children

IEP Individual Education Programme

LA: Local Authority

LAMP: Linguistic Assessment for mapped Provision

PLASC: Pupil Level Annual Schools Census

PLI: Pragmatic language impairment

RCSLT: Royal College of Speech and Language Therapists

SEN: special educational needs

SENCO: Special Educational Needs Co-ordinator

SLC: Speech, language and communication

SLI: Specific language impairment

SLCN: Speech, language and communication needs

SMT: Senior Management Team

SLT: Speech and Language Therapists

S1: Screen one (S1)1st screening of the LAMP

S2: Screen 2 (S2) 2nd screening of the LAMP

TA: Teaching assistant

FG: Focus group

CHAPTER 1 INTRODUCTION TO THE RESEARCH

It is a matter for concern that many children in our schools are found to have underdeveloped speech, language, and communication skills (Bercow 2008). In 'The Cost to the Nation of Children's Poor Communication' (I Can, 2006) it was advised that we take heed of the fact that in the UK there will be at least 2 or 3 children in every classroom continuing to experience problematic language development. There will be more children affected in areas of particular disadvantage. It is well documented that children who have limited language skills are particularly vulnerable to failure in formal learning and that long term limiting impacts can be expected (I Can, 2006; 2007; 2011; Communication Point, 2011). The report highlights the need for more effective identification and intervention for these children pointing out that these needs will be not necessarily be correctly identified in school (I Can, 2006). These claims are supported by evidence in the research literature which confirms that language needs have continued to be significantly under identified in the school population as a whole (Cohen et al, 1998: Snow, 2013). It was accepted by the Bercow review committee that national policy would be inherently flawed if it advocated early intervention at pre-school at the expense of on-going intervention and support once the child starts school. Thus it became apparent that more attention must be given to the language needs of the child in Primary school.

The role of the school

The report from the Bercow Review emphasised the need for teachers to be more aware of the nature of speech, language, and communication, be able to identify concerns with accuracy and know how to provide appropriate support and intervention where children are failing to acquire the necessary skill levels (Bercow, 2008). This attracted my attention because, as a practising EP, I had previously developed a universal language screen I called LAMP (Linguistic Assessment and Mapped Provision) which acted as an enabling tool to support teachers in the effective identification of language and communication difficulties in the classroom.

Language difficulty: a "hidden disability"

Language difficulty has been called a hidden disability due to the subtle and often invisible nature of needs that are not immediately apparent (Nation and Snowling, 2004; Shapiro and Bonds, 2010; Snow, 2013). Part of the difficulty with identification lies in the complexity presented by the hidden or disguised nature of many language processes. This has been found to create difficulties for teachers in the long term (Douglas, 1964; Botting and Conti-Ramsden, 2000; I Can, 2006). While the same teachers are largely confident in assessing many areas of learning they may feel less so in relation to identification of language concerns in the classroom. Indeed a national survey of teachers by the then Department for Education and Schools (DfES, 2001a) supported this claim. The survey reported that over half of the teaching workforce continued to feel a sense of confusion regarding the identification and support of language needs. Teachers also said that they lacked the necessary awareness, confidence, and skills to identify speech, language, and communication needs effectively. This concern amongst teaching professionals was heard at the time of the DfES 2001 teacher's survey and continued in the later review by I Can (2006). I felt drawn to question the reasons why this universal human skill of oral communication was so resistant to assessment by teachers and to ask whether LAMP would be prove to be an enabling tool that could help many teachers in overcoming this barrier.

A further complicating factor appears to be that early language difficulties which have been thought to have resolved can re-appear later in the child's experience. Roulstone et al (2011) state that it is a matter of concern that, if left without intervention, speech and language delay in pre-school children has shown high persistence rates after they enter Primary school. The most common rates were in the 40% to 60% band. Certainly in Roulstone's large UK study, two-thirds of pre-school children whose needs were identified and a referral made for speech and language therapy, but offered no direct intervention, showed continued levels of delay at a level that would still have met the criteria for therapy 12 months later (Roulstone et al, 2011). There are many other cases where the outward signs of language related need are

20

identified and apparently remediated early in a child's life but later many of the underlying processing difficulties have been found to persist at a deeper level (Van Agt et al, 2007). Teachers may not realise that this may be the case and assume other causes to be underpinning a child's difficulties.

A further reason for the hidden nature of language appears to lie in another human ability, that of masking personal difficulties in order to maintain an intact self-esteem. Snow (2013) discusses the repertoire of basic social scripts with which even the youngest linguistically vulnerable children can use to get by. Snow highlights the increasing use of avoidance techniques in interpersonal exchanges that require a verbal response. The child is attempting to divert attention in situations that put their verbal skills in the spotlight. Avoidance becomes less easy when written literacy becomes part of the expectation on the child. Children with milder language problems may not show signs of difficulty until they begin school and then difficulties begin to show in acquiring written literacy. Further difficulties for the child related to language may resurface in later years in school as the academic, verbal, and social demands become more complex. Older children can then find their early coping strategies becoming less appropriate. Unless the language needs of the child are identified and effectively targeted intervention put in place it is likely that they will continue with these unhelpful but familiar strategies. Non-compliant behaviour, poor motivation, or withdrawal may all mask the underlying language difficulties. For the teacher the language component of these concerns may then remain hidden and identification elusive.

There are also potentially confusing differences between the descriptors of SLCN used in Health and Education at levels of policy and practice. In Education the descriptions within the Code of Practice, whilst setting out to place SLCN within a clear framework, have actually served to add to the confusion for many teachers. This has been particularly unhelpful when attempting to place the needs of a child within a whole class context.

21

My challenges as an Educational Psychologist providing support for teachers through a research study

Educational Psychologists (EPs) have an accepted role within research, training, and the development of the workforce in Education (DfE, 2013). When we have reliable data we are in a better position to answer questions about whether the interventions and training models we develop in response to Bercow are indeed having the desired effect. However as practitioners we also need to understand how our interventions have been received by teachers. I saw my challenge as providing the LAMP screening tool, which I had developed 2 years before, to enable teachers to identify language need more accurately and also to find ways to understand what teachers had learnt over the time of my involvement. This was particularly relevant in relation to their levels of awareness, confidence, and skills in the identification of speech, language and communication concerns.

I planned a mixed methods approach which included feedback from participants to help me to understand what was difficult for teachers when assessing language need, and what would help them. I wanted to learn about any barriers teachers faced in this area during the study and to explore any reasons why teachers might continue to find this area of practice difficult even with the support of the LAMP screen. The 'voice' of the teachers and senior staff coming through the rich picture data helped to provide me with their explanations of patterns of scoring in screen 1 (S1) and screen 2 (S2). Without this input my conclusions would have lacked an important degree of validity. How would I have known what LAMP had meant to the school community? How else could I explore teacher's thinking on their experiences and ways to improve that experience?

The LAMP was used in its capacity as a universal screening tool. All the children in school were screened. This served an important purpose as it worked to prevent any previous bias held by staff concerning children's language function.

22

The repeated measures design of the study was also important as reflection is best thought of as a process and therefore needs time. By examining the LAMP screen concern scores collected by teachers twice in one year I was able to compare perceived levels of teacher concern for each child after the teacher's had a period of observation and reflection. The observed changes in scoring from S1 to S2 came after teachers were enabled to reflect upon their decisions made in February whilst observing children until the next screening in June. Had I used a single screening event as the basis of the study I would not have been able to capture the changes in scoring which were seen after a 5 month period of reflection using the conceptual framework of the LAMP.

A broad research hypothesis

Teachers need to be able to identify language difficulties effectively and I had developed the LAMP screen as an enabling tool that could help with that process. In the pilot study of the LAMP screen over a 2 year period I had witnessed an increase in teachers' awareness, skills, and confidence in the identification of speech, language, and communication concerns. I concluded that this had largely been achieved by looking through the framework of the 41 LAMP screen questions and reflecting on these in order to assess the children a second time later in the year. I believed that it was possible to support teachers to achieve a higher degree of accuracy and professional confidence in relation to the identification of SLCN by encouraging reflection on the LAMP screen questions and use of this information while observing children in the normal course of their day. My research hypothesis was centred upon this belief. I believed too that teachers and Senior Management would be aware of these perceptual; shifts and would be able to feed back their experiences as evidence of change.

The LAMP screening instrument used in the study

I developed the LAMP screen in 2005. Its first purpose is linguistic assessment and is intended to help teachers to achieve effective identification of language and communication need. The second purpose is to help teachers to target provision for children more effectively through using the results of the LAMP

screening.as a guide to the nature and levels of language need. The LAMP screen is an original tool which is intended to be used as a universal screening for all children in a Primary school. Even prior to use of the LAMP in this study I held an initial level of confidence in the validity and reliability of the screen I had developed drawn from the successful 2 year pilot in a City Primary school (Nash, 2008). The LAMP screen and the pilot study are described more fully in chapter 3 and appendix 13.

In the 2008 pilot study LAMP was reported by senior management and teachers to have had the effect of increasing teachers' awareness confidence and skills in identifying language need in the classroom. The LAMP screening procedure was seen as effective in supporting teachers' understanding of what was a language difficulty and what was not a language difficulty. The Head Teacher of the Pilot school had reported that conversations in the staffroom had changed to reflect a greater understanding of the links between language need and learning difficulties and vice versa. A clear picture of language need across the year groups became apparent in the LAMP pilot and this lent itself to more targeted interventions. Decisions regarding support were then targeted much more efficiently and effectively. It was reported to me that as a corollary of increased teacher awareness there had been a positive influence on the children's ability to access the curriculum and teachers' concerns therefore decreased markedly over the whole school. Subsequently I made revisions to the LAMP screen after the pilot study that strengthened its sensitivity as outlined in the methodology chapter below. I believed then that its use as a structured language screening tool would provide reliable indicators of levels of language concern when used by teachers in the 4 schools in this study.

Description of the LAMP screen

I had framed the 41 LAMP screen questions in terms of language behaviours the teacher can observe both in class and in the wider school community. The questions on the screen cover Expressive and Receptive Language, and Behaviour and Social Skills linked to language competency. Focusing and reflecting upon the questions on the screen while observing the children has the

enabling effect of sharpening teachers' understanding of the nature and incidence of concerns in those areas.

The importance of the universal nature of the LAMP screening

A key point within my research was to emphasise and promote the universal quality of the LAMP screen. Teachers are members of the learning community and it is helpful to provide them with a tool that will allow them to stand aside from their previous understandings in order to look with new eyes on the children with whom they work and learn on a daily basis over the school year. It was important that teachers looked at every child in their class using the framework of the screen. This was in order to ensure that any pre-conceptions and understandings brought to the screening by teachers had less impact upon the assessment of each child's level of need.

The LAMP was not to be used only for children who were thought to have a language difficulty prior to the study. It ensured that there was no need for selection of a sample of the population to be screened. Using the LAMP the teacher is encouraged to put aside any pre-conceived notions regarding each child, to observe behaviours and consider whether they arise from atypical language development. The teacher is encouraged to look past any previous understandings related to class, gender, culture, and prior performance.

The importance of whole school involvement

As an EP I concluded that isolated interventions would not have the impact of interventions that were embedded in and supported by the whole school. Neither would I learn about the effects a school ethos may have upon the research outcomes if I conducted a partial survey. LAMP allowed for whole school communities to be involved in screening. I enrolled 4 schools in the study in order to be able to make comparisons between these communities.

The ethos of a school-wide community can make a big difference to a child's ability to develop their communication skills (Communication Trust 2012). Increasingly a whole school approach is advocated for promoting an ethos in which each child's learning can be optimised. Leyden et al (2012) proposed

that it is important to have a whole school shared understanding about the importance of speech, language, and communication. Within this ethos teachers can access the necessary support to develop key skills of identification and support of language concerns.

LAMP can be used by teachers as a universal school wide assessment of need. This will not only provide a clearer picture of levels and nature of need but will also act to promote a strong communication friendly environment. In order to be able to support this wider awareness of the nature of language and communication needs it should be possible for the external support agencies to enter into joint discussions with the senior management team of a school regarding the way they have assessed language concerns as a whole school and to advise on intervention and support.

<u>The research plan</u>

My research plan was to ask teachers to complete the LAMP screen on the same children twice in one school year. This was so that their first observation would be supported by a second observation after a period of reflecting on the LAMP screen framework. Then, appealing to a mixed methods model of research, I would draw on rich picture data from teachers' reflections after S2 to interpret key patterns in the numerical data. This would provide a rich source of information for me on what teachers did and did not find helpful when using the LAMP in this study.

The definition of SLCN within this thesis

For the purposes of this thesis the term SLCN was used in a broad, inclusive sense to cover children with all forms of speech, language, and communication needs from whatever cause unless otherwise specified. This is used with the same meaning as the definition used by Bercow (2008) and that provided by Lindsay et al (2010) in the 'Better Communication Research Programme' report. Therefore it included the group of children coming into school with mild to severe language delays and those linked to reduced developmental opportunities in the home.

Widening the poverty based evidence regarding SLCN

Currently there is thinking that to accept a poverty based explanation of SLCN is to ignore new factors in today's society that can exert pressure on the developing language system. I wanted to ensure that every child was given equal consideration whatever their social economic circumstances. I also wanted to be in a position to make a contribution to an area in the research literature that is apparently relatively neglected. This concerns levels of linguistic vulnerability in areas of favourable socio-economic banding. In light of this I enrolled 2 schools from suburban areas with low deprivation in addition to 2 schools in inner city areas which attracted high social deprivation indices. I needed to justify my position with alternative views. I therefore added measures within the design of the study to explore potential factors that are held to have the ability to depress language development such as stress on families and increasing family mobility. These factors are discussed below as part of the literature review and described fully in appendix 14.

Establishing a robust evidence base

A further aim in the current Doctoral study was to help the schools to collate the information about children's language needs in a way that would enable them to establish and own a coherent and robust evidence base from which they could plan ongoing and future intervention. This was achieved initially by drawing the LAMP data down onto a spreadsheet showing each child's results within a class and whole school context (see appendix 12). I planned to be able to collate the key data in a coherent and easily understandable way that would move us all forward. The information displayed in this way would be valuable in a wider advisory capacity. This presentation of the data would make it easier for the school to share information with other Services such as the Advisors and the Speech and Language Therapists. After the first screening, 2 of the schools chose to also add the data to their school pupil tracker system. In this way they would have language and communication levels in a format where they could make comparisons with other assessments and also link to IEPs at a later date.

27

Conclusion

My central hypothesis underpinning this research study was that every teacher needs to be able to identify language difficulties. They need to be in a position to do so with accuracy and confidence. This study then became an exploration of whether the LAMP language screen that I had developed could be an 'enabling tool' that supports teachers to do this. The repeated measures design would give opportunity to teachers to reflect over a longer period on the language behaviour of the children in their classes. This would allow for changes in perception to develop around their understanding of the nature and presentation of SLCN.

I feel it is important to make one distinction. In this study children's language difficulties were categorised by the observed frequency of difficulty. I did not seek in this study to offer a diagnosis of any language disorder or specific language impairment (SLI).

Chapter 2 Review of the Research Literature

In order to be in a position to critically examine and understand the nature of the areas of study outlined above I have drawn on the literature from various disciplines and fields of enquiry to seek relevant information on the following:

- Ways in which linguistic development has been defined and described in research and practice in Education and Health, explanations of key aspects of language and communication development and the factors believed to be implicated in delay and difficulty. This included consideration of the reported impacts of socio economic variables and stress factors upon children's linguistic development linked to school performance.
- Evidence of low levels of teacher confidence and skills in the identification and support of children's language related needs.
- The potential that LAMP screening may have in the identification of language concerns and therefore support the aims of this study. This encompassed the potential for enabling teachers in the area of identification and support of language development.

The particular resources used to inspect the research literature.

I attempted to ensure that the review of the research remained pertinent to the core concepts under study. Central to the study was the practice of screening for language concerns in the Primary classroom at a class and/or whole school level. Although there are many and varied sources of information within the literature regarding developmental screening it proved difficult to follow the standard practice of conducting a systematic review of the literature. Almost without exception sources of information on the identification of SLCN proved to be related to specific pieces of research designed to respond to a particular issue and the context was mostly within the Health Service. This may not be unexpected as Speech and Language Technicians and Therapists reside mostly under the umbrella of health services worldwide.

Nor did I find detailed examination of the dynamics and practices involved in screening in a whole school context. There is literature about the Goodman Strengths and Difficulties Questionnaire screening assessment (Goodman, 2000) which is well known in the UK and used by parents and also teachers. But it is used on an individual basis and assesses mental health and not language function in an Educational context. I began to accept that the nature of the area under study would not be my subject if it was well documented.

After exploring these possibilities I widened the search term to bring in literature that would inform the understanding of social and personal concepts related to the study of language development that could be linked to screening. I found no tangible link to whole school screening of individual children in Primary schools.

I did find, in the process of searching the literature, research that provided opposing views on the so called 'verbal deprivation theory' that posits direct causal links between economic poverty to language difficulties. This area had become an additional factor in my research and it encouraged me to look more closely at the position for children in schools in differing areas of social and economic circumstances and to examine the poverty/language delay debate in the existing literature. This led to a decision to include schools in varied social contexts in the study. These wider searches of the available literature combined to extend, support, and inform the eventual research hypothesis.

Structure of the Literature search

I began with a critical review of the literature using a number of key sources obtained through the University of Exeter website. These databases offered abstracts and indexing of an international database and then if appropriate, point to a full text for more information. I found these particularly helpful: EBSCO EJS with Education Research Complete; ProQuest for Eric; plus Text Psych info which is a wide database of research hosted by the American Psychiatric Association, and Ingenta Connect. I supplemented these sources with a simple web-based search, signed up for Giga alerts on my subject and then followed up relevant citations to expand my literature search. Clearly this

has limitations: therefore I followed up references to articles or books which I accessed through the University libraries.

I found a rich field of exploration into the identification and support of SLCN in the research papers of the BCRP (Lindsay et al, 2010). I found a report by Dockrell et al (2012) on the development of an observational checklist for primary schools to gauge the language environment. This differed significantly from the LAMP, as it did not refer directly to individual children's skill bases but to teacher's contribution to providing a language rich environment.

I also sent email communications to the authors of pieces of literature if I felt they could hold key information. One email (Van Agt, 2012) was to a colleague in Holland where a general learning screening test had been conducted in one class in a primary school. The response provided me with another aspect of the evidence related to screening as a tool in the classroom. Other emails were to Dorothy Bishop (2012) regarding a new research study on language assessment and I received a helpful response which illuminated the current research position. I also found that the Children's Communication Checklist (2003) had not, to Bishop's knowledge, been used in a repeated measures design so no previous trends could be referred to the discussion.

Although a chaining search of the literature was used there is of course the chance that key or relevant articles may be missed but in real world research the ideal must at some point be sacrificed to the pragmatics of the situation despite concomitant frustration. I felt that as balanced a position as possible was achieved through my search of the available literature and this formed the basis of the themes and arguments raised and explored by the study.

What follows is organised around the inverted pyramid model. Within a critical discussion I reviewed the broad grounds from which the key themes were drawn. This included some background to the current theoretical perspectives on the nature of language and communication and what hinders its development in young children. It was not within the remit of this small scale research project to determine which events were causal but to consider the evidence provided by studies which measure a range of economic, sociological,

31

environmental, and biological markers that have been related to linguistic development. My attention was then focused upon areas central to this research study. Particularly relevant were those sources in the literature that indicated factors suspected of hindering the development of functional language in schools. This then extended the search to current levels of teacher awareness, skills, and knowledge and whole-school systems of support.

I then looked for research that presented arguments for or against the use of language screening to collect robust data on speech, language, and communication concerns across the classroom. It was a particularly complex field of enquiry and aspects of it continue to be relatively under explored in terms of the research literature and in national policy.

Explanations of the human abilities of communication and language

It was important to inspect theoretical models of language development when developing a tool that was designed to assess the vital components of language function. Although the study of linguistics provides technical explanations of language development at the level of phonetics and phonology, clearly, to accept this as the main definition of linguistic processes would be to severely limit our understanding of the key drivers of speech and language. The facility of language bestows on us far more than any merely technical description could hope to cover. Few of the sources I referred to sought to minimise the role that language plays in creating a place for the individual within their society.

Modern attempts to explain the human ability to develop language have been shaped by earlier theoretical models. These have included nativist, behavioural, learning, and social skills based theories. A nativist perspective proposes an innate 'language acquisition device' containing knowledge of grammatical rules (Chomsky, 1957: 1965: 1968a: 1968b; Skinner, 1957). The innateness hypothesis continues to be the subject of debate (Lewin, 1987; Chomsky and Otero, 2006). Moreover the overarching concept of innateness does little to help us to understand the impact of complex active social processes that we know are involved with language development. As a model it offers scant guidance for teachers in the classroom. I considered the main

32

weakness within the strong form of the nativist position to be the scant emphasis on social and environmental impacts on the development of language and meaning. Theorists have continued to challenge this lack of consideration of the complex impacts of social interaction (Vygotsky, 1978: 1985; Jackendoff and Pinker, 2005). Conversely, an extremely focused view of social impact was held by proponents of the Learning Theory model. Behaviourists such as Skinner (1957: 1982) and Becker and Epstein (1982) proposed that children learn and develop their communication from punishment and reinforcement, even vicariously from observation of caregivers' actions (Shaffer et al, 2002).

It is debatable that human processes of motivation could be reconciled with this model. It has been argued that the theory is one-dimensional (Barsky, 2007). Punishment can be effective for a short time, usually when the 'punisher' is present but this does not lead automatically to long term changes in thinking and behaviour. Indeed diametrically opposed behaviour may be the outcome (Grusek, 1992). What is needed here is a drawing together of aspects of the explanations of language, emotion, and behaviour in order to underline the complex dynamics within this amazing human ability.

I concur with Barsky's (2007) position that any theory is inherently flawed if it fails to account for the dynamic nature of the child's developing communicative competencies. The learning of language develops for individuals within dynamic social interactions. Boeckx (2009) described language and cognition as being engaged in a dynamic relationship that has a synergistic effect upon personal, emotional, linguistic, and social skills development. Therefore where there are underdeveloped language skills there is the potential for a negative impact upon personal achievement, social adjustment, and life chances. This gave support to my decision to include questions relating to children's social behaviours linked to communication skills in the LAMP screening tool used to collect data for the study.

33

Links between language, communicative competence and behaviour.

Vernes et al (2008) emphasised that as each child develops their linguistic competencies first within the family nexus and then in widening social communities a child's talk will become increasingly internalised alongside the prevalent social mores within their culture. Children can become increasingly able to cope with abstract moral and social concepts rather than solely concrete concepts. This aids the key development of communicative competence alongside community awareness. An acceptable working definition of communicative competence provided by Hargie (2006) is one of the underlying skills needed to use language, whether spoken, written, signed, or otherwise communicated, to interact with others in order to achieve a personal or social aim. Where a child's communicative competence is not established, robust links have been evidenced between the existence of pragmatic difficulties, and maintenance of social skills (Rice et al, 1998; Bishop and MacDonald, 2008).

Adamson-Macedo et al (2009) talk about the cyclical effect of negativity and frustration at not getting needs met. Adamson-Macedo suggested that if a child's language skills are under-developed it is reasonable to assume that this lack of confidence may impact even further on the use of language in social situations in the school setting and wider. Snow (2013) highlights the increasing use of avoidance techniques children can use in interpersonal exchanges that require a verbal response. Difficulties for the child initially related to language may resurface in later years in school as the academic, verbal, and social demands become more complex. Links have certainly been established between language delay and poor behavioural outcomes in school (Silva, McGee and Williams, 1983; Tomblin, 1997; Tomblin et al, 1997; Thomas, 2004; I Can, 2006) and this link becomes stronger at adolescence (Joffe, 2010).

This evidence base confirmed my original decision to include aspects of behaviour linked to language on the LAMP as an indicator of concern. The LAMP screen taps these important areas of development by including behaviours that highlight skill levels in social and behavioural aspects of

language function. These skills are key for the child entering the world of school where the ability to form positive relationships is of paramount importance and these demands increase in complexity through the years.

Confusions about the term SLCN in Service definitions

Before proceeding to the identification processes used for SLCN in schools it is important to examine conceptions of speech and language needs in a wider sense as understood by Local Authority and Health Services. The way SLCN is defined can differ within Education and Health and this can create barriers to cross agency understandings. Important distinctions have become blurred when the term SLCN is used. Confusions can arise as to the precise use of the term SLCN within different contexts (I Can, 2011) and between professionals within the same service (Bishop, 2010). The Health Services consult 2 main sources of reference which define deviant or impaired language and communication development. Both the DSM IV (American Psychiatric Association, 2000) and ICD 10 (2010) describe disorders of language and communication and provide descriptions of each category covering expressive, receptive, mixed receptive-expressive, speech, and communication disorders. The latter category is separated from other forms of communication difficulties that are related to intellectual disability, environmental deprivation leading to delay, sensory difficulties and other forms of communication disorders linked with autism (see DSM-V-TR criterion D) (American Psychiatric Association, 2013).

The term language disorder is used to describe an abnormal sequence of language development. The term specific language impairment (SLI) is used where it is necessary to indicate that language is the primary difficulty and is not due to delayed processes or co-morbidities with developmental disorders such as autism, or hearing difficulties (Marquardt and Gillam, 1999; World Health Organization, 1977: 1999; DSM 1V, 2000). Impairments and disorders of language function are seen to be the most resistant to intervention when compared with delay (Marquardt, 1999; Bishop 2000;). Disordered language is

35

more likely to result in adverse outcomes for the individual in the long term (RCSLT, 2010).

The International Classification of Diseases-10th edition (ICD-10) (World Health Organisation, 2010) employs a statistical definition of impairment that requires testing to indicate that a child's language skills fall more than 2 SD (standard deviations) below the mean, with language skills being at least one SD below the level of their observed non-verbal reasoning abilities. The Diagnostic and Statistical Manual of Mental Disorders-IV-TRb (DSM-IV-TR) (American Psychiatric Association, 2000) used similar but not identical criteria and subdivides SLI into 2 categories: expressive language disorder and expressive/receptive language disorder. This definition began to move to a joint positioning with education as it included a requirement that the language impairment is associated with substantial functional impairment apparent in the classroom for primary age children and that that there is a substantial discrepancy observed between their language and non-verbal reasoning abilities. However, there is no operational definition of the concept 'substantial' and therein lies the kernel of a problem for those attempting identification.

A procedural problem for Education posed by the Health Service definition of language impairment based on ICD 10 criterion is that it involves a requirement to assess in a particular way. In the medical based model, standardized cognitive assessment is needed to indicate the required statistical difference between nonverbal and verbal reasoning skills. Woods and Farrell (2006) point to an on-going debate among EPs about the place of the psychometric cognitive assessment of children as part of their psychological assessment. Woods and Farrell present evidence that EP practice within LAs varies, for instance, considerations such as problem formulation may be subsumed by local context or policy, rather than being led by their professional judgement. The pressures of conflicting demands can be many, not least the potential barrier for joint professional working between health and education colleagues. Furthermore, Fey, Long and Cleave (1994) had argued that for education purposes standardised assessment can contribute information but does not

necessarily identify the best form of intervention nor identify children who will benefit from intervention.

Bishop (2010) has also pointed to the wide and varied range of tools professional can use if they do decide to engage in a psychometric assessment. She raises concern regarding the variable results that can be the outcome. It is suspected that these confusions may result in significant under diagnosis in every area of the community (Bishop, 1994: 1997: Bishop and McDonald, 2008; Marquardt, 1999; Botting, 2001; Silliman, 2005; Vernes, 2008; Lindsay, 2008).

The revised version of the DSM manual, DSM-5 (American Psychiatric Association, 2013), has not addressed this but has been restructured, to now include 2 diagnostic categories: 'Language Disorders' and 'Speech Disorders'. These categories each contain descriptions of seven subtypes of language disorder which have been classified as neuro-developmental. Again there is a distinct separation between categories. This can obscure both milder language based difficulties observed within the classroom and the intricate connections between language, development, and learning.

In light of scant evidence of a consistent and in depth assessment strategy for SLCN of all types at local and national level it is highly probable that the figures we currently rely on actually disguise the true figures on what has been called a 'hidden disability' (I Can 2006).

Incidence, trends and recording systems for SLCN in Education

A significant number of children are reported to have SLCN. Children's needs fall into 2 main groups for classification purposes. One group is classified as having persistent needs and it is estimated that 10% of all children come under this heading as they have a long-term persistent SLCN, (I Can 2006). This figure includes children who have SLCN as a result of another condition such as autism, hearing impairment, general learning difficulties. Gillberg (1992) advised that it is important to realise that the incidence of co-morbidity of language delay with other pervasive developmental conditions is high in primary school children. This was supported by later research studies (Kadesjö, 2001;

37

Damon et al, 2006). I Can (2006) reported that SLCN is a feature central to and common across many areas of disability and special educational needs. An estimated 1% of children have the most severe and complex SLCN.

In the second classification group a transient need has been identified and it is hoped that, with the right support, these children with delayed language will be likely to catch up with peers. Law et al (1998) alerted us to the evidence that language delays are the most frequently observed in children up to the age of seven years and therefore many of these children will be in primary school. However the term 'language delay' cannot be simply described. Bishop (2010) warns the researcher that it is vital to view the term 'language delay' as an umbrella term that includes reference to a highly complex interaction of functions. This classification is estimated to apply to at least around 50% of children on school entry (I Can, 2006).

Recent research by Strand and Lindsay (2012) on SEN classification in the school census indicated that in the 6 years up to 2011 rates of identification of SLCN as a primary need had risen substantially. This was apparent for both School Action Plus and Statemented categories. Figures had risen nationally from 0.94% to 1.61% for SLCN. It was not felt by Strand and Lindsay (2012) that the drivers behind these increases were revealed in the school census. Many SLCN identified in the early years of primary school were reported to appear temporary and transient, with levels of identification at School Action Plus showing a substantial decrease from 2.7% in year one, to 0.6% in year seven. However these raised questions for me in terms of my earlier point that when we talk of SLCN being resolved we need to know what that actually means in practical terms. Van Agt (2007) and Roulstone (2011) would argue that some difficulties may appear to resolve but subtler ones may lie underneath. I would then propose that this more subtle process may not be so obvious to the class teacher and therefore remain undocumented. This has significant implications for teacher awareness in the identification process and adds to the complexity of identification.

Strand and Lindsay (2012) describe a strong social gradient for SLCN across all years with pupils entitled to FSM and living in more deprived neighbourhoods

being 2 to 3 times more likely to be classified as SLCN. However the number of pupils not in disadvantaged circumstances was not unsubstantial. Other findings were that boys were over-represented relative to girls 2.5:1 for SLCN. Ethnic disproportionality for SLCN was pronounced although this reduced when factors related to social disadvantage were taken into account.

A finding also was that birth season effects were strong for SLCN. Pupils who are summer born and therefore the youngest within the year group are 1.65 times more likely to have identified SLCN than autumn born pupils. This came to light after my statistical interrogation of my data. It is an area I wish to follow up in future analysis.

Although language is dynamic it is reasonable to assume that the way SLCN and other SEN categories are assessed will also have a significant impact on the final figures related to incidence. Questions have been asked regarding the ways in which the proportion of children identified as having SLCN varies over time and by age (Meschi et al, 2010). Lindsay (2010) identified that 3% of seven year olds who would be in year 2 in Primary school have been identified as having Speech, Language, and Communication Needs (SLCN) but then this figure drops to around 0.6% of 16 year olds (year 11). This is discussed more fully in the section below regarding classification at key stage changes, which can be related to difficulties in recording SLCN on the SEN register.

Lindsay has also asked whether different types of schools have different proportions of children identified as having SLCN and whether these students make different transitions in different school contexts.

Confusions related to the term SLCN in Education

The Communication Trust (2010) has highlighted terminology in the area of SLCN in Education as a source of 'unlimited confusion'. They have also criticised the official systems devised to classify and record different forms of SLCN for the purposes of educational provision as falling short. As seen above the DSM IV put dyslexia into a category with receptive language learning disabilities and this has changed with the newest revision. In educational terms

SLCN is now in a category with ASD communication (DFES SEN categories 2003), which is seen in DSM IV (American Psychiatric Association, 1994) as a co-morbid condition. Certainly SLCN can be linked with certain aspects of the condition of autism, for example language comprehension can be impaired but SLCN also has strong connections with literacy (Snowling, 2004: 2008) and this has not always been emphasised within this classification.

Conversely SLCN has been partnered with dyslexia in the Inclusion Development Programme roll out (DCSF, 2011). This comes with growing recognition in educational research that language difficulties underpin many of the observed problems in dyslexic individuals such as difficulties with phonological awareness, short term memory difficulties, sequencing abstract symbols in verbal and written forms of language and self-esteem issues (Snowling et al, 2003).

The term SLCN was used in the DFES SEN categories (2003) for the purposes of survey monitoring. The current banded categorisation of need for a Pupil Level Annual Schools Census (PLASC) can be criticised as being essentially confusing. The initial description of SLCN in the 2003 document included reference to markers for delay in speech, language, and communication. The 2004 revision re-banded SLCN with ASD (Autism Spectrum Disorder) and considerably shortened the description of difficulties so that it described disorder rather than delay.

From 2003, the submission of a PLASC return has been a statutory requirement under section 537a of the Education Act 1996. This requires schools to record and submit the level of pupil need and provision and allows Local Authorities to gather information regarding the numbers of pupils with different types of need. Problems arise because the term SLCN is used by the Department for Education to refer to pupils identified by their setting or school for whom language need is their *primary* difficulty and will have been recorded as such on the code of practice (DfES, 2005).

Looking at this system of tracking SLCN I would agree with the official position that it is not well placed to monitor and track the needs of upwards of 1 million

children in school in the UK with more general speech and language concerns (DfES, 2005).

Classification at key stage changes

As part of the post Bercow Review research, Meschi et al (2011) and Lindsay et al (2012) identified a lack of consistency in classification of primary need in education when children moved up a key stage. With some frequency the classification changed from SLCN to BESD (Behavioural, Emotional, and Social Difficulties) especially for older pupils. This could be interpreted in several ways. It could be due to reclassification of the primary need, due to a perceived lessening of language issues or a response to social issues becoming the most apparent need in which case the language need could be unchanged. The pupil responding with frustration to their difficulties in the classroom as the curriculum increases in complexity could be the major change. A similar shift in classification was to moderate learning difficulty where behavioural difficulties were not so apparent. Children with EAL tended to move out of the SLCN category as their command of the English language improved.

Having language concerns correctly classified and logged onto the official system is predicated upon the teacher and SENCO making informed decisions as to whether each child's language difficulty was their primary need or a need which was secondary to their other difficulties. Lindsay (2010) pointed out that as well as effectively excluding categories of mild but pervasive speech and language need from the official records, the formal system shows a lack of clarity in the descriptors of the nature and extent of language difficulty. This can make the needs of the child in school less clear for the teacher and therefore their interventions less effectively targeted. Confusions arise when practitioners are asked to decide whether SLCN is a primary problem or one that is secondary to other difficulties. Worryingly too, where it is deemed that language is not the primary difficulty then any language difficulties that are present might or might not be officially recorded on the SEN system.

How does this sit with a review in the UK (I Can, 2006) by a leading national charity which raised concern when it reported that many teachers nationwide

felt that they did not feel confident about making such decisions? Does the existing classification system contribute to this concern by our teacher workforce? I feel that it may be so.

Teacher knowledge and skills

There has been an on-going interest in documenting levels of teacher knowledge regarding identification and appropriate support for speech and language needs for a considerable time. Wells (1986) identified key skills available to teachers that, when used in classroom practice, promoted linguistic competency. These same key skills also provided a basis for the acquisition of literacy skills. It is cause for concern that almost thirty years later the literature reveals scant evidence that these and other proven effective strategies are being highlighted in training or employed in all classrooms: or if they are there, is no evidence that they are being monitored consistently across Local Authority provisions to provide evidence of impact. This together with the previous criticisms of the way SLCN is categorised in Education to the apparent under-identification of children with less obvious forms of language difficulty is likely to prevent many strategic attempts by teachers and SENCOs to rectify the situation.

As indicated above a national survey of teachers in 2001 by the then Department of Children, Schools, and Families (DCSF 2001) found that over half of the teaching workforce continued to feel a sense of confusion and also that they lacked the necessary awareness, confidence and skills to identify speech, language and communication needs effectively. There is continuing evidence that this has remained unchanged (Law et al, 2000; Bercow, 2008; I Can, 2006: 2011). A key recommendation from the Bercow report concerned the need to engage in up-skilling the teaching profession in order to develop their awareness, confidence, and skills in the identification and remediation of the many forms SLCN can take.

Signposting for SLCN is required for teachers

Primary Schools have been found to narrow the gap in attainment for vulnerable groups of children including those with linguistically vulnerabilities (Wood, 2008). We value our schools as providing support for children's language learning. The success of this is largely dependent upon the awareness of the teacher of what constitutes a language based problem, how it may look, and what impacts it may have. A sound base of knowledge regarding child development particularly in the area of language and communication is required to guide the accurate identification and framing of problem areas, the descriptions of the difficulties observed and the interventions chosen. It is clearly essential to ensure that teachers are supported to acquire the necessary knowledge and skills in the identification of speech, language and communication needs, and the confidence to act accordingly. This must include the ability to identify the mild but persistent SLCN which can predominate in the classroom otherwise there is concern that they can be overlooked or classed as part of a different area of difficulty (Lindsay, 2010). An example of this can be underlying language difficulties being classed as attentional or behavioural difficulties (Snow 2013).

I believe that there must be a structure that teachers can appeal to in order to signpost them to the successful identification of needs in all areas of SLCN. Effective signposting is important on at least 3 counts. Firstly teachers need to be able to identify children who have linguistic vulnerabilities, assess the level of need, and act accordingly. This may mean consideration of the need to position teacher dialogue in the classroom at a level which all pupils can access and give personal meaning. Secondly teachers may be required to provide additional support from the existing provision within school or a request for consultation and advice from other services for the child with significant on-going language needs. Finally it is vital for teachers to feel empowered to be able to analyse ways in which their teaching approaches can pre-empt difficulties for many children and ameliorate the impact for others. As Wells (1986) pointed out nearly 30 years ago, teachers can acquire skills that when

used in classroom practice, promote children's linguistic competency once difficulties have been correctly identified.

The skill base of teaching staff should be adequate to the task of identifying and supporting linguistically vulnerable children effectively whether inclusion in mainstream is intended or while waiting for specialist support and/or placement.

Effective Identification of particular speech language and communication needs

Both Health and Education Services are aware of how important it is to be able to evidence effectiveness in achieving better outcomes for children and young people. The first step in this is to identify the extent of the problem with some accuracy so that progress can be shown. It is important for identification purposes that teachers be clear about what constitutes a language difficulty or delay. As discussed, accurate identification of children's language and communication needs can present particular problems for teachers. Ripley and Yuill (2005) highlighted the high levels of behaviour problems that are found in boys with language impairment, particularly those with receptive language problems. The teachers' focus can tend to be upon the *effects* of SLCN such as frustration, withdrawal and anger rather than the underlying difficulty with language and communication. Camarata et al, (1988), in an early study, had found strong links between even mild delays in language and poor social behaviour. They reported that 71% of the pupils in the study aged 8–13 years having mild to moderate behavioural disorders had language scores between 1 and 2 standard deviations below the means for the normative sample. In the presence of disruptive behaviour in the classroom the language difficulties can be overlooked. This is something I have observed from my professional work with many schools and children.

Dockrell et al, (2012) emphasised that there is a particular concern for children with language comprehension problems. The child's responses to requests may be based on miscomprehension but can be misinterpreted as inappropriate behaviour rather than attributed to a root cause of failure to understand and follow instructions and requests. Difficulties arising from this can be interpreted

by the staff as stemming from emotional and behavioural difficulty and in addition referred to the Advisory Services as such. Focused observation over time may help to combat this. Ongoing screening by class teachers feeds naturally into a pattern of monitoring and can raise awareness of the true nature of problems. Available data can also help to identify gaps in provision and management of support throughout a school.

This next section outlines types of resources that have been made available to schools to help in the process of identification of speech and language need.

The checklist approach to identification versus universal LAMP screening

Checklists are available to teachers who may suspect that a child has a language-based problem and wants to explore this further. A checklist approach may signal a problem but should not be taken as a definitive assessment (Gillberg, 1992; Damon and Lerner, 2006; Bishop 2010). However this can provide the basis for confirming the nature of some of the difficulties a child is experiencing. There are many sources that provide checklists that set out the normal age related developmental milestones within speech, language, and communication (Locke, 1985; Afasic, 1995; Enderby and John, 1997; Locke and Ginsberg, 2003; Speake, 2003; I Can, 2008) against which a child's progress can be compared on a range of variables such as emotional development, language and communication and behaviour.

Checklists tend to be widely used in schools with the aim of providing intervention or accessing services. However these are all intended for individual or at the most small group screening. Recently Dockrell, Ricketts, and Lindsay (2012) developed an observational checklist for schools which had a different and wider emphasis that is the added factor of questions relating to the language environment and to teacher talk. This is a key development when looking at the promotion of language development and provision of a language rich environment. This wider brief is intended to supports the whole school ethos around speech, language, and communication.

What I believe is now needed to add to this approach is a detailed profile for each child in the school on entry and also at end of year in order to see how individual children and cohorts develop in their key language skills. There is currently a paucity of detailed whole class language screening material for the teacher of primary school aged children to use universally, i.e. for every child over a class or school. Due to the complex nature of SLCN this can mean that many difficulties are not picked up by teachers or are labelled as something other than language need. The LAMP screen appears to be in a unique position to overcome this. Once teachers are aware of a need it is then highly likely that they will use their existing knowledge to support that area of difficulty for the child. One of the strengths of the LAMP lies in the ability to use it as a universal screen where all children are screened in the year. This avoids pre-conceptions by the teacher, and encourages them to look with fresh eyes at each child in turn.

Poverty and failure to develop language competencies.

An area of potential bias could be that a teacher may make assumptions based on the socio economic circumstances of the child's family. This to me was a realistic supposition as much attention has continued to focus upon the impacts of low socio-economic status on the family and very little on other factors that decrease resilience and on the position for children from higher SES families.. Researchers from Walk (1994) to those involved in producing the Rowntree Report on poverty (Parekh, MacInnes and Kenway, 2010) have made clear statements about the negative impact of economic deprivation on family life in Britain. Evidence has continued to find links between language delay and economic deprivation in our society (RCSLT, 2013). The published literature reveals established links between low socio-economic status and difficulties in the early development of functional language and communication (Wells, 1986; Hart and Risley, 1995; McGinty, 2000; Law, Parkinson and Tamhe, 2000; Whiteley et al, 2007; Raffo et al, 2007; Allen, 2011). Furthermore linguistic competence and economic deprivation is evidenced as being implicated in underdeveloped literacy skills (Snowling and Stackhouse, 2005; Rose, 2006; I

Can, 2011). Poverty and deprivation are now used in Education as primary indicators of need as the basis for funding decisions.

Current arguments against the 'verbal deprivation theory'

While of course accepting that material deprivation can indeed have definite negative impacts on language development and academic success (Strand and Lindsay, 2012) I would contend that we need to examine other evidence before accepting the verbal deprivation theory in its entirety. If we do not then we may create a biased perception of the language needs of children based on their economic circumstances. Here the universal nature of the LAMP screen would be relevant.

I not only accept the argument that pressures linked to material poverty do not provide the only conditions for compromised language development, it is my strong belief that there are other important factors to consider independently of socio-economic deprivation factors. While many of the conclusions, based on the earlier research studies focused on a debate concerning risk factors and predispositions within a social and economic sub culture, others more recently have followed a debate on what they see as an incomplete correlation between educational attainment and poverty (Raffo et al, 2007; Lindsay, 2010). I began to search the literature for evidence that indicated that impoverished language development may not be confined to material and social deprivation.

I examined the survey of income poverty in UK households with below average income (HBAI) for the period referred to by the Bercow Report (2008). This is published by the British Government. In the period 2008 to 2009 in the UK 2.8 million children were recorded as living in poverty (Parekh, MacInnes and Kenway, 2010). A report from I Can, the national Speech, and Language Charity, in the same period informed us that 1.2 million children could be identified as having identified language needs. Therefore the maths add up to 1.6 million children reported by HBAI as living in poverty who are not reported by I Can as having a language need. Some of this discrepancy will be down to under reporting of language need but the number of children unaccounted for

provided the grounds for further investigation. Clearly the link between language development and low SES cannot always be assumed.

I turned then to the literature in a search for more information. How much of a problem do we have in families not challenged by economic circumstances? I looked for research papers on language development in high SES schools and families. When I turned to the research literature there was little to guide me in my search regarding linguistic outcomes for children from higher SES families. Certainly I found literature which described efforts to assess the extent of language difficulty within given populations, but predominantly these refer to research and screening projects within the early years. In the main such projects were tied to short term research programmes funded due to socio economic priorities. There was little regarding progression once the children from more affluent families entered school at rising 5 years of age.

I continued to try to ascertain whether there were research reports exploring common denominators for children from both high and low SES homes. It appeared that scant attention had been paid in the research to ascertaining whether children in high SES families are indeed continuing to achieve optimal language development through their early years and when they go on to formal schooling. I therefore could not appeal to a balanced research base to confirm or disconfirm my challenge to the verbal deprivation theory. I did however find papers which provided current information that provided me with a fresh look at potential underlying causes of language delay.

Consideration of children's individual responses to stress

Stress on the family has been seen as an important area to investigate. Therefore what I have been able to present as an evidence base has been extrapolated from various research fields and social commentaries on social pressures that can impact on family life. These factors are different in nature to economic deprivation but appear capable of producing an effect on the child's biology and developing language system that resemble the effects of poverty.

An underlying message drawn from a national study by the Rowntree Foundation (2010) was that research must address multiple aspects of children's lives as well as those related to impoverished social conditions. We must take into account the individual nature of each child's response to life experiences.

> *'Children from different backgrounds have diverse experiences and develop different attitudes, despite also having many things in common.'* (Parekh, MacInnes and Kenway, 2010).

Nunley (2006) draws our attention to within child factors linked to the particular neuro-physiological response systems. Where there is a high level of sensitivity and low resilience to stressors this will predispose the child to stress responses that depress learning skills in the broader sense. Nunley emphasises that it is not necessarily the level of stress within the environment that is the key but the child's sensitivity in responding to it anxiously or fearfully. Fearful responses can trigger the release of a chemical, TMT (trimethyltin) into the brain and this disrupts the working memory and reduces desire to explore new ideas and creatively solve problems, therefore seriously undermining the language acquisition process. Brain based research such as that of Bradley et al (2001) moved thinking further towards the understanding that an anxious emotional response actually creates biological obstacles to language learning. Neither researcher placed particular emphasis upon the socio economic circumstances of the child's family.

Stress and its potential impact on language development.

Recent research papers in the area of neuro-cognition raise some interests and challenges the previous assumptions. Researchers in neuro-biology such as Farah et al (2008) and Noble (2008) question whether we have sufficient information currently to generalize successfully about the neuro-cognitive correlates of socio-economic impact unless we can begin to describe a profile that includes the impact stress factors affecting modern lifestyles. Shonkoff, (2000) and others have begun to highlight the potential impact of a host of life experiences, not bounded by socio economic factors that can be considered as being capable of exerting stress upon the child's developing language system

49

(Noble and Bradford, 2000; Noble, 2008). Noble, Peterson and Jesso (2008) now suggest that that the current view of a poverty-disadvantage explanation as a necessary condition for SLCN is at very least contestable.

Research on increased population mobility and effects of change

Society has changed and life for parents has become subject to increasing pressures of time and demand (Palmer, 2006; Gershuny, 2011).

Pupil mobility, alongside family moves, involves changing school. Mobility has been defined by Ofsted as the total movement in and out of schools by pupils other than at the usual times of joining and leaving (Ofsted, 2002). It had been noted by Ofsted in 2002 that pupil mobility in primary school ranged from 0% to 84% of the school population in some areas of the UK albeit that children in disadvantaged areas have a higher levels of mobility recorded (Ofsted 2002).

Researchers studying a range of social topics in the late 1990s had reached conclusions about the unsettling effect of change on children. Children who did not change schools in Primary were found overall to achieve higher academic standards than those who moved school once or more (Pribish and Downy, 1999). The study does not differentiate between high SES and low SES status but does give a general picture of the potential for change for unsettling a child. This has been recognised by the Government in the document 'Managing Pupil Mobility' (DFES, 2003).

Chapter 3 The role of screening

Cummings (2009) commented on the responsibilities of the teacher in the management of SEN in the classroom. The effective identification and support for SLCN carries with it an increased need for knowledge and extended responsibility on the part of the teacher. In light of this it is promising that Cummings could point to an increase in the number of case studies and surveys that had begun to document assessment practices in schools related to language (Breen et al, 2001; Brindley, 2000; Colby-Kelly and Turner, 2007).

Regarding accurate identification of SLCN on an individual level, Cummings noted a tension between existing conventional language tests that describe individual proficiency levels in reference to normative standards and those that assess function in the classroom. The purpose of the first is to assess levels of ability with which to plan access to the curriculum. The second, Cummings points out, is assessment for learning, and intended to support the process of learning in wider contexts. Cummings agrees that we would be best served by moving the status and function of language assessment in the primary school system towards a more classroom based functional assessment of a child's levels of linguistic competency. Researchers such as Van Weerdenburg, Verhoeven and Van Balkom, (2006) would suggest that we need a dynamic approach to identification and intervention where compensating and restricting factors are considered. Some protocols lead more naturally to this and lead to comprehensive planning for intervention. Some, which would include screening, may not have such a clear-cut role.

Arguments for and against screening

Arguments that run counter to the use of screening suggest that the screening process may function as an indicator of a need for further investigation, but it is not a robust assessment such as that which might be provided by, say, a psychometric or curriculum assessment (Klee, 1998; Klee et al, 2000; Pickstone, Hannon and Fox, 2000; 2002). I take the position that although not diagnostic, screening can profitably be used to gather information which can

inform intervention as well as informing referrals for diagnostic purposes. Many researchers have supported their investigations by using screening. Despite limitations screening is used widely in health services, most often to determine whether to refer a child for more in-depth assessment (Rescorla, 1989; Klee, 2000; Law et al, 1998; 2000; 2000a; McGinty, 2000; Pickstone, Hannon and Fox, 2000; Mattson 2001; Stott et al, 2002; Gilliam, Meisels and Mayes, 2005; Van Agt et al, 2005; 2007).

Language screening can be used more widely in order to identify problems in a community at an early stage, thus enabling earlier intervention and management. Screening can provide value added by highlighting the areas of language and communication concerns a teacher needs to be aware of. In the current study the LAMP screen was provided to help teachers to identify children whose language needs potentially could otherwise be overlooked or misunderstood. The LAMP screen in this study also served as a professional development tool for teachers in the area of identification of speech, language and communication needs.

Potential difficulty can lie in the protocols of screening and must be addressed when used as a methodology for a research study. Pickstone, Hannon, and Fox (2000) emphasised the problems in identifying enough staff to screen the numbers of children who would need to be engaged in a larger study. In the majority of reported studies in the research literature screening processes have been implemented within the context of early year's education and child care within the Health Service. In such cases the child is not normally known to the person who conducts the screening.

Pickstone, Hannon, and Fox (2000) pointed out that screening requires a level of professional and personal skills and therefore has implications for staff training. Law (2000a) too advised that there must be a good grasp of the necessary skills on the part of the person undertaking screening. In the current study many of these difficulties did not arise. Teachers were assumed to have more than adequate skill to conduct screening within their classroom. Moreover each child was likely to have been well known to their teacher at the time of the screening. This was a methodological strength. The class teacher completed

the screening and knew the children. Teachers had taught the majority of the children over a period of 6 months prior to screening so this screening was not based upon a once off observation or information taken from a secondary source although it may have been checked with other sources for confirmation. The argument that teachers express themselves as uncertain about identifying language concerns is outweighed by the opportunities they had to observe the children over a school year and to reflect on those observations using the very clear questions in the LAMP framework.

The argument for universal screening by teachers

Perhaps no one professional is in a better position to use screening effectively than the class teacher. In my view strength in this current study lies in the way the LAMP screen is completed and by whom. Here the screen was to be used by professionals who were able to incorporate screening into an overall programme of surveillance of children over time. Teachers are in a privileged position being able to see the child in many different situations and gauge their responses. Within the current study it is suggested that the results will be of higher validity and reliability when decisions are based upon the professional expertise of teachers who work with the children on a daily basis over a school year and knows the children well. The teacher is also in an ideal position to use their observations of the children to form an opinion of where a cohort stands in relation to a range of language and communication skills. Once the descriptions of a range of potential language concerns are presented in a clear manner to the teacher via the LAMP screen questions they are in a position to use that description as a standard against which to judge language needs' present. I claim this is a particular strength of the methodological design of the present study.

Teachers' personal styles considered

As this was to be a repeated measures design it was important to look at any factors that could work to affect the first and second screen scores (S1 and S2). Teacher's personal style and understanding of the children's needs have been recognised in the research as a variable that can affect the screening process

(Marcosa, Miquel and Tillema; 2006). Examining different ways in which teachers approached assessment, Rheinberg (2000), described 2 main frames of reference used by teachers in his research when making assessment of pupil progress. Teachers appealed to either a social reference standard or an individual reference standard. This was explained by Rheinberg (2000) as one teacher comparing each child's improvement against that of their classmates while another teacher is comparing each child's progress individually with reference to their own performance history. The latter was seen by Rheinberg (2000) to be supportive of the position of low achieving students. In terms of screening this may impact of the level of progress scored for individual classes.

Teachers' professional frame of reference considered

As well as differences in reflective style there will be differences in each teacher's professional frame of reference. By frame of reference I propose the following definition:

> '*A structure of concepts, values, customs, views, etc., by means of which an individual or group perceives or evaluates data, communicates ideas, and regulates behaviour.*' (Dictionary.com, retrieved 4 August 2012).

Atherton (2013) proposes that in order to gain acceptance into a professional community it is obligatory to share a similar frame of reference to colleagues and that once acquired these joint views assume an essential part in guiding and forming that person's perceptual processes in their professional life and practice and will impact upon the ethos of the school.

The individual frame of reference may differ from colleague to colleague regarding the nature and role of communication in the classroom but awareness of the need to observe language function will be supported in the context of a whole school view. I needed to bear in mind that schools will differ in this view and this may be observable in the findings of the study.

Individual teacher styles of communication considered

The learning process in the classroom is an interactive process and it can be defined as both the acquisition of knowledge and participation in social

54

exchange (Wong and Sek Khin, 2000; Roulstone et al, 2011). Teachers in inclusive classrooms seek to orchestrate and scaffold the active participation in talk of all, including pupils with language learning difficulties (Law, 2000c). The differences in ethos and practice within individual classrooms may then be reflected in the LAMP screen scoring.

The role of the Educational Psychologist in supporting the screening process

It is a recognised part of the role of an Educational Psychologist (EP) to work systemically to support the workforce in Education to develop their skills, not least in the identification and support of speech, language, and communication need (Baxter and Frederickson, 2005; Lindsay, 2007). Increased understanding of the nature of SLCN can be provided for teachers by the EP through individual case work and whole school training and development work. However it is my experience that effective dissemination through individual work does not always transfer to other cases and whole school training does not necessarily lead to changes in practice. One way of responding to guidance as advocated by recent research papers (I Can, 2006; Bercow, 2008; Dockrell, Ricketts and Lindsay, 2012) is to suggest EP Services provide training in conducting whole school language screening procedures.

An essential element in embedding training, when looking to circumvent barriers to implementation is a personal commitment by staff members. The EP is in a position to offer support about change management and to act as a co-operative critical friend to the school when difficulties arise and motivation falters. Swaffield and MacBeath (2005) describe this as a role in which external agencies co-operate with schools to develop a common approach to evaluation. Both teachers and the Senior Management team can appreciate this aspect of the role of the EP.

School feedback for the LAMP pilot and subsequent revision

I had developed and then trialled the LAMP screening tool in a whole school 2 year pilot study before it was used in this Doctoral study. I reviewed and made

some revisions to the LAMP screen at the end of the pilot study involving a more definite scoring system and more teacher friendly language on the advice of an advisory working group I convened at the end of the pilot study (see appendix 13).

In the pilot study post evaluation school staff said that using the screen made them think differently about the importance and the nature of speech, language, and communication in the classroom. This had a positive impact on their identification of, and support of, SLCN. The process of using the screen drew the teachers' attention to the children who were giving tacit participation in lessons. These children were described in the screen as 'quiet and over spoken by others'. The feedback from the pilot study was that a surprising number of children fell into this category and later benefited from support whereas previously their needs had not been recognised as fully.

One of the findings from the pilot research project reported on by senior teachers was that the LAMP screening tool was felt to be a valuable intervention in itself. It was reported back that the process of screening had an up-skilling effect upon the teachers and teaching assistants. Teachers also expressed an increase in confidence when supporting children with speech and language difficulties. In tandem, there had been a significant decrease in the number of language deficits initially identified at the beginning of the study. It is true to say that project was rated highly by the staff and children in terms of effectiveness in developing a range of linguistic and communicative competencies (Nash, 2009 unpublished pilot study).

A question for me was whether this LAMP screening tool would prove its usefulness more widely in other schools not within the Excellence Cluster. This is by definition not classified by the Local Authority as areas of high social deprivation. The Excellence Cluster initiative aimed to increase attainment levels in the City's schools in the most economically deprived areas. In order to illuminate this I needed to ascertain the following information which would naturally form the basis of my research questions and underpin the research enquiry:

56

- Would use of the LAMP screen enable teachers to increase their awareness, confidence, and skills in the identification and support of SLCN?

- Would the universal nature of the LAMP screen be seen to operate well in any primary school regardless of social context?

- Would increased skills in the identification of language concerns have the effect of changing the number and nature of concerns teachers logged regarding children's speech and language needs in a second screening?

- Would use of the LAMP language screen provide robust evidence of patterns of SLCN across year/school cohorts?

- Could the LAMP screen be considered to have adequate levels of validity and reliability with which to support a research study at Doctoral level?

Chapter 4 Methodology and Design Features, including the Aims of the Research and the Research Questions

A key point to emphasise is that screening here was not intended as an assessment, nor was its purpose diagnostic. The overarching aim of the research was to help teachers to identify language difficulties and to increase their confidence in the process using LAMP as an enabling tool. The related aim was to use the LAMP universal screening survey to help schools to establish a baseline of speech, language and communication need from which intervention could be planned. From this came 3 aims with related research questions.

The aims of the Research and Research Questions

My aims for this study were:

1. To help teachers in the 4 schools to identify a range of speech and language needs and then to identify patterns of change in levels of teachers concern scores between the first and the second screening.
2. In order to further the interpretation of this data I planned to examine the experiences and perceptions of the teachers involved in using the LAMP tool.
3. To establish the quality of the LAMP screening tool to ensure that it was fit for purpose and would meet the need of the teachers to collect reliable valid data on the language needs of the children in their classes.

These aims gave rise to the 17 key research questions (RQs) that I have outlined below. 10 relate to the analysis of the data obtained from the screening, 3 explore the teachers' experience of using the LAMP screen. 4 of these RQs relate to investigating the robustness of the LAMP screening tool.

Aim 1: To examine key relationships in the screening data

RQ 1: What does the distribution of LAMP scores tell us about the impact of the LAMP screening on teacher identification of language need?

RQ 2: What is the incidence of language difficulties based on the data using various cut off points?

Then following on from this, the relationships between language concern scores on the LAMP screen and a range of factors were to be analysed;

What would analysis of the data show in the following areas?

RQ 3: What is the incidence of language difficulties based on analysis by gender?

RQ 4: What is the incidence of language difficulties based on analysis by year group?

RQ 5: What is the incidence of language difficulties based on identification of level of need (by Universal, School Action, School Action Plus, Statement)?

RQ 6: What is the incidence of language difficulties based on analysis by whether identified as having SLCN (on the SEN register)?

RQ 7: What is the incidence of language difficulties based on speaking and listening levels?

RQ 8: What is the incidence of language difficulties based on English as an additional language (EAL)?

RQ 9: What is the incidence of language difficulties based on the school designation of high or low deprivation status?

RQ 10: What is the incidence of language difficulties identified by analysis by children with/without free school meal entitlement (FSM).

Aim 2: To evaluate the experiences and perceptions of the teachers involved in using the LAMP

RQ 11: What were the experiences and perceptions of teachers regarding the practicality of using the LAMP screen?

RQ 12: How did the teachers evaluate the screen and its impact on their awareness, skills and confidence in the identification and support of pupils with speech and language difficulties?

RQ 13: To what extent did the teachers report any changes in their practice as a result of using the LAMP screen?

Aim 3: To assess quality of LAMP as a screening tool.

RQ 14: What level of internal reliability was established for the LAMP screen?

RQ 15: How reliable and consistent was the screening tool for use over a period of 5 months in this study?

15a. Reliability in terms of the relative position of pupils' functioning?

15b. Reliability in terms of changes in pupils' functioning levels?

RQ 16: What would be the factor structure of the LAMP screening tool?

RQ 17: How valid was the LAMP screens data in relation to an established parents' measure of speech and language functioning?

Methodological approach

The following section outlines the proposed methodology and the methods of investigation that enabled me to address these questions.

The initial design question for me was what did I need to draw from different research traditions? Numerical data is important to the project for the purpose of providing data which is open to refined levels of analysis and can show levels of movement and also any level of statistical significance within it. On the other hand qualitative data will help the researcher to shine the research light upon explanations that have validity for those involved in this research study. This data can be used to interpret patterns observed within the quantitative data. Thus this is an inquiry that will involve a mixed methods design (Brannen, 2004; Niglas, 2004; Bryman, 2006; Creswell and Plano Clark, 2007; Denzin, 2008).

There is fundamental disagreement amongst researchers as to the underlying wisdom of conceptualising research in education in an overly technical way (MacKenzie and Knipe, 2006; Cohen et al, 2007). While agreeing with Cohen that positivist methodologies do not necessarily provide us with ideal

knowledge, I do value having access to data that I can use to measure levels within the dataset. Quantitative analysis drawn from the LAMP concern scores provided a detailed overview of patterns of perceived language need within each classroom and for each child. However, I also felt it imperative to take into account the central tenet of interpretivism in that the study of social phenomena requires an understanding of the social worlds that people inhabit and within which they develop their understanding in their daily activities.

In the 1990s the philosophical movement, phenomenology had a pronounced influence on the conduct of research and was influential in the development of interpretivism (Ernest, 1994). Both philosophies advocate the necessity for considering the participants as active human beings who bring their interpretations, their perceptions and world views to the research. I could not conceptualize this research being other than person centered as at the heart of it are the teachers whom I wanted to support in their efforts to identify the often subtle language needs in their classes.

In this study the context was set within 4 primary schools in varied social contexts in a City in the South West of England and the research methodology needed to be capable of embracing the complex interactions within them. I felt strongly that a fixed design reliant solely upon statistical data would not be able to capture the changing picture within highly complex school contexts.

Thus this research was based upon a mixed methods design where quantitative data is provided which has the potential to describe and measure data. Explanations of how these patterns were linked to teacher's social constructions were drawn from qualitative data where I would attempted to understand the thinking, meaning, and intentions of the teachers as they applied themselves to the LAMP screening.

Thus this study is underpinned by an approach which is not committed solely to any one system of philosophy and reality. It therefore allows for the impact of particular contexts upon the truth of each situation. I needed to be cautious in that there would be an element of personal bias in my interpretation of the data, which could arguably weaken the reliability of the data somewhat as Bates

61

(2002) suggests. However I consider that this potential weakness is outweighed by the many positive gains from selecting a methodological approach that allowed me to capture a rich picture of the interaction within a complex social context.

Mixed methods research combines qualitative and quantitative data collection and data analysis within a single study (Johnson and Onwuegbuzie, 2004; Niglas, 2004; Plano Clark, 2005, 2011; Creswell et al. 2007; Tashakkori and Creswell, 2007). Niglas (2004) argued that in such a model acceptable data may be both quantitative and qualitative and gathered by varied methods. The overall research design encapsulates the quantitative and qualitative data strands and guides the conduct of the study as a whole.

It is widely accepted that every method has its limitations but careful integration of several methods may overcome individual limitations of any one method to some extent (Byrne, 2007). Whatever the polemic, regarding the underlying paradigm, mixed methodology research design has risen in popularity particularly in the field of Educational research. Bogdan et al (1998) described qualitative research as an alternative way of knowing the world suggesting that superior research can be the result of methodological pluralism when compared with the restrictions inherent within mono-method research. Certainly Molina-Azorin (2012) found that mixed methods journal articles tend to receive more citations than do single method articles thus indicating a growing acceptance and interest in this as a methodology.

It has been proposed that the greater flexibility afforded by use of qualitative data alongside quantitative gives opportunities for originality even if it is argued to be at the expense of some rigour. Creswell and Plano Clark (2007) would argue that rigour is not necessarily served by adhering strictly to Gold Standard research design within social contexts. Others have supported this stance a philosophical, scientific, and political shift toward an expanded view of what constitutes scientific evidence becomes apparent (Chwalisz, 2003). Davis (2007) cautioned that the interpretation of findings is a most important element in any research and whoever is responsible must be aware of potential bias. However, as long as this is taken seriously, Davis would appear to support the

position that qualitative data should be considered as acceptable evidence in scientific research in social contexts.

Two broad classifications are provided by Creswell et al (2003, in Byrne, 2006). They are multi-method design and mixed method design. The mixed method design of this study has been chosen to reflect my need to collect quantitative data to ascertain levels of language need across the schools in the study and rich data to help to explain or elaborate on this quantitative data. This is described by Tedlie and Takkashori (2003) as explanatory sequential research.

The design of the study and methods used

Methods in this study were implemented sequentially. Qualitative data collection was sequential and intended to be explanatory, adding richer detail to the study as described by Creswell (2002). Quantitative data from the use of the LAMP screening supported the main analyses. This type of mixed design allowed for added support from rich picture data for interpretation of the numerical data. The qualitative data can contextualise the statistical results as argued by Creswell (2011).

In the initial systematic survey phase, quantitative data was collected in a repeated measures design. The systematic survey was designed to run twice in the school year using the LAMP screening tool. At the end of each screening phase, in a separate but linked project, a semi-structured skills questionnaire was provided for the teachers. Finally, structured Focus group interviews were planned to include some of the teachers and SMT of each school. All 3 methods can be seen as projects in themselves that are designed to answer sub-questions related to the research hypothesis.

A general criticism of systematic surveys as a methodology approach lies in the potential difficulty in including an entire population in the survey due to practicalities and expense. It is usually expected that there will be a loss of data through non-returns. It then relies on the target sample being drawn from a representative sample of the larger group. However in this study the entire school population was to be open to screening. Every teacher in each of the

schools was to be engaged in the screening and the views of Senior Management were represented in each of the schools. The only children not included were those for whom parental permission was withheld and in the event only a few parents withheld permission. The collation and return of the data was monitored by the Senior Management in the school ensuring high returns. In the event there were some decisions to be made about data that did not meet the criteria for inclusion due to incomplete data sets, but the numbers in the main data set for the first screening remained high with a near 100% response rate.

Description of the local and school context

Local Authority context

In June 2010, the Office for National Statistics (ONS) estimated that the Unitary Authority within which the study is based had a population of 256,700 (2009). Because of its coastal location, the economy has traditionally been maritime, in particular the defence sector employing 12,000 people, and approximately 7,500 in the armed forces. The Local Authority has 68 Primary schools serving 18,702 pupils.

The 4 schools

(For a fuller description of the schools see appendix 2)

The population sample for this study comprises 600+ school age children and their teachers from 4 Primary schools that were approached and invited to take part in the study and who accepted the challenge. Ages extended from rising 5 to 11 years of age. Teachers in the schools covered a range of experience from a newly qualified teacher in his first year to highly experienced teachers.

I have anonymised the 4 schools calling them 'Cedar', 'Oak', 'Beech' and 'Willow'.

The Linguistic Assessment for Mapped Provision (LAMP) Screening Tool

(Please refer to Appendix 9 regarding the structure of the LAMP screen).

This was a methodology that involved the recording of observation. The entire underpinning of the LAMP screening process was predicated upon the individual judgments of the observer/teacher. It was therefore important to ask at the planning stage to what extent could the data be expected to capture the phenomena under study, and how reliable and how valid would the data be?

Strength in this study lay in the process where teachers completed the screens based on their observations of the children in their own class over a period of 5 months. Teachers are experienced in completing assessments for children and the LAMP screen process is similar in essence to this familiar process. Teachers in the study had many opportunities to observe children over a range of situations and were in a good position to comment on patterns of need. In this way the LAMP enabled teachers to observe and reflect upon language processes more closely.

Questions on the LAMP screen were related to the child's understanding of 'age appropriate' concepts and this was reliant on the teachers' interpretation. Herein lay the importance of accessing the class teacher's professional expertise in this area. By placing the teacher in a central position with regard to the completion of the screen for each child there is some assurance that results will be valid. Teachers are largely aware, in broad terms at least, what children in their class would be expected to achieve.

LAMP screening tool pilot and theoretical model

The origins of the LAMP screen as a data gathering tool for the present Doctoral study lay in previous collaborative research in practice. The pilot of the LAMP screen had been conducted in a Primary school in the City over a 2 year period in collaboration with the senior Management of the school and myself as an EP (Nash unpublished 2009). For a fuller description of this and the theoretical model upon which LAMP is based see appendix 13.

Design of the LAMP Screening Tool

I proposed that difficulties can be identified within 4 language scales, Expressive Language, Receptive Language, Behaviour linked to Language and finally Social Communication. These 4 broad areas of function form a framework around which effective identification protocols can be built.

There are 41 questions on the LAMP screen (appendix 9) related to the child's language and communication skill base framed around these 4 scales. The questions are used to determine the likelihood of a child having a difficulty within the 4 areas of language function as follows:

    I.   Expressive (12 questions)
    II.   Receptive, (12 questions)
    III.   Behaviour linked to language (10 questions)
    IV.   Social skills (7 questions)

The questions do not rely on broad based terms such as observing 'language skills' or 'communication skills' in the classroom. The descriptions set out by the questions are in terms of behavioural observation such as 'Does the child have difficulty in choosing vocabulary words?'

Identification of a difficulty was chosen in preference to asking if a child is able to achieve a particular task. The main reason for this decision was that it may be possible to monitor a child over a sustained period in a classroom situation and not see them complete an action. Whereas if a child is seen as being unable to complete a task or action in an expected time frame then this is observable in behaviour. In terms of teachers' practice this did not require additional assessments in order to complete the LAMP screen. Teachers used their professional judgement alongside their observations of the child covering one, 2 or 3 terms in their class. If, after a period of time, at a second screening the child was seen to become able to complete a task, or the difficulty no longer appeared to be underpinned by a language concern, then the original screen score could be amended to reflect this decrease in concern. Conversely if it

became apparent that a concern was actually language based, or was noted more frequently, the concern score would be increased.

Following the direction taken by the Communication Chain the questions in the LAMP screen began with questions related to expressive language skills. Teachers were asked to note problems with articulation, and phonology such as difficulty in producing sounds in words and sentences. This was followed by fluency, to see if the flow of speech was being interrupted. It then asked for the teacher to identify any difficulties within the child's ability to use working memory to recall ideas, formulate them, and structure them. This included questions related to difficulty in having ideas and deciding what to say, choosing vocabulary words and appropriate sentence structure. The LAMP questions moved on to the ability to use talk to express ideas clearly and without use of non-verbal cues e.g. using language for different functions, such as, asking, explaining and describing followed by talking without the need to use of gesture/non-verbal demonstration.

The next section of the LAMP screen tapped a wide range of skills related to receptive language including understanding and processing incoming language. Here questions related to observations of any difficulties in responding to part of a spoken instruction and also related to speed of processing incoming verbal information as a measure of receptive language ability.

Next the LAMP screen questions attempted to detect any problems in areas of behaviour related to speech, language, and communication needs. It was important to note that these are not the general 'behaviour difficulties' commonly understood in the classroom. The behaviours described in the LAMP screen are seen as distinct from social difficulties of an emotional nature underpinned by language need. These behaviours included difficulties in starting and completing tasks and taking part in situations where talking was involved. One exemplar given was that where language difficulties exist, there might not be evidence of use of language in play. Maybe the child consistently passes in Circle Time when it is their turn to contribute. Descriptions also included behaviours in which the links with language difficulty could be overlooked or mislabelled. It can happen that non-compliance with rules can be

67

traced back to difficulties with comprehension. Other related behavioural signs can be difficulties in concentrating. This could be observed as fidgeting, talking inappropriately, and hindering others. Where a child has limited understanding they will be hindered from taking in instructions presented verbally and also in many other ways related to talk. With an increased awareness, teachers should be more skilful in judging the basis of these behaviours.

The fourth area of the screen touched upon social skill performance in relation to language competence. Questions in this section tapped difficulties in initiating both non-verbal and verbal interaction with peers and adults. Further questions in the Social Skills section of the screen looked for information on the ability of the child to maintain relationships with peers and adults as this may well be an area which improves if language facility improves. The last question in this section asked if the child had difficulty in speaking out whether they are shy or over-spoken. In the trialling of the screen (Nash unpublished, 2009) this was found by the SMT to be the largest and most hidden cohort of children.

If we are to consider the dynamic nature of language as a key factor in children's thinking processes we must have some measure within our screen. Hence there was a question which asked if children have difficulty with using language for thinking. This was explained as being able to demonstrate an ability to talk themselves through the stages of a task.

Measuring Speech, Language and Communication concerns

It was important to include a measure of the severity a concern. The LAMP screen sought to tap key areas by asking if a child is observed to have any difficulty and if so, how often was this difficulty observed? When designing the scale for the Doctoral level of research a numerical value was assigned to teacher judgements at 4 levels and these levels were given a value label:

Table 1 Numerical values of Teachers' judgements

Frequency of difficulty	Value
No difficulty observed	0
Occasional difficulty	1
Frequent difficulty	2
Constant difficulty	3

68

The options for the teacher to choose are _never_, _sometimes_, _frequently_ and/or _constantly_ observed to have a difficulty. This assessment of the frequency helps to establish the level of severity of the difficulty that the child experiences. This will provide a pattern of concern for individual areas and sections on the screen as well as providing a total screen pattern of concerns.

Additional key variables

There were also sections on the LAMP screen for the teacher to complete to provide data on other key variables. There were details to identify the child, their age and year band. An overarching need for the class teacher was to ensure that the child had fully functioning hearing and did not need support in that area. Therefore this was a lead question on the screen that teachers should be able to answer or to investigate if there was any doubt in their mind. The options on this part of the screen were - confirm, negate or unknown. Then questions were included on literacy difficulties, speaking and listening level, free school meals uptake, SEN status and whether English was the child's first language.

As indicated in the introduction, the LAMP screen was intended to identify various kinds of SLCN, as described by Lindsay (2010), including mild to moderate delay from environmental and social causes. In order to gain a view about existing recording of SLCN on/not on the SEN register SEN status for each child, whether universal, school action, school action plus or statement was requested at the beginning of the screen.

Socio economic contexts

One of my additional interests related to the research was to test the universality of the LAMP in each school and over a set of schools within different social contexts. In order to achieve this I selected schools that reflected differences in socio-economic status (SES) as outlined by the Local Authority using national deprivation indices. RAISE online (Standards Site DCSF), and the Multiple Deprivation Index (MDI) were consulted to determine the overall SES status of the schools considered for inclusion in the study. I

also consulted the DfE (2010) IDACI (Income Deprivation Affecting Children Index) rank for the post code SOA areas (Super Output Areas) of each school. However I considered this to be a broad brush indicator as it is entirely possible for children in a school in a high SES area to have come from homes in a low SES area so is not a precise indicator of school population. I then referred to free school meals entitlement (fsm) in order to open up potential for analysis at the individual child level. The assumption underlying these deprivation indices is that poverty and deprivation in an area will have a negative impact upon factors underpinning academic performance. In this thesis, while not setting out to challenge this, I did question whether the development of children's language skills are negatively affected by other factors not related to economic deprivation. For a description of the indicators of economic status used in the study see appendix 14.

Methods used and organisation of input during the 10 phases of the research study.

The research was conducted over 10 phases during one academic year. These phases are described below.

Phase 1 Investigation of the LAMP screen as a robust screening tool

Establishing the internal reliability of the LAMP screening tool

The internal reliability for the 41 questions in LAMP screen was analysed using Cronbach's Alpha for the internal consistency of the 4 scales of the LAMP screen. Correlation between S1 and S2 data was used to check the re-test reliability of the LAMP screen results.

Establishing test re-test reliability of the LAMP screening instrument

The challenges of using a method such as a screening tool that is still in its research infancy are great. As pointed out by Miles and Huberman (1994) in their guide to employing a qualitative approach to a research question, a major consideration in adopting a reasonably novel approach is utilising methods that will stand up to academic scrutiny whilst retaining the underlying ethos.

In this study, the LAMP screening instrument was subjected to further scrutiny to ensure that an acceptable level of test-re-test reliability and longer term consistency was established. This was particularly important in a repeated measures design where the analysis relies most heavily on the results of the difference observed between each time the screen is completed. In this study short term test re-test reliability was established in a separate school not connected with the pilot project school or with the schools taking part in the doctoral research. Consistency was checked by inspection of the pattern of teacher performance.

Redesign of the LAMP on Pilot feedback for use in the current study

Researchers can never be entirely sure that they have reflected on or engaged with all the relevant issues within their research. Neither can they be sure that they have heard the authentic 'voice' of the people in the communities with which they engage in the course of an inquiry. I fully realised that as the researcher involved in the initial pilot of the LAMP screening tool, any conceptions I had then were likely to follow me and to re-appear in the planning and running a new study after the pilot study ended. I put into place some caveats and checks to ensure that at least this potential weakness had been acknowledged.

The first protection was that of re-evaluation of the original screen for descriptive validity in a working group of professionals who had trialled the LAMP screen. Teachers, TAs and the Community Speech and Language Therapist were involved in this collaborative group. We identified the need to tighten up numerical categories, make the LAMP screen language user friendly for teachers, and yet still provide the important elements to assess speech and language needs. From the deliberations of this group came the revised and re-worded LAMP screen. Initial pilot assessments had been made level of robustness of the revised LAMP screening tool, 24 months prior to the Doctoral research.

Validity check with parent/carers

A further check was an appeal to an existing standardised language checklist (Bishop, 2003) which was completed by both parent/carer and teacher in this study. Bishop (2008: 2010: 2011) suggests that even if the tools we select have adequate reliability, we may not consider them valid if they identify children who are not in fact giving cause for concern to both parents and teachers. Other studies (Cohen, 1989; Bishop, 2005) have found cases of children receiving clinical services who do not meet clinical criteria for SLCN due to this problem of mismatch within the validity of the results of testing. The lack of scrutiny in this area had given Bishop (2008) cause for concern. It was clearly imperative to make every attempt to check the validity of the LAMP screen results.

Bishop et al (2000) had reported that parent's responses in the Children's Communication Checklist (CCC) (Bishop, 2003) correlated well with those of teachers in a large percentage of cases. Due to this I made the decision to use the CCC in order to provide a check for the validity of our data using the LAMP screening tool.

The CCC (Bishop, 2003) is fully standardized on a UK population aged from 4 - 16 years and is designed to assess aspects of communication that are clinically important. The 70 item questionnaire is completed by a teacher or a care-giver. The checklist screens for communication problems in children who are able to speak in sentences, and who have English as a first language. It can be used to identify those who may benefit from more detailed assessment. Therefore in order to check the validity of the LAMP screening data the schools in the study invited 6 parents from each year group to complete a checklist. Parents were asked to complete the screen based on their knowledge of the child at home as a measure of validity.

However by the end of the project in July 2011, none of the schools had succeeded in engaging parents to complete the parent questionnaires. I extended the active data gathering stage of the study in order to work for 2 terms with another school that were willing to complete the LAMP screening over 3 classes in their school while using the LAMP screening instrument under

72

the same conditions as the initial 4 schools. The same ethical approach was used. The SENCO and 2 teachers in this school committed to screening all children in their classes in September of 2011 and the results were analysed by SPSS. The results have been reported in chapter 5.

Phase 2 Agreements with selected schools and first teacher skills questionnaire (1) completed

4 schools were identified within varied social contexts (appendix 2). The researcher finalised the agreements with the senior management of the schools (appendix 3 and 3.1: agreements, plan and timetable). The Head of each of the original schools enrolled in the study signed a formal agreement to continue with the research phases as agreed at an initial meeting with the researcher in the period between November 2009 and January 2010 (appendix 3.2 3.3 and 3.4). Thesis agreement forms are shown in appendix 3.4

The SMT of the schools agreed at this stage to send out letters to parents asking for their signed agreement for their child to take part in the study. Pre-prepared letters introducing the researcher and outlining the project were sent out to parents by the school on behalf of the researcher. Parents/carers were asked for their signed permission for their child to take part of the research (appendix 4: Letter to parents/carers describing the aims of the study and requesting involvement). An option was provided for parents/carers to indicate interest in completing the parent/carer questionnaire. The letter also asked if parents would be willing to complete a Communication Checklist Questionnaire (Bishop, 2003) for their child.

The SMT then gave out to teachers a skills questionnaire (1) which they were asked to complete before seeing the LAMP screen (appendix 5.1). This questionnaire related to teachers' levels of awareness and confidence in identifying and supporting speech and language needs of the children they taught. 18 teachers out of the total of 37 completed this first questionnaire, 10 teachers from Beech, 2 from Oak and 6 from Cedar. After the second screening this questionnaire with a retrospective element added (appendix 5.2) was completed by the same teachers.

73

Phase 3 - 2 training sessions prior to first LAMP Screening

Please refer to appendix 6 (Sequence of inputs to the 4 schools) and appendix 7: (Summary of procedures planned and procedures carried out) referring to the input to the 4 schools in the first and second screening.

I provided teachers with 2 twilight training sessions. The first was a general awareness raising presentation on the relevance of language development to learning. All the schools received this training session. In Beech support staff also attended with the teachers.

There then followed a second session in each school where the researcher supported teachers to fill in the first 3 LAMP screens (paper version) for children in their classes (see appendix 9 for the LAMP screen). At this session the teachers were talked through the LAMP screen questions by the researcher and immediate questions answered. It was stressed by the researcher that it was key to the screening process to note the heading on the screen that began '*Does the child have **difficulty** in*' *the areas of language described by the LAMP screen.* It was explained that when scoring the children on these questions that the teachers could choose one of the 4 levels of observed difficulty and allocate a score between 0 and 3 as follows:

0 *never*

1 *sometimes*

2 *frequently*

3 *constantly*.

There was a discussion with the staff of the schools, led by the researcher about what these terms meant in practice. This was intended to support moderation of scoring in the schools in relation to judging the frequency of any observed difficulty.

The teachers were then asked to think about children in their class and to identify 1 child with no language difficulties, 1 with moderate language

74

difficulties, and 1 child who had frequent difficulties. After being given time to reflect on this teachers were asked to complete a LAMP screen for each of these 3 children. When the teachers had done this there was a discussion about how this procedure had felt and opportunity was given to teachers to raise any problems or queries regarding the LAMP screen questions or the process of completing the screen. The researcher provided each school with a written description of this process (appendix 3) as a reminder for SMT if questions arose in school after the session. Cedar, Oak and Beech schools received this training from the researcher and Willow from the SENCO who had discussed the session content with the researcher.

Phase 4 Screen 1 - LAMP screening in the 4 schools

After they had experienced the 2 training sessions every teacher in the 4 schools completed the LAMP screen for every child in their class for whom parental agreement had been given. The whole school screening in each school took place over a 2 week period. There had been no direction from the researcher regarding the manner in which the screen should be completed, i.e. with further staff discussion or individually, in paper or electronic format. Teachers in Oak, Cedar, and Willow elected to complete paper versions of the screen individually for each child, while Beech chose to do this electronically and as a whole staff session initially using the IT suite. Teachers then went back to observe children they had not got a clear idea about and completed their profile as their needs became more apparent to the teacher observing them.

The data from this screening was collected by the researcher for analysis and presented on an Excel spread sheet (appendix 12).

Phase 5 Feedback of global outcomes of Screen 1 to SMT of each school

This phase began after the first LAMP screening was completed and ended 2 months before the beginning of the second screening. During this period the researcher met with the SMT of each of the 4 schools. The SMTs were shown

the Excel sheet with their schools data and further informed about factors relating to the data analysis. These factors were:

- The question that had the highest numerical concern score rating in each of the 4 scales of the LAMP - Expressive, Receptive, Behaviour, Social Skills.
- The question in each of the 4 scales that had the most _constant_ difficulty scores.

It was understood that individual child and class level scores from S1 and individual teacher ratings were not to be shared with teachers at this stage of the research. Any changes made in school arising from the information discussed at that meeting would be directed by the Head and SENCO at a whole school level and would not be discussed until after the final Focus group. However the SENCO and Head Teacher were in possession of all the data relating to children in their school and would have been in a position to plan appropriate intervention and support. No individual cases were reported as a new concern to me as researcher in the course of the study.

The 5 month phase between screenings S1 and S2 gave teachers time and opportunity to observe the needs of the children in their class. After S1 teachers had the opportunity to observe whilst keeping the framework of the 41 LAMP screen questions in mind. These gave clear descriptions of behaviours that could be linked to speech, language, and communication difficulties in the classroom. This first experience of using the LAMP screen with each pupil then served as a framework for on-going observation and on-going identification of speech and language difficulties.

Phase 6 The second LAMP screening: 5 months after the first LAMP screening

This phase began in the summer term 5 months after the first screening. Each teacher completed the LAMP screen for the children in their class a second time to record again their judgements as to whether children had difficulty with areas of Expressive, Receptive, Behaviour or Social aspects of language and if so at

what level of frequency. It was not expected that teachers would have sight of the results of the first screening for individual children prior to completing S2. This information was held by the SMT of each school.

Phase 7 Teachers repeat the skills questionnaire (2)

After the second LAMP screening had been completed and collected in by SMT in July, teachers were asked to repeat a post study skills questionnaire (see appendix 5.2: Self-Rating Questionnaire for Teachers (2)), post screening and intervention and retrospective LAMP Screening. This second questionnaire had essentially the same structure and content as the first questionnaire but had an additional retrospective element. The questionnaire now consisted of 2 parts. The first part asked for teachers to make judgements on their own current levels of awareness, confidence, and skills. The second part asked for teachers to make a judgement retrospectively looking back to their situation at the beginning of the project as they now saw it. Again the same 18 teachers completed this.

Phase 8 Focus group

Choice of method

Over the last 15 years, researchers in the field of Social Science have increasingly used group discussion as a method for collecting rich picture data. I decided upon this as a method because it could stimulate and capture the thinking of participants within a professional discussion. Alongside this I considered the pros and cons of incorporating this into my design.

How issues are presented in discussion groups varies. In some models the topics are introduced and questions arise following the course of the group discussion in others a pre prepared question format is used (Smithson 2000, Morgan, 1997). I planned a structured input where my pre-prepared questions were to be used. I chose this model in order to focus discussion upon the essential elements of the research questions.

I planned to use the term 'focus groups' but when I looked to the literature I found that definitions of focus groups have varied (Powell et al 1996; Morgan 1997). The definition of a focus group as argued by Kitzinger and Barbour (1999) to have been confused by the proliferation of focus group methods that have been used since the 1960s. However they argued that any group could be appropriately named a focus group as long as the researcher is actively encouraging of, and attentive to, the group interaction. Although this method has limitations, it does have the potential to capture information about the variety of issues experienced by the community under study (Linhorst, 2002). In this spirit I took the decision to use this method and to call the groups used within these study focus groups.

I considered the potential for confounding factors in my study such as the impact of the opinion expressed by others affecting personal disclosure (Farquhar and Das 1999). Individual questionnaires were provided for teachers prior to the first screening in order to capture their views. In any culture there will be norms regarding what can and cannot be made explicit (Farquhar and Das, 1999). Support from the head of the organization is important in allowing group members a certain freedom to discuss experiences with a degree of openness. Therefore it was important that senior management explained the purpose of the discussion prior to asking for staff involvement.

Connaway (1996) agreed that focus groups can support a robust needs assessment and community analysis. In a more recent publication Connaway and Powell (2010) have suggested focus groups as a suitable method to develop and refine research instruments. This supported another important aim of the current investigation, which was to collect information that would be used to improve the LAMP screening tool and the experience of users.

Composition of the focus groups

The Head Teacher of each school was asked to make the initial decisions regarding the availability of staff and to choose the members of the group. A date was arranged with each school for me to visit with 2 observers.

Cedar provided time from the Head and the SENCo. Beech was unable to involve the SENCo as she had been absent but the Head was happy to be interviewed. Willow arranged time for the SENCo with a newly qualified teacher and an experienced Reception teacher. Oak was unable to provide the additional time due to demands on staff. The planned groups therefore differed in their composition with Beech being essentially an interview using the same question format as was used in the other schools.

The low numbers of participants from each school group meant that the cross-school view was limited in its span. Such limiting factors would have made this method unsuitable as the main method of data gathering within the study, but as a method of supplementing the main body of data I could see many benefits. Senior management could provide an overview of the process while teachers could tell me how it had felt for them to complete the LAMP screen for the children in their classes.

Developing questions

The development of relevant questions for the focus groups was determined by the purpose of the research, i.e. to help teachers to become more skilled in identifying children's language need and to collect information on the impact of the LAMP screening instrument. The questions I chose covered the range of data I required to illuminate the teacher's experience of using the LAMP. An open question at the end was intended to capture any further thoughts that had been generated by the discussion but not expressed.

The sequence and presentation of the questions was important to the smooth running of the process as were issues such as timing and language used. The questions I chose were framed in the language that would normally be used by staff in school. The main focus was not necessarily problem solving. Certainly I needed to take heed of any barriers teachers experienced but my role was to listen to these and how they had resolved them.

Recording the discussions

I introduced 2 research assistants from the Psychology Service as non-participatory observers and note takers. The role of the observers was to take contemporaneous notes of the discussion to ensure that the points raised by the group had all been recorded. I also highlighted and noted key points as they arose and after the sessions I brought these 3 sources of data together into one record. I had taken the decision not to tape record the meeting due to the time demands that transcription would have on my Service time.

Phase 9 Research integration and data analysis

I collated the data from all sources. Quantitative and qualitative rich picture data was analysed in relation to the research questions. Initial screening data was expressed in percentages. Statistical comparison was then made using Multiple Analyses of Variance (Manova) using the SPSS statistical package. The teacher questionnaire was analysed using mean percentage. The Focus group responses were analysed by theme and relevance to the RQs.

The data analysis based on the original 4 categories of frequency: _never, sometimes, frequently, constantly_ were used for the main body of the analysis in this study. I believed that a significant part of the value in the study lay in calculating the level and number of the mild delays which teachers may understand as typical in their experience. The use of these 4 broad categories allowed me to access the milder difficulties, less frequently observed in the classroom. These difficulties may still impact negatively on a child's personal, social, and academic progress (Lindsay, 2010). The hope was that using the LAMP would make teachers more aware of these subtler difficulties.

I wanted to be able to analyse the screening data from the teachers from different perspectives using varied cut-off points. So for checking purposes individual LAMP concern scores were recoded. This changed from the original 4 categories of frequency of concern to the following 3 point scale:

Table 2 Re-coded frequency values of Teacher's judgements

Level of difficulty	Values
Mild/typical problems identified	0
Moderate difficulties noted	1
Significant difficulties noted	2

Using frequency data a point was defined by a conventional cut-off. This gave an estimate of levels of children's concern scores high to low. The mean score for each pupil was calculated and then the number of pupils within the 3 bands _mild_/_typical_, _moderate_, and _severe_ in each school was calculated. The outcomes could then be attributed to 3 cells instead of the original 4. The cut off points for S1 and S2 individual concern scores (range 0–2) were thus changed. These recoded categories were based on cut off points in the frequency data at the 80th and 90th centiles. There were large numbers of children's scores in the _never_ a concern category which attracted a score of zero. Due to this, the 80th centile was chosen as the cut off point for moderate concerns and 90th centile for severe concerns.

However, the band labelled as _mild/typical_ can still contain those mild but enduring difficulties that can present on-going problems for the child. Therefore this banding system was reserved for checking and comparison purposes only as already outlined above.

Descriptive data

<u>Teacher skills Questionnaire</u>

Dynarski, (2010) emphasises the importance of reflective practice by teachers. However this has been seen to remain under-developed in Education (Dynarski, 2010; Wong and Sek Khin, 2010). Within this research project teachers and senior staff were encouraged to reflect on their practice.

A Likert style questionnaire for teaching staff was constructed by the researcher for the purposes of this study (appendices 5.1 and 5.2). These questionnaires encouraged teachers to reflect upon their current skill base. It asked about

attitudes, confidence, and skills in identifying and supporting SLCN in the classroom. Teachers were asked to rate questions assessing their strength of agreement on a range of questions. This included disposition, knowledge, and skills in the area of SLCN: The questions covered the following areas:

- Awareness
- Identification
- Ability to make adjustments
- Planning activities for individual children
- Planning group sessions
- Resourcing
- Awareness of own practice
- Engaging parents as partners
- Awareness of school-wide provision

Rating levels were provided on a nine point scale rising from: 1) not confident through to 9) very confident. This questionnaire (1) was completed by teachers prior to S1 in February. After S2 in July, teachers were asked to complete a second questionnaire (2). The format of this post study questionnaire differed from the first in that included a retrospective element. Teachers were asked to rate themselves on their levels of confidence and skill after S2. They were asked to compare this to the judgements they had made on the first questionnaire at the beginning of the study. This was in order to judge whether teachers' initial rating had been accurate.

Questionnaires about respondent's levels of knowledge and skills can sometimes be filled in ambitiously at first. Then when the respondent realises how much there really was to learn, scoring on a repeated questionnaire can be lower or equal to the first scoring. This seems to show little or no progress in awareness and skills when in fact it may not picking up a great deal of forward movement. Luft and Ingham (1955) explored the idea of bringing to consciousness aspects that are unknown to us prior to experiencing them. For example a practitioner may express a high level of knowledge about a particular aspect of classroom practice, but having had more training and experience may then realise how limited their initial knowledge base had initially been. I accept

that there are caveats around the potential of false memory when attempting to recall how an individual felt at a particular time from a position of extended knowledge (Finkel and McGue,1993; Shachar et al, 2007) but Luft's was an important point and one I wanted to include. By including a retrospective element in the questionnaire in this study I hoped to be able to make a more accurate comparison of teacher's self-perceptions before and after the study.

Although screening and rating scales can provide numerical data it is only as accurate as the perceptions of the person completing it. In this study the methodological robustness lies within accessing the perceptions of as many different stakeholders as we realistically can in the time scale and using the ensuing data to cross check with other information from the systematic screening results and from the rich picture data accessed through Focus group discussions.

The descriptive data from the teacher skills questionnaires pre, post, and retrospective was analysed in mean percentages and presented in tables. This data was used in an attempt to explain patterns of changes in teacher's awareness of SLCN in their classrooms.

How the Focus Groups' data was analysed.

I checked the 3 sets of handwritten field notes and they were typed up. I then analysed these notes with a thematic approach. An important part of the process for me was that analysis was not linear. As suggested by Ritchie & Spencer (1994) one part of the process overlaps with another in an analytic framework. Analysis of the structured Focus group data was through a thematic approach which linked comments made by participants to general themes within the study. This data can provide a richer picture of the impact of the research (Fereday, Muir-Cochrane, 2006; Thomas and Harden, 2007; Gregory et al, 2012. As I worked through each of the responses to my questions I explored them to see if they contained multiple perspectives that could be recorded. I searched for emerging themes by question then went back to analyze the content overall. The broad themes related to the responses to questions and sub themes emerged in the course of the conversation. They were linked to

emerging thoughts and perceptions from the group members arising from their consideration of the questions. This analysis is presented in appendix 11. The final stage of analysis, mapping and interpreting, is viewed by Rabie (2004) as requiring skills of imagination and analytic thinking in order to make sense of both the individual quotes, and the relationship between the data as a whole.

'Wicked Problems'

I considered it useful to acknowledge the possibility of 'wicked problems' related to the design of the screening tool that supports this research. Rittel and Webber (1973) coined the term 'wicked problems' in the context of problems of social policy where purely rational approaches cannot be applied and therefore the problem is never solved definitively. Brown, Harris and Russell (2010) explain further that design problems can be typically 'wicked' because they are often ill and involved stakeholders with different perspectives, and have no "right" answer or solution. Thus 'wicked problems' cannot be solved by the application of standard methods and they demand creative solutions. Moreover, because of complex interdependencies, the effort to solve one aspect of a 'wicked problem' may reveal or create other.

2 such problems arose in the process of designing the LAMP screen. One centred on my concern that once the research phase had ended, the schools would not have access to analysis of the on-going data if they wished to continue to use the LAMP screen. The second related to the numerical weighting attached to the teachers' scores of concern.

The first difficulty was not as wicked as it first appeared and was resolved in an elegant way by the Head of Beech School. The Head computerised the questions from the LAMP screen, staff completed the screens on laptops, and then this data was transferred to the school's tracker system. This not only overcame the difficulty of continuing access to the data, it also allowed for swift comparison of many new and existing variables. This included language levels by gender, age, class, key stage. It would enable the school to break the data down to cross link with particular areas after the study ended. This was thought by the Head Teacher to be an excellent facility providing, as it did, easily

84

accessible information on aspects of need and groupings within the school. Subsequently one of the other schools decided to follow this system.

The second problem remains more resistant to solutions and appears to have the classic nature of a 'wicked problem'. There is complex interdependency within it which means that my efforts to solve one aspect of the problem reveals or creates other problems. The facts are these; when designing the LAMP scale the frequency of difficulty was given a numerical value. However it is vital that the pattern of scoring is considered when allocating needs to categories of severity. To clarify this, a child who is scored as having a difficulty *sometimes* in nine questions on the screen will have a total difficulty score of nine points but not be seen necessarily to have a serious problem. A child who is scored as *constantly* had a difficulty in 3 areas of the screen may well have a significant problem but in terms of concern scores will have the same score (3 x 3) as the previous child. Yet the 2 cases are not comparable in terms of the levels of concern.

Different conceptions can abound regarding how to apply weightings in order to achieve a picture that is truer to reality as the child experiences it. Although there is no complete answer without the use of statistical weightings I have considered ways to overcome the problem that will be right for this particular study. When calculating high LAMP scores for comparison with the GCC (Bishop, 2003) I chose cut off points at a level that would signal significant language difficulties even if it were made up of 1 (sometimes) and 2 (frequent) scores. This was banded in terms of severity of concern based on frequency calculations. The re-coded banding was based on individual scores of concern. In this way calculating a mean score 0 – 3 for a child could give some broad indication of the level of need.

As indicated above there is often no one right answer to a 'wicked problem' however I found my own particular answer that was right for this research study. It would require further in depth consideration regarding a weighted statistical model if the LAMP screen results was to be refined for standardisation purposes.

85

Phase 10 Validity check by Children's Communication Checklist

During the first term of the following academic year a separate primary school carried out LAMP screening in 3 classes. The same protocols were used as in the main study. Parent/carer perceptions were collected for comparison with teacher observations. The Children's Communication Checklist (Bishop, 2003) was used for this purpose. This was a standardised published parent's measure.

Ethical issues

An important area regarding this research involved the ethics of the conduct of the systematic survey. Parents of children in the 4 schools in this study were provided with sufficient information to gain a reasonable understanding of the field of research, the purpose of this project in particular and of any likely consequences of their child's participation (appendix 4). In order to gain free consent to participation the information was given in a form that could be understood by the informant (Nesh, 2006). Parents were reassured that there were no known or anticipated risks to participation in this study. In addition it was stated on the letter for parents that the researcher had the support of the Head Teacher at each child's school and that the study had been approved by the Senior Management team of the City Psychology Service. It was emphasised that the final decision about participation lay with the parent/carer of each child and that only children who had written parental permission would be involved in the study. Also it was made clear that children or parents could withdraw their permission at any time during the study without any consequence by indicating this decision to the researcher. 2 parents elected to do this at school level and their children were not included in the study.

All parents were given opportunities by their child's school to consult with the staff regarding any questions they may have relating to their child's involvement in the study. The letter to parent/carer gave contact details of the researcher. One parent telephoned me and we discussed the information more fully. This then parent elected to give her permission for her child to remain in the study.

86

Parents were informed by the letter that we hoped that our project would help us to understand more about children's development regarding important language skills. Children were not going to be directly involved in the data collection; it would be the teachers who completed the LAMP screen for the children in their class. Each class teacher would use a one page language skills screen to assess whether children in their class experience any speech, language, and communication needs. Some children would have needs and others would not. There was consultation within the school regarding support for any difficulties identified.

All children's results were considered confidential and individual children's names would be known only by the school staff. The researcher would only have coded information and would not know the names of the children.

The written permission slips were collated by the senior management team who alerted the researcher to any refusals and would not include data for any child for whom parents have declined permission.

All data relating to children was be coded and anonymised and would remain so in the write up and dissemination of the data. Schools and school staff would not be identified by name. However as it would be possible to surmise by year group taught teachers would be made aware of this in the initial briefing by the SMT. As part of the initial discussions with the Head and Governors the researcher attempted to clarify any areas of a sensitive nature that could have arisen in relation to any of the schools.

The senior management of each school had complete access and subsequent ownership of the data collated on the first screening alongside opportunities for discussion with the researcher. Should a case have arisen where a child's need was identified for the first time or was considered to be more severe than previously recorded then the Head Teacher SENCO would have been in a position to make decisions on intervention at an appropriate level.

It was borne in mind that to be ethically sound there must be a consideration of the impact of any research upon the community under study. All reasonable efforts made in discussion with the academic tutor to ensure that the equilibrium

of participants remained intact. To this end it would not have seemed appropriate to ask searching questions of individual families regarding SES and therefore the existing data was deemed sufficient for the purpose of this research.

The information above on the planned procedure was submitted to the University of Exeter for ethical clearance for this research project (appendix 1 Ethics Clearance Letter) and this clearance was granted for this research project (appendix 1a).

Chapter 5 Findings

The overarching aim of the research was to find out whether LAMP could be an enabling tool to help teachers to identify language need more effectively and with more confidence. Using the LAMP in a systematic survey was also thought to be able to support schools to establish a baseline of speech, language and communication need from which appropriate intervention could be planned.

From this had come 3 related aims:

1. To analyse the data collected from the teachers across all years in 4 Primary schools who had used the LAMP screening tool twice over a 5 month period.
2. To examine the experiences and perceptions of the teachers who used the LAMP screen.
3. To establish the quality of LAMP as a universal screening tool to ensure that it met the over-arching aim of the research in collecting reliable and valid data.

These 3 aims gave rise to the 17 key research questions (RQs) that I have outlined below.

Aim 1: To analyse the data collected from the teachers across all years in 4 Primary schools who had used the LAMP screening tool twice over a 5 month period.

RQ 1: What does the distribution of LAMP scores tell us about the impact of the LAMP on teacher identification of language need?

In this analysis the levels of teacher concern in the 4 areas of language: expressive, receptive, behaviour, and social skills were compared. The repeated measures design enabled comparisons to be made between the first and second screening of the children by teachers.

Two types of data were accessed from the screening for comparison. The first was the _individual_ concern score teachers gave for each question. This was in a range between zero and 3 (potential scores of 0, 1, 2, and 3). The second type of data was the _total_ score for a LAMP screen for _each child_. This would include the scores for the 41 questions on the screen. It would have a range of scoring between 0 and 123 (potential score of 0, 1, 2, 3 x 41 (41 LAMP screen questions).

Analysis of _individual_ concern scores S1 (concern score range zero to 3)

Analysis using the individual mean score in each school

In Oak there was a difference of 0.05 between the mean for individual scores of concern for Expressive and Receptive scales with Receptive attracting the highest score of concern. In Willow this pattern was reversed with Expressive being 0.12 points higher than Receptive. Again the scores for Behaviour and Social Skills were lower. Although there was variation between the mean in the 4 schools the scales for Behaviour and Social Skills consistently attributed to the lowest mean concern scores in each school. Figure 1 below illustrates these points.

The results of this analysis showed that the mean for individual scores of concern that teachers attributed to the questions on each scale. Expressive and Receptive scale were most similar in Cedar and Beech and were higher than the mean for Behaviour and Social Skills in these schools.

Figure 1 Graph showing the _mean_ of _individual_ scores of concern with standard deviation on the 4 LAMP scales for each of the 4 schools for S1.

	Cedar		Oak		Beech		Willow		Total	
	Mean	Std dev	Mean	Std dev	Mean	Std dev	Mean	Std dev	Mean	Std dev
■ Expressive	1.04	0.74	0.36	0.52	0.64	0.77	0.98	0.85	0.72	0.78
■ Receptive	1.03	0.74	0.29	0.46	0.63	0.71	0.86	0.77	0.65	0.72
■ Behaviour	0.86	0.71	0.27	0.41	0.51	0.63	0.76	0.7	0.56	0.65
■ Social skills	0.74	0.73	0.16	0.31	0.44	0.61	0.75	0.71	0.5	0.65
■ Total	0.91	0.68	0.27	0.38	0.55	0.62	0.84	0.72	0.61	0.65
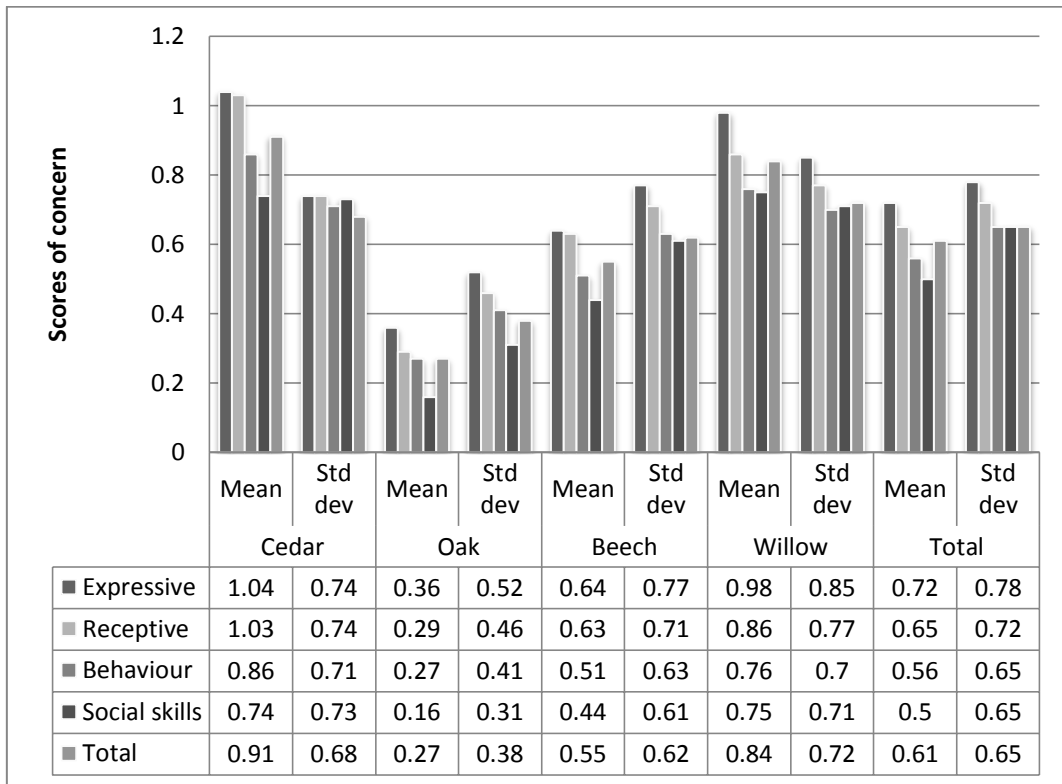
Analysis of _Total_ concern scores for LAMP S1 (concern score range 0 to 123).

S1 analysis using percentages.

In percentage terms the analysis of the data from the first LAMP screening showed the individual mean scores of concern for each school to be Cedar 38.62%, Oak 11.65%, Beech 23.34%, Willow 39%. Oak, being one of the designated LD (low deprivation) schools, is sited no more than a mile away from Cedar. Also by comparison, where Cedar teachers reported that 32% of their children never had language concerns Oak teachers reported that over 76% of their children never had language concerns. In Beech HD (high designation) 40% of children were reported by teachers to never have language concerns (appendix 10, figure 10).

The distribution of concern scores on the LAMP screening over the 4 schools for S1 showed that Oak had the highest number of pupils observed _never_ to have a speech and language difficulty. Willow was the next lowest with 15% children observed to have no concerns. This figure was 20% higher than Beech which had similar population indices to Willow. Beech had the closest percentage of children to Cedar in the _never_ concern category. Beech had 8% more children in this category than did Cedar.

Within the _sometimes_ a concern category Cedar had the highest percentage of children at just under 45%. This was 14% higher than Beech, 20% higher than Willow and 27% higher than Oak.

The percentage for Beech was highest in the _frequently_ observed category of concern with 18% compared with Cedars of 15%, Willows of 8% and Oak's 4%. Within this category the spread of percentage scores was 10% which is low when compared with that of _never_ a concern with a spread of 45%, and _sometimes_ a concern which had a spread of 27%.

In the _constant_ concern category Beech had the highest percentage of children in this area with 10% but this was not so dissimilar to Cedar with 8%, and Willow with 5%. Oak, however was 9% lower with 1% of children observed to have _constant_ concerns with speech and language.

S1 analysis using means with standard deviation.

The mean scores of concern for S1 were next compared between the 4 schools and the designated deprivation indices included in the comparison. In the table below the total mean scores and SES designation for each school are shown.

It was apparent that the mean of teacher ratings for Cedar and Willow was comparable yet the deprivation indices were different. Beech's mean was significantly higher than that of Oak, which might be expected as the SES attribution was different. Beech's mean was lower than Willow which was a

school with comparable SES indicators to Beech. Beech mean was also lower than Cedar which had a different SES rating.

Results of S2 analysis and comparison with S1 data.

For S2 there was data from only 3 schools, Cedar, Oak, and Beech. A comparison was made between the mean total concerns in the 4 areas of language, Expressive, Receptive, Behaviour, and Social Skills over the LAMP screen. Table 3 below shows the changes to overall LAMP mean with standard deviation for *total LAMP scores* of concern S1 and S2.

Table 3 Results of 2 way analysis of variance (school – over time) for LAMP. Total of all 4 scales Expressive, Receptive, Behaviour, Social Skills.

	Cedar High SES		Oak High SES		Beech Low SES		Total		
	mean	Sd	mean	Sd	mean	Sd	Mean	Sd	N=409
Screen 1	38.62	27.83	11.65	16.41	23.35	25.96	19.55	23.81	
Screen 2	25.63	27.32	6.92	11.36	19.71	25.02	13.56	20.62	
Total per school	32.13		9.28		21.53				
Overall Total							16.55		

This table includes SES of each school.

(Anova: Time: F=88.40,df=1.00,Eta=0.18.sig, p<0.01.Time x school:F=12.35, df=2.00, Eta=0.06.sig,p<0.01.School between F=45.24,df=2.00, Eta=0.18.sig,p<0.01)

The Anova analysis above shows significant main effects for time and time by school, and between schools at the p<0.01 level. This means that there are overall significantly lower scores at S2 than S1 and for schools to have significantly different mean scores. There is also an interaction effect between time and school significant at p<0.01 level showing that though scores decrease from S1 to S2, the decrease is much larger for Cedar than the other schools.

The decrease in teacher ratings in Cedar had been significantly higher than that of the other 2 schools. Oak's data indicate that the data points were spread out over a larger range of values in S2 than in S1. This was not a factor in Cedar

93

nor in Beech. The majority of the teachers gave lower scores of concern overall in the second screening.

In order to take the data from teacher scoring to an item level for inspection data was recoded in order to create 3 bands of severity of speech and language concern. This was achieved by using frequency cut offs for teacher ratings of concern. The recoding created three categories of concern based on a count of all teachers individual scores placed in order of frequency.

The new category indicators were:

0 – mild/typical difficulty

1 – moderate difficulty

2 – severe difficulty

Centiles were used as cut off points as shown in the table below. Due to the large number of children in the _never_ a concern category in the original data with a score of 0, the 80th centile had been chosen as the cut off point for moderate concerns. The 90th centile plus was chosen for severe concerns

Table 4 Showing the percentage for cut off points for individual score of concern (0-3) recoded into 3 categories of severity of difficulty

Concern Rating Code	Centile band within which the frequency of scores was calculated.	Range of individual scores of concern (0 -2)	
		S1	S2
0 mild/typical	0-79th centile	0 – 0.78	0 – 0.43
1 moderate	80 – 90th centile	0.83 – 1.23	0.47 – 0.87
2 severe	>90 centile	1.23 – 2.56	0.87 – 2.07

The recoded data illustrated a significant trend towards a downward shift of scores of concern, as did the original data, but in this form is suggestive of a moderate shift in teacher scores.

Evidence from the Focus group data.

(See appendix 11 Presentation of Focus group themes)

Changes in teacher scoring from S1 to S2 were seen in both directions with the majority of concern scores decreasing from S1 to S2. No one interviewed after the last screening in the study attributed a reduction in concerns directly to changes in children's language skills although a newly qualified teacher had noted changes in a child's performance in class after he had seen the child's problems differently (appendix 11:10b). Increased teacher awareness of the nature of language difficulties was most often put forward as a reason for potential changes in scoring (appendix 11:7a, m).

A Head Teacher and a teacher commented on the potential links between increased observation by teachers using the LAMP screen and changes in scores in the second screen:

> *'This was based on thinking that when teachers observed children more closely for language difficulties, they were more likely to see them by the time of the second screening. Prior to this it may not be so apparent' (CHead appendix 11:7a).*

> *'Advantage - made me reflect in a different way about children also because LAMP backed up SSP it made me feel quite confident in my decisions' (WExp appendix 11:9e)*

Teacher expectations were mentioned as a factor in changed ratings in S2;;

> *'The expectations of teacher change' (WExp, appendix 11: 7d).*

> *'By the end expectations of children are different than at beginning (foundation) – so that does reflect a bit in your scoring (WExp, appendix 11;7b)*

Within the focus group the staff raised the effect of increased awareness as a major factor in changing concern levels recorded from S1 to S2 which could apply whatever the direction of change. The LAMP screen was seen as having an ability to increase awareness of language function through with its questions;

> *'Change, positive change, that's fine, great but not expecting that because what can also happen is you can find that it stays the same or has gone a little bit backwards now that could indicate that staff are actually much more aware. I certainly felt that I had more awareness of what a language type difficulty looked like after using the screen (WNQT appendix 11:7f).*

> *'I think also because you're focused in on those children so you may actually be able to understand difficulties far more (BHead Appendix 11:7h).*

95

'I found some things informed the thinking in my head about that child, and informed my decision making as I went along. Things like the descriptions of a particular language problem' (WExp appendix 11:8a).

'But LAMP flagged up areas of SLCN previously unknown (WS appendix 11:8k.)

'Advantage - made me reflect in a different way about children also because LAMP backed up SSP it made me feel quite confident in my decisions' (WExp appendix 11:9e).

In discussion regarding possible reasons why scores of concern may not go down but may increase for some children a Head Teacher reflected:

'Funnily enough that's one of the questions the staff have been asking me well what happens if they've gone backwards over the year and I've said exactly that to them, well, that just shows you're more aware of things and this is a more accurate judgement than the one at the beginning of the whole thing' (BHead appendix 11:7i).

Another factor raised was that of changes in teacher perceptions affected by the mood of the class on particular days.

'So I think timing of when you fill it in, and if you'd just had a bad day, and maybe just building in some time to just go back to it and have a look at it because if you've just had a bad day with a child then receptive language may score very low because you know that it's very coloured by how they've been during that day and maybe 5 or 6 times out of 7 they'll be okay' (WNQT appendix 11:7j).

'Probably more children showed more difficulties at second screen because maybe those difficulties are more apparent the more they speak (WExp appendix 11:7c).

RQ 2: What is the incidence of language difficulties based on the data using various cut-off points?

As outlined above for comparison purposes I had recoded the LAMP screen data into 3 categories of concern (mild/typical, moderate, and severe) using a frequency table of teacher scoring. Table 23 in appendix 10 provides a summary of the number of children in each school having their overall mean concern scores categorised as mild/typical, moderate, or severe concern. It also demonstrates the downward shifts in mean from S1 to S2 overall. This was based on the recoded data for S1 and S2 in the 3 schools over each of the

96

4 scales Expressive, Receptive, Behaviour, and Social Skills. Tabe 24 in appendix 10 provides this information link to the 4 LAMP scales.

The recoded data illustrated a downward shift of levels of teacher ratings as did the original data. There is in each LAMP language scale in S2 a rise in _mild/typical_ concerns and a drop in the broader band of _moderate_ concerns. There is some, though less, decrease in _severe_ concerns. The trend appears to indicate that teachers are deciding that children's speech and language concerns are not so great a concern as first thought in S1 and thus the _mild/typical_ category had risen in S2 to include the children whom teachers had initially placed in the _moderate_ and _severe_ categories. This would explain the shift in ratios and would be supported by the results of the Receptive scale cross-tabs analysis. This result appeared to support my assumption that teachers became more aware of the true nature and severity of need by the second screening and were more moderate in their ratings. A focus group statement linked change to heightened teacher awareness through using the structured LAMP categories;

> _We found looking at the areas quite thought-provoking. It heightened awareness' (CSE appendix 11:8h)._

The Social Skills scale was the one with the least changes in ratings to another category. Behaviour scale overall had the highest decrease in the _severe_ concern band particularly in Cedar and of Beech. Bearing in mind that the concerns relate to speech, language, and communication needs, it is probable that the language component of the behaviour has been re-attributed by teachers to causes other than speech and language by the S2 and the 7 children concerned had their scores changed.to reflect this.

RQ 3: What is the incidence of language difficulties based on analysis by gender

In this analysis the relationship between pupil gender and LAMP scores in the 4 schools was investigated. Table 5 below shows this in table form.

Table 5 Results of 3 way analysis of variance (gender and school – over time) for LAMP Total scale

	Cedar N = 75				Oak N= 231				Beech N= 101				Total by gender				Total	
	Boys n = 34		Girls n = 41		Boys n = 112		Girls n = 119		Boys n = 51		Girls n = 50		Boys n = 197		Girls n = 210		N=407	
$\dot{x}$ = mean	$\dot{x}$	Sd	$\dot{x}$	Sd	$\dot{x}$	Sd	$\dot{x}$	Sd	$\dot{x}$	Sd	$\dot{x}$	Sd	$\dot{x}$	Sd	$\dot{x}$	Sd	$\dot{x}$	sd
S1	47.38	32.55	30.90	21.06	13.77	18.02	9.27	13.95	26.86	30.54	19.76	19.94	22.96	27.49	16.00	19.00	19.36	23.72
S2	39.53	32.21	14.39	15.71	8.37	12.90	5.45	9.49	22.06	26.67	17.32	23.24	17.29	24.24	10.02	15.91	13.54	20.67
Total mean	43.46		22.65		11.07		7.36		24.46		18.54		20.13		13.01		16.45	
Total mean boys + girls	33.05				9.22				21.50				16.45					

(Anova: Time:F=82.85, df=1.00,Eta=0.17.sig, $p<0.01$.Time x school:F=10.54,df=2.00,Eta=0.05.sig, $p<0.01$.Time x gender: F=1.106, df=1.00, Eta=0.00.ns. Time x gender x school:F=4.62, df=2.00,Eta=0.02.sig,$p<0.05$. School between:F=50.95, df=2.00, Eta=0.20.sig,$p<0.01$. Gender between: F=24.26,df=1.00,Eta=0.06.sig,$p<0.01$.School x gender between: F=6.064, df=2.00, Eta=0.03.sig,$p<0.05$) (see table 26 appendix 10).

The repeated measures Anova showed significant main effects for time at p<0.01, time by school (p<0.01). There were also effects for school and gender p<0.01 and school by gender p<0.05. This shows that there were overall higher mean concern scores in S1 than in S2 .within and between schools at a level of significance (p<0.01). Time by gender within schools was not at a level of significance. However, there was a 3 way interaction effect between time, school and gender significant at (p<0.05) level.

The mean concern score for girls was lower than boys in all 3 schools for both S1 and S2. For Cedar the decrease in mean concern score from S1 to S2 was more for girls than boys whereas in Oak and Beech the decrease in mean was less for girls than for boys. Oak had the lowest mean for both boys and for girls. The drop in mean for Oak for both boys and girls, however, was less than in Beech. Oak school had the lowest mean concern scores compared to the other 3 schools and in this school boys' scores were least different to girls' scores relative to the other schools (figure 2).

Figure 2 Graph showing results of 3 way analysis of variance (gender and school – over time for LAMP total scales

	Cedar Boys	Cedar Girls	Oak Boys	Oak Girls	Beech Boys	Beech Girls	Total by gender Boys	Total by gender Girls	Total N=407
Screen 1	47.38	30.9	13.77	9.27	26.86	19.76	22.96	16	19.36
Screen 2	39.53	14.39	8.37	5.45	22.06	17.32	17.29	10.02	13.54
Total	43.46	22.65	11.07	7.36	24.46	18.54	20.13	13.01	16.45
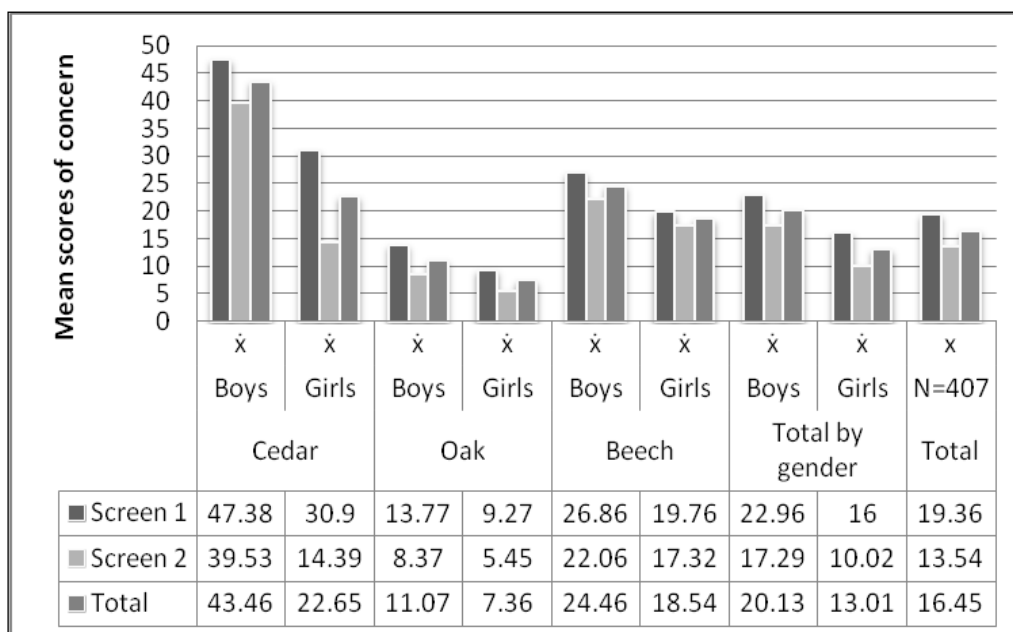
The analysis of the 4 subscales by gender +

In this analysis the relationship between pupil gender and LAMP concern scores across the 4 areas of language (ERBS) in the 4 schools was investigated. The repeated

99

measures Anova showed a mix of significant main effects and those that did not reach a level of significance.

Table 6 Table of overall significance for gender LAMP scales.

	Exp	Rec	Beh	Soc
Gender	Sig(0.001)	Sig(0.001)	Sig(0.001)	Sig(0.001)
Time x gender	not sig	not sig	not sig	not sig
Time x gender x school	not sig	sig (0.05)	not sig	sig (0.05)
School x gender	Sig(0.001)	sig (0.05)	sig (0.05)	sig (0.05)

LAMP scale Expressive

School by gender was highly significant in the Expressive scale ($<p0.01$) and at the ($<p0.05$) level of significance for the other 3 scales indicating that the gender differences varied at a significant level between the 3 schools in this scale. Oak had the least differences in concern scores for boys and girls. Tables 27 and 28 and figure 11 in appendix 10 shows this in more detail.

LAMP scale Receptive, Behaviour and Social Skills

There were differences significant at ($<p.0.05$) by time by gender by school in the Receptive and Social Skills scales. In all 4 scales boys were recorded as having higher concern scores than girls S1 and S2. There were no significant time-by-gender interactions across the 4 scales. Tables 29, 30, 31, 32, 33, 34, and figures 12, 13, and 14 in appendix 10 show this in more detail.

Results of 3-way analysis of variance by individual school is shown in tables 36, 37 and 38 in appendix 10.

RQ 4: What is the incidence of language difficulties based on analysis by year group

The analysis of variance for the year group was made using individual school data. Data for the 3 schools was then combined to explore the interactions between year groups and LAMP concern scores. The table below presents a summary of results. Tables 35, 36, 37 in appendix 10 presents this by each of the 3 schools.

Table 7 Results of 3 way analysis of variance (Year group and all schools – over time) for LAMP Total of 4 scales ERBS

	Total													
N = 409	year 1		year 2		year 3		year 4		year 5		year 6		Total	
	X	sd	x	sd	x	sd	X	sd	X	sd	X	sd	x	sd
S1	12.89	19.29	23.78	19.99	24.93	23.34	34.64	34.68	11.94	18.77	19.63	27.24	19.55	23.81
S2	7.30	13.11	11.91	14.93	19.26	22.81	29.55	33.18	9.29	16.45	12.27	21.20	13.56	20.62
Total x	10.10		17.84		22.10		32.09		10.62		15.95		16.55	

(Anova: <u>Time:</u> F=33.55, df=1.00,Eta=0.08.sig,p<0.01. <u>Time x school:</u> F= 3.35,df=2.00, Eta=0.02.sig,p<0.01. <u>Time x year group:</u> F=4.72, df=6.00, Eta=0.07.sig, p<0.01.<u>Time x school x year group:</u> F=9.37,df=10.00,Eta=0.19. <u>School between:</u> F=45.51, df =2.00,Eta=0.19.sig,p<0.01, <u>Year group between:</u> F=6.81,df=6.00,Eta=0.09.sig,p<0.01. <u>School x year group between:</u> F=3.90, df=10.00,Eta=0.09.sig, p<0.01) (table 38 in appendix 10).

The factors in this analysis that were significant related to main effects for year group, time by year group, and time by school by year group (p<0.01). This means that there were overall lower scores at S1 than S2 and for year groups and schools to have significantly different mean scores. Year 3 in Oak had a much higher mean than other years in the school. The year 3 mean in Cedar was unusual in that it increased from 41.77 to 51.15 in S2. Year 4 shows a non-significant increase in Cedar of one point from 83 to 84. The highest mean score in Beech was for 29.8 for year 4. This mean reduced by 5.7 points in S2.

There is an interaction effect between time and school significant at (p<0.05) level showing that though scores decrease from S1 to S2 the decrease is much larger for Cedar than the other schools. There is also an interaction effect between time and year group significant (p<0.01) showing that though scores decrease from S1 to S2 the decrease is much larger in year 2. Cedar mean contributes to this with a year 2 decrease from 29.6 to 12.6. Figure 3 below illustrates these points.

Figure 3 Results of 3 way analysis of variance (Year group and schools over time) for LAMP Total of 4 scales ERBS
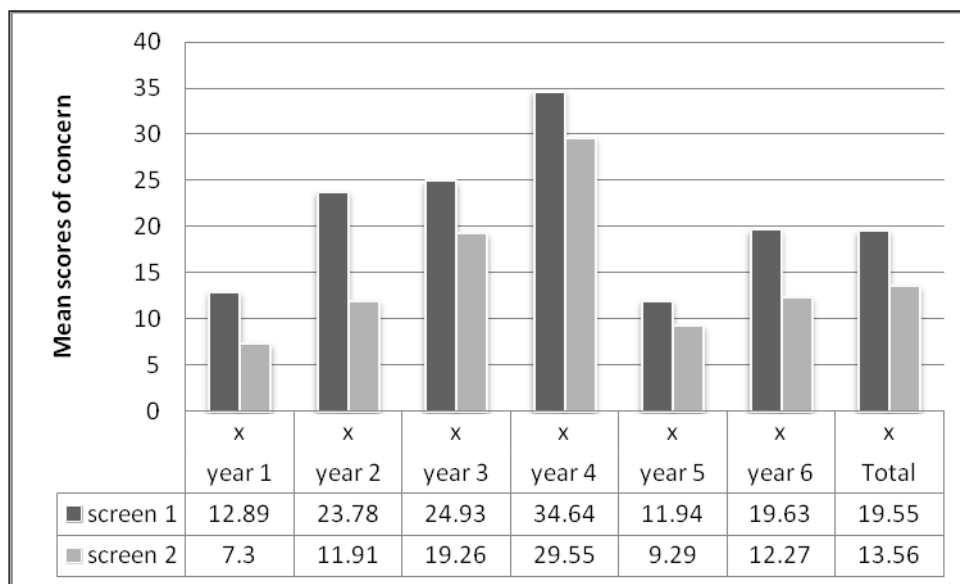
	x year 1	x year 2	x year 3	x year 4	x year 5	x year 6	x Total
screen 1	12.89	23.78	24.93	34.64	11.94	19.63	19.55
screen 2	7.3	11.91	19.26	29.55	9.29	12.27	13.56

<u>The analysis of the 4 scales (ERBS)</u>

In this analysis the relationship between year group and LAMP scores in the 4 schools was investigated. The repeated measures Anova showed significant main effects.

<u>LAMP scale Expressive</u>

Analysis of the Expressive scale showed overall lower scores at S2 than S1. This was at a significant level ($p < 0.01$) and for year groups and schools to have significantly different mean scores ($p < 0.01$). There was a main interaction effect between time by school by year group at ($p < 0.01$) showing that the decrease in mean scores of concern was much larger for Cedar. There was an interaction effect between time and year group significant at ($p < 0.01$) showing that though scores decrease from S1 to S2 the decrease was much larger in year 2.

<u>LAMP scale Receptive, Behaviour and Social Skills</u>

Analysis of the Receptive, Behaviour, and Social Skills scale by year group did not vary from that of the Expressive scale above and again the decrease was larger for year 2. These results can be seen in table form in appendix 10 (tables 39, 40, 41, 42, 43, 44, 45, 46 and figures 15, 16, 17, 18).

RQ 5: What is the incidence of language difficulties based on analysis by identification of level of need (Universal, School Action, School Action Plus, Statement)

The data was analysed by comparison with the children's status on the Special Educational Needs Register. I included a category of Universal for children not on the SEN Register codes.

<u>Total LAMP scales</u>

Table 8 below shows a summary of results of the analysis of the 4 LAMP scales by total. Table 47 in appendix 10 shows the results of a 3 way analysis of variance by SEN code and schools over time by total LAMP scales.

103

Table 8 Results of 3 way analysis of variance (SEN level – over time) in all 3 schools LAMP Total of 4 scales

By total	Universal N =362		School Action N=19		School action plus N=20		Statement N = 6		Total N=407	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Scr 1	13.76	15.79	59.63	21.77	67.50	29.85	83.67	20.72	19.57	23.85
Scr 2	8.87	13.94	48.26	24.98	49.45	26.32	68.17	29.40	13.58	20.66
Total children	362		19		20		6		407	

(Anova: <u>Time:</u> F=42.17, df=1.00, Eta=0.10.sig, p<0.01,<u>Time x school:</u> F=1.56,df=2.00,Eta=0.01.ns. <u>Time x SEN level:</u> F=5.74, df=3.00,Eta=0.04.sig,p<0.01. <u>Time x school x SEN level:</u> F=1.41,df=6.00,Eta=0.02.ns. <u>School between:</u> F=6.62,df =2.00, Eta=0.03.sig,p<0.01. <u>SEN level between:</u> F=109.34,df=3.00,Eta=0.45.sig,p<0.001. <u>School x SEN level between:</u> F=1.69,df=3.00,Eta=0.03.ns) (table 48 appendix 10)

The analyses showed significant main effects for time by SEN level (p<0.01) showing that within schools' SEN levels the decrease in mean varied significantly. There was a 3 way interaction between time by school by SEN level (p<0.01) indicating that within the schools the decrease in mean concern scores in the SEN code areas varied significantly. Figure 4 illustrates these patterns below.

Figure 4 Results of 3 way analysis of variance (SEN and school – over time) for LAMP Total of 4 scales

	Universal	School Action	School action plus	St	total
	x	x	x	x	x
Scr 1	13.76	59.63	67.50	83.67	19.57
Scr 2	8.87	48.26	49.45	68.17	13.58
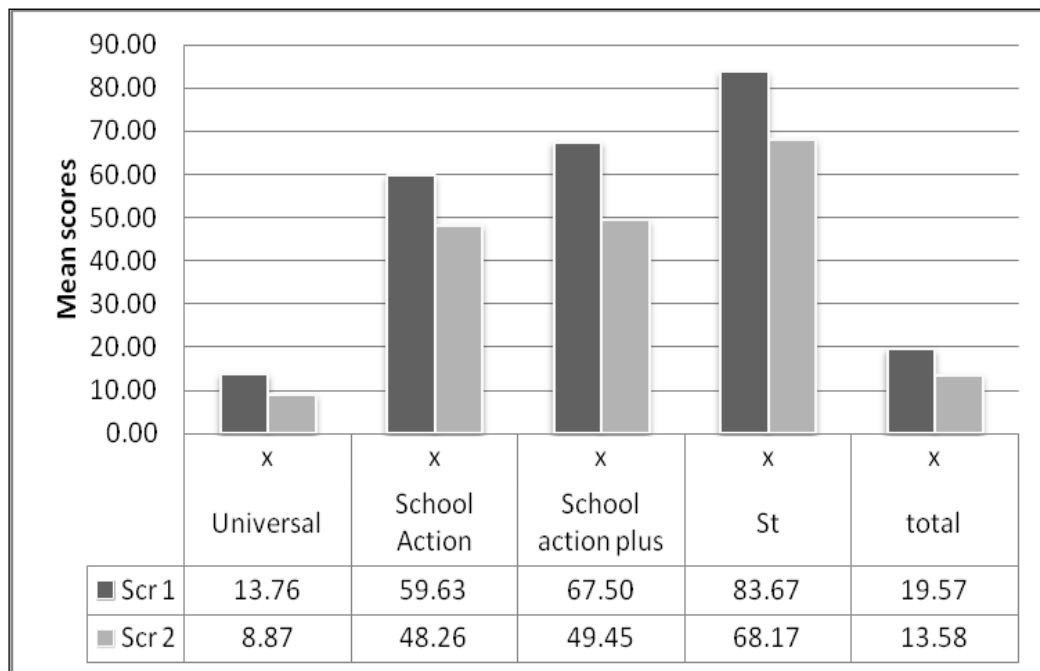
The analysis of the 4 scales (ERBS)

In this analysis the relationships between SEN and LAMP concern scores in the 4 categories of concern was investigated. The repeated measures Anova showed both significant main effects and some which did not reach statistical significance. This is shown with table 9 below.

Table 9 Table of overall significance levels by scale and condition

Scale	Exp	Rec	Beh	Soc
SEN code	sig (0.05)	sig	sig	sig
Time x SEN code	sig (0.05)	sig	sig (0.05)	not sig
Time x school x SEN code	not sig	not sig	not sig	sig
School x SEN code	Sig	not sig	sig (0.05)	not sig

LAMP scale Expressive

The Anova analysis for Expressive scale shows significant main effects for SEN code and a 2 way interaction effect between time and SEN level, both at (p<0.05). There is a 2 way interaction between school and SEN code at (p<0.01) thus schools had significantly different mean scores.

LAMP scale Receptive

Receptive scale shows significant main effects for SEN code and a 2 way interaction effect between time and SEN level at a higher level of significance than Expressive being (p<0.01). In this scale school by SEN code did not reach a level of significance as Expressive had. There was a level of significance at (p<0.05) for the interaction between school and SEN level and thus schools had significantly different mean scores but at a lower level of significance than for Expressive. The Anova analysis shows significant main effects for time by SEN level at (p<0.01). This means that schools and year groups have significantly different mean scores.

LAMP scale Behaviour

Behaviour varied from Receptive scale only in that there was a level of significance (p<0.05) for school by SEN level.

LAMP scale Social Skills

The analysis shows a significant main effect for SEN code. Time by SEN code and school by SEN code did not record a level of significance. The interaction between Time and School and SEN code reached a level of significance (p<0.01). Tables 49, 50, 51, 52, 53, 54, 55, 56 and figures19, 20, 21, 22 appendix 10 show these results.

RQ 6: What is the incidence of language difficulties based on analysis by identified as having SLCN (on the SEN register)

<u>Total LAMP scales</u>

An analysis was made of the data for children who were/were not recorded as SLCN on the SEN code of practice different areas of the SLCN code of practice. The universal category was added to indicate that a child was not on School Action, School Action Plus or in receipt of a Statement. Table 10 below shows the summary of the analysis of the total LAMP scales.

Table 10 Table of results of 3 way analysis of variance SLCN on SEN register by school – over time) LAMP 4 scales score

Total	Cedar						Oak						Beech						Total					
	yes		No		Total		yes		No		Total		Yes		No		Total		yes		No		Total	
	Mean	Sd	mean	Sd	Mean	Sd	mean	Sd	mean	Sd	mean	Sd	mean	Sd	mean	Sd	mean	Sd	mean	Sd	mean	Sd	mean	Sd
Scr 1	67.42	29.97	33.22	24.03	38.62	27.83	43.78	19.84	7.49	12.66	12.59	18.73	20.30	26.90	20.30	19.77	20.30	21.07	45.00	30.06	17.58	21.26	21.90	24.90
Scr 2	58.42	28.74	19.48	22.39	25.63	27.32	24.78	13.49	4.83	9.57	7.63	12.31	14.40	25.16	13.63	19.32	13.78	20.33	32.28	27.87	10.86	17.49	14.23	20.94
Total children	12		64		76		18		110		128.00		10		40		50		40		214		254	

(Anova: <u>Time:</u> $F=61.13$, $df=1.00$, $Eta=0.20$.sig, $p<0.01$ <u>Time x school</u>: $F=1.52$, $df=2.00$, $Eta=0.01$.ns. <u>Time x SLCN on SEN</u>: $F=2.21$, $df=1.00$, $Eta=0.01$.ns. <u>Time x school x SLCN on SEN</u>: $F=8.65$, $df=2.00$, $Eta=0.07$.sig, $p<0.01$. <u>School between:</u> $F=32.02$, $df=2.00$, $Eta=0.21$.sig, $p<0.01$. <u>SLCN on SEN between:</u> $F=50.75$, $df=1.00$, $Eta=0.17$.sig, $p<0.001$. <u>School x SLCN on SEN between</u>: $F=10.93$, $df=2.00$, $Eta=0.08$.sig, $p<0.01$) (table 57 appendix 10).

The Anova analysis shows significant main effects for time by school by SLCN/SEN status (p<0.01). This means that there are overall lower scores at S2 than S1 and for SLCN/SEN status and schools to have significantly different mean scores within each school. There is also a significant main effect within time and school and SLCN/SEN status (p<0.01) indicating that although there had been a decrease in mean scores these varied in schools and in SLCN/SEN levels. There is also a main interaction effect between time and school and SLCN/SEN status. Figure 5 below illustrates these points.

Figure 5 Results of factor analysis of (Slcn on SEN register all schools – over time) for LAMP scale Total.

	Cedar			Oak			Beech			Total		
	x yes	x No	x Total	x yes	x No	x Total	x yes	x No	x Total	x yes	x No	x Total
Scr 1	67.42	33.22	38.62	43.78	7.49	12.59	20.30	20.30	20.30	45.00	17.58	21.90
Scr 2	58.42	19.48	25.63	24.78	4.83	7.63	14.40	13.63	13.78	32.28	10.86	14.23
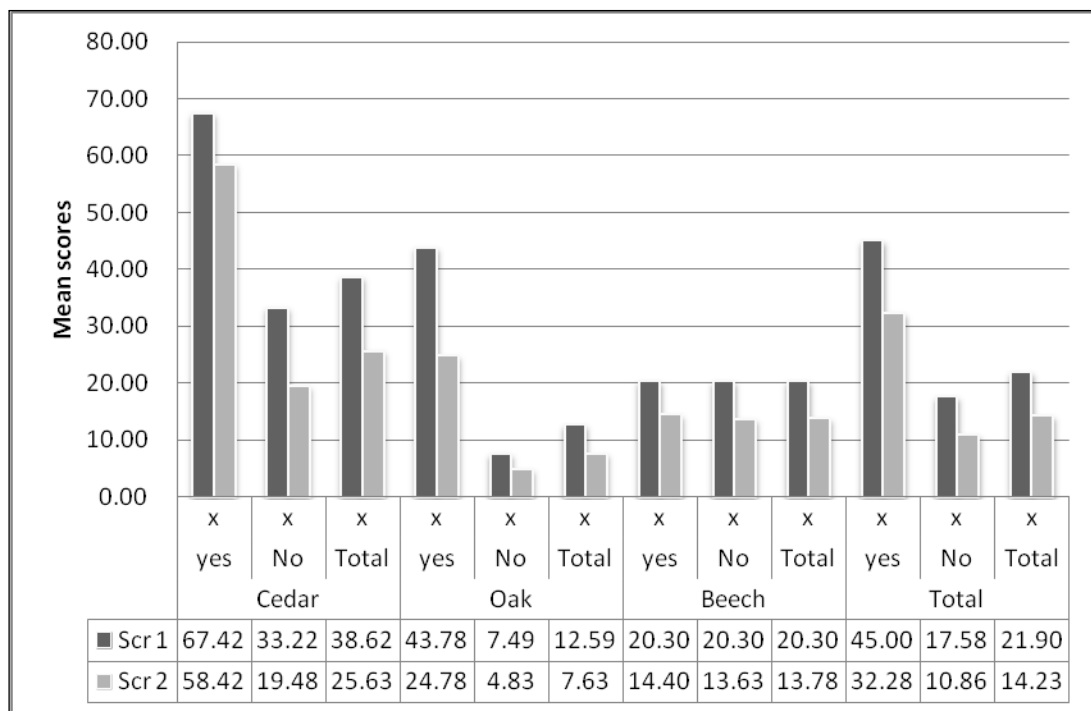
<u>The analysis of the 4 scales (ERBS)</u>

Table 11 below shows a summary of the significance levels found for the 4 scales by SEN.

Table 11 Overall significance levels by scale and condition

Scale	Exp	Rec	Beh	Soc
Recorded SLCN on the SEN register (SLCN /SEN)	sig	sig	sig	Sig
Time x SLCN /SEN	not sig	not sig	not sig	not sig
Time x school x SLCN /SEN	sig	sig	sig (0.05)	Sig
School x SLCN /SEN	sig	sig	sig	Sig

<u>LAMP scale Expressive</u>

Analysis of the Expressive scale by SLCN on the SEN register showed significant main effects for time, and school and for SLCN/SEN status (p<0.01). This means that there were overall lower scores at S2 than S1 and for SLCN/SEN status and schools to have significantly different mean scores. There was also a significant main effect within time and school and SLCN/SEN status (p<.001) indicating that although there had been a decrease in mean scores these varied in schools and in SLCN/SEN levels. There was also a main interaction effect between time and school and SLCN/SEN status.

<u>LAMP scale Receptive and Social Skills</u>

Analysis of the Receptive and Social Skills scales by SLCN on the SEN register did not vary from the pattern for Expressive above.

<u>LAMP scale Behaviour</u>

Behaviour showed one difference in that the 3 way interaction time by school by SLCN on SEN was at a lower level of statistical significance (p<0.05). Tables 58, 59, 60, 61, 62, 63, 64, 65 and figures 23, 24, 25, 26, in appendix 10 show these results.

RQ 7: What is the incidence of language difficulties based on analysis by speaking and listening levels.

An analysis was made of LAMP scores with speaking and listening levels where they were provided by the schools. Speaking and listening levels are recorded

110

in many schools and although we did not have this for every child there was a sufficient body of results with which to make some comparisons.

Total LAMP scales

Table 12 below provides a summary of results of analysis of the total LAMP scale scores by speaking and listening.

Table 12 Results of 3 way analysis of variance (Sp/L– over time) LAMP Total of 4 scales

Total By Speaking and Listening Levels																			
N = 389	level 0 =		level 1		level 2		level 3		level 4		level 5		level 6		level 7		level 8		Total
	x	Sd	X	sd	X	sd	x	Sd	x	sd	X	sd	X	sd	x	sd	X	sd	x	sd
S1	82.67	15.50	24.61	29.33	23.00	22.84	19.98	19.91	8.30	10.13	2.77	6.29	8.50	6.20	7.62	7.65	1.33	3.27	18.00	22.36
S2	55.00	7.00	21.69	27.44	16.79	21.98	12.29	14.01	4.55	8.87	0.96	2.20	3.90	4.82	2.15	2.61	0.33	0.82	12.73	19.57
N	3		75		92		100		64		26		10		13		6		389	

(Anova: <u>Time:</u> F=35.12,df=1.00, Eta=0.09.sig, p<0.001. <u>Time x school:</u> F=2.52,df=2.00,Eta=0.01.ns. <u>Time x speaking and listening level:</u> F=2.06, df=8.00,Eta=0.04.sig,p<0.05. <u>Time x school x speaking and listening level:</u> F=3.71,df=8.00,Eta=0.07.sig,p<0.001. <u>School between:</u> F=12.03,df=2.00,Eta=0.06.sig,p<0.01. <u>School x speaking and listening level between:</u> F=9.95,df=8.00, Eta=0.18.sig,p<0.01). <u>School x speaking and listening level between:</u> F=6.42,df=8.00,Eta=0.12,sig,p<0.01) (see table 66 in appendix 10)

Analysis showed significant main effects for time and for school and for speaking and listening levels (p<0.01), and time by speaking and listening levels (p<0.05). This means that there were overall lower scores at S2 than S1 and for speaking and listening levels and schools to have significantly different mean scores. There was also a significant main interaction between time and school and speaking and listening levels (p<0.05) indicating that although there had been decrease in mean scores these varied in schools and in speaking and listening levels. Figure 6 below illustrates these points.

Figure 6 Graph showing results of 3 way analysis of variance (Sp/L– over time) LAMP total of 4 scales

	x	sd	X	sd	x	sd	x	Sd	x	sd	X	sd	X	sd	x	sd	X	sd	x	sd
	level 0 =		level 1		level 2		level 3		level 4		level 5		level 6		level 7		level 8		Total	
■ screen 1	83	16	25	29	23	23	20	20	8.3	10	2.8	6.3	8.5	6.2	7.6	7.7	1.3	3.3	18	22
screen 2	55	7	22	27	17	22	12	14	4.6	8.9	1	2.2	3.9	4.8	2.2	2.6	0.3	0.8	13	20
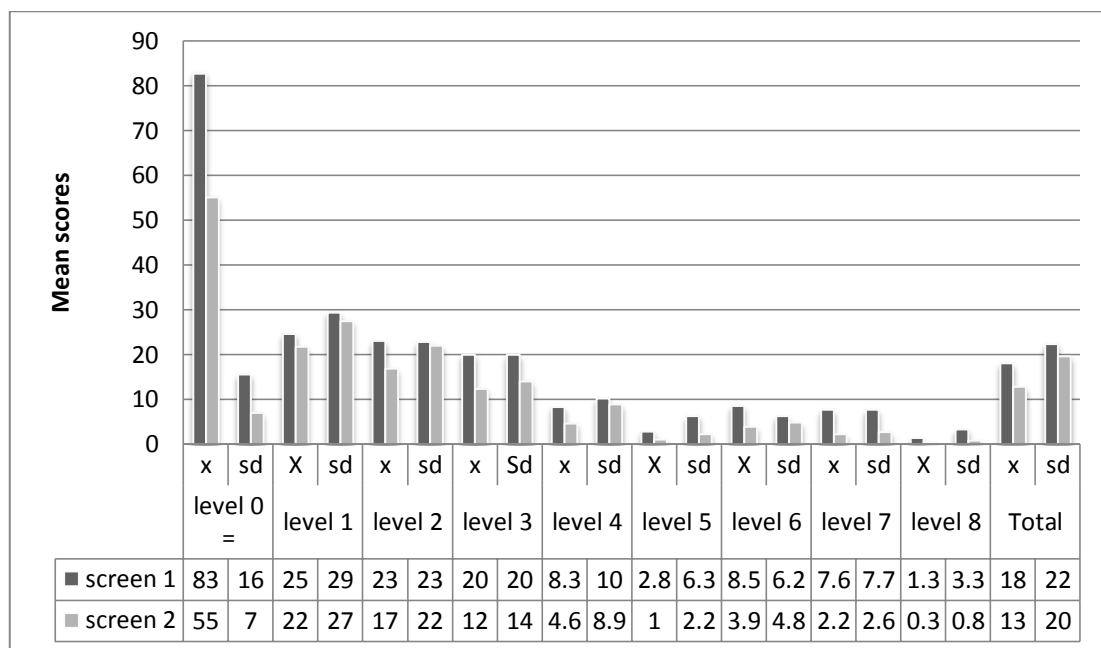
Focus group data indicated that speaking and listening can be seen as a 'poor relation' of written literacy and thus recording and intervention may be given less priority (BHead, appendix 11:13 a). The LAMP was seen to re energise these areas.

The analysis of the 4 scales (ERBS).

Table 13 below presents a summary of the data analysis for the 4 Language scales by speaking and listening.

113

Table 13 Overall significance levels by scale and condition

Scale	Exp	Rec	Beh	Soc
Speaking and listening levels (SLL)	Sig	Sig	Sig	Sig
Time x SLL	Not sig	Not sig	Sig (0.05)	Sig
Time x school x SLL	Sig	Sig	Sig	Sig
School x SLL	Sig	Sig	Sig	Sig

<u>LAMP scale Expressive</u>

Analysis of the Expressive scale by speaking and listening level showed speaking and listening levels and schools to have significantly different mean scores. There was also a significant main interaction between time and school and speaking and listening levels ($p < 0.01$) indicating that although there had been a decrease in mean scores these varied in schools and in speaking and listening levels

<u>LAMP scale Receptive</u>

Analysis of the Receptive scale showed speaking and listening levels ($p < 0.01$), but differed from Expressive above, in that time x speaking and listening levels were not significant. This means that there were overall lower scores at S2 than S1 and for speaking and listening levels and schools to have differences in mean scores for S1 and S2 but not significantly so. Similar to Expressive there was also a significant main interaction between time and school and speaking and listening levels ($p < 0.01$).

<u>LAMP scale Behaviour</u>

Analysis of the Behaviour scale also showed significant main effects for time and for speaking and listening levels ($p < 0.01$), and for school, but at a lower level of significance this time at ($p < 0.05$). Time x speaking and listening levels were also significant similarly to Expressive but at a lower level of significance at ($p < 0.05$). There was again a significant main interaction between time and school and behaviour by speaking and listening levels but at the ($p < 0.05$) level of significance indicating that although there had been decrease in mean scores

these varied in schools and in behaviour by speaking and listening levels but less than for the Expressive and Receptive scales.

LAMP scale Social Skills

Analysis of the Social Skills scale by speaking and listening level showed significant main effects for speaking and listening levels (p<0.01) and time by speaking and listening levels (p<0.01). There was a significant main interaction between time and school and speaking and listening levels (p<.005). Tables 67, 68 69, 70, 71, 72, 73, 74 and figure 27, 28, 29, 30 in appendix 10 show this pattern of scores.

RQ 8: What is the incidence of language difficulties based on analysis by EAL

An analysis was made of the data pertaining to children for whom English was an additional language.

Total LAMP screen

An analysis was made of levels of teacher concern for the total LAMP screen scores with EAL. Table 14 below shows this.

Table 14 Mean LAMP scores for EAL S1 and S2

	Is English an additional language?	Mean	Std. Deviation	N
Screen1Total	yes	20.91	20.01	11
Screen2Total	yes	17.45	16.18	11

There were 11 children in the study with English as an additional language. The total mean score of concern was high (mean 21 SD 20) in S1. In the second screening this dropped to mean 17.45 (SD 16.18) which though lower, is still a score in the higher range. Figure 7 shows this pattern of scoring.

115

Figure 7 EAL S1 and S2 by school (N = 11)

	Mean	Std. Deviation
■ Screen1Total	20.91	20.01
■ Screen2Total	17.45	16.18
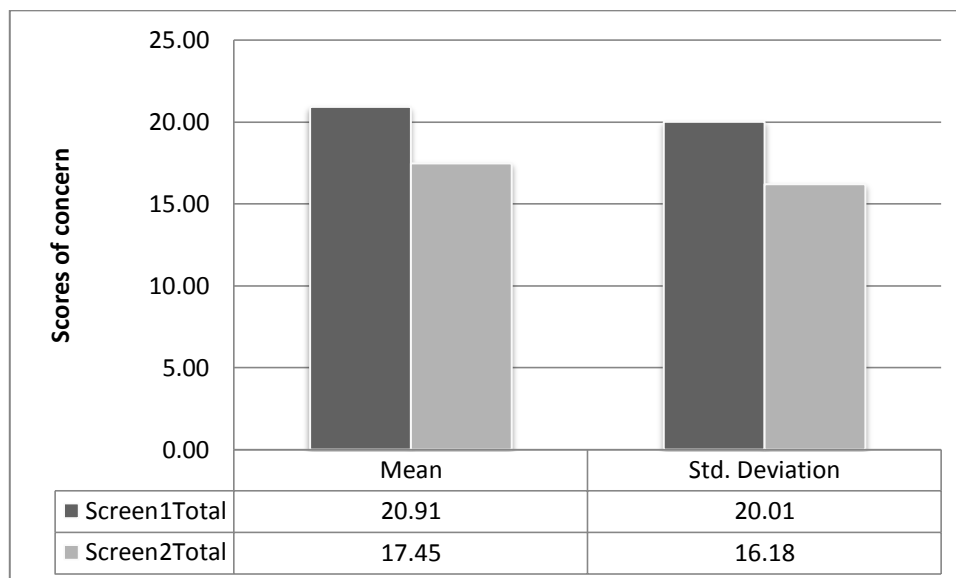
RQ 9: What relationship is found between language scores on the LAMP screen and the school designation of high or low deprivation status?

Organisation of results

For each RQ9 – RQ14 the data below is presented as:

Section 1:

Total LAMP screen scales with tables and figure

Section 2:

LAMP scale Expressive

LAMP scale Receptive

LAMP scale Behaviour

LAMP scale Social Skills

With tables and figures provided in appendix 10.

This analysis concerned any inter-relationship between teacher concern levels on the 4 areas of the LAMP screen and the socio-economic designation of the school as indicated by the School Deprivation Indices.

116

Table 76 in appendix 10 provides a summary analysis of all Anovas factors in the study.

Comparison of school deprivation indices

The Multiple Deprivation Index (MDI) (see appendix 10, table 75) was referred to as the main indicator for deprivation status of each school as outlined in the methods chapter above. RQ 8 is linked to RQ 7 in that free school meals entitlement (fsm) contributes information regarding the economic circumstances of individual children and of cohorts of children within each school.

SEN figures and absence levels are included as key descriptors of the school population and expected progress in English which is closely allied to speech and language skills levels is provided. Raise-Online Stability index was included as although this does not provide information related to deprivation status it can have an impact on the running of the school. In table 15 below comparisons are provided between each school, the locality and national figures.

Comparison between the Multiple Deprivation Indices, FSM, and LAMP screen scoring

The 4 schools were chosen at the beginning of the study to reflect variable economic status. Cedar and Oak were in high SES areas with low deprivation status while Willow and Beech were in areas of economic deprivation. However, the expected pattern of mean scoring of speech and language concerns was not found. The schools with the highest LAMP total mean score were Cedar (LD) and Willow (HD) and the lowest Beech (HD) and Oak (LD). Cedar had a low MDI being 50% below the national figure and is comparable to that of Oak but their LAMP mean was closest to Willow, a school with a high MDI (13 points above the national average). Cedar had FSM entitlement lower than the average for the City, the area and nationally. Willow's FSM was almost twice the national average. Table 15 below shows this pattern of relationships.

117

Table 15 Data Matrix showing the relationships between school factors and patterns of reduction in the LAMP screen scores S1 and S2.

School	LAMP S1 mean	LAMP S1 SD	Reduction in concern scores S2	MDI/FSM levels	SEN level	Absence rate
Oak	Low LAMP S1	Smaller SD S1	Small reduction S2	Low fsm and MDI	Low SEN	High absence
Cedar	Highest LAMP S1	High SD S1	Larger reduction S2	Low fsm and MDI	High SEN	High absence
Beech	Mid LAMP S1	High SD S1	Small reduction S2	High fsm and MDI	High SEN	
Willow	High LAMP S1	High SD S1	n/a	High fsm and MDI	Low SEN	High absence

See table 77 in appendix 10 for the full table with figures. The table above shows the reduction in concern score from S1 to S2 screening for the high/low SES schools in relation to MDI (Multiple Deprivation Index), SEN levels and absence rates among pupils. The data for S2 screening was available from 4 schools S1 but 3 schools only for S2.

Beech had a high MDI and similar percentage of FSM to Willow, and 0.4% more absences but 7% of the children in Beech made expected progress in English which is comparable with Oak which also had 71% of children in this category compared with Willow's figure of 53%.

Beech was high in SEN identification and comparable with Cedar at >18% but Willow's was unexpectedly low at 5.8%. Oak was in a similar locality to Cedar and had a comparable MDI but had 1.6% SEN identification compared with Cedar's 18%.

The most evident difference between the indices for Cedar, Oak, Beech and Willow is the stability figure. At 70.2% the stability percentage of Cedar is the lowest of the 4 schools and is >20% lower than Oak despite being within the same locality.

In terms of concern ratings on the LAMP screen Cedar had the highest overall mean of the 3 schools remaining in the study. The range of teacher mean scores was larger in Cedar than in Oak though most approximately comparable

with Beech and Willow. In S1 Willow had the second highest LAMP concern score but a markedly lower SEN than the other schools including Oak.

We would have expected that Oak which has low deprivation indices; would have low LAMP scores and this is what was found. Although Oak and Cedar both have a low deprivation index only Oak had a low LAMP concern score. Cedar had the highest concern score rating on the LAMP of all the schools. Cedar also had the highest reduction in S2.

Beech had a high MDI but a mid-LAMP score compared to both Willow and Cedar. Their reduction in concern scores is also comparatively small. Cedar, Beech and Willow have a larger spread of concern scores compared with Oak.

<u>Statistical analysis of the LAMP total means between S1 and S2</u>

After the first inspection of the data in terms of changes in percentages the data was analysed in a series of repeated measures Manova using the statistical package SPSS. For the following analysis the original raw data was used. These ratings of concern were based on observation of the general frequency a particular difficulty was observed. The ratings were 0 <u>*never*</u>, 1 <u>*sometimes,*</u> 2 <u>*frequently*</u> and 3 <u>*constantly*</u> a concern (See appendix 9 LAMP screen). This gave a scoring range for each individual question of between 0–3 and a total screen score between 0-123. The levels of significance of the interactions for all factors calculated for the areas of comparison for each RQ are shown on the table below. If level of significance is not entered as ($p < 0.05$) it should be read as being at the ($p < 0.01$) level.

<u>Analysis of Total LAMP screen scales for the 3 schools</u>

In this analysis the relationship between levels of teacher concern in the 4 areas of Language: Expressive, Receptive, Behaviour and Social Skills was analysed and compared between S1 and S2; see table 16 below. Levels of teacher concern in the 4 areas of language were also subject to a comparison. Levels of significance were looked for.

119

Table 16 Results of 2 way analysis of variance (school by time) for combined LAMP scales

	Cedar N=75		Oak N= 231		Beech N= 101		Total N 409	
	X	Sd	X	Sd	X	Sd	X	Sd
S1	38.62	27.83	11.65	16.41	23.35	25.96	19.55	23.81
S2	25.63	27.32	6.92	11.36	19.71	25.02	13.56	20.62
Total per school	32.13		9.28		21.53			
Overall Total							16.55	

Anova <u>Time:</u> F=88.40, df=1.00, Eta=0.18,sig,p<0.01 <u>Time x school:</u> F=12.35, df=2.00, Eta=0.06, sig, p<0.01.<u>School between</u>: F=45.24,df=2.00,Eta=0.18,sig, p<0.01 (table 77 in appendix 10)

There was an interaction effect between time and school showing that though scores decrease from S1 to S2, the decrease was much larger for Cedar than for the other schools. This confirmed the initial inspection of the data in percentage terms and showed that the interactions were significant (p<0.01).

Figure 8 Graph showing results of 2 way analysis of variance (school by time) for LAMP Total (all 4 LAMP scales)

	x Cedar	x Oak	x Beech	X Total
Screen 1	38.62	11.65	23.35	19.55
Screen 2	25.63	6.92	19.71	13.56
Total per school	32.13	9.28	21.53	
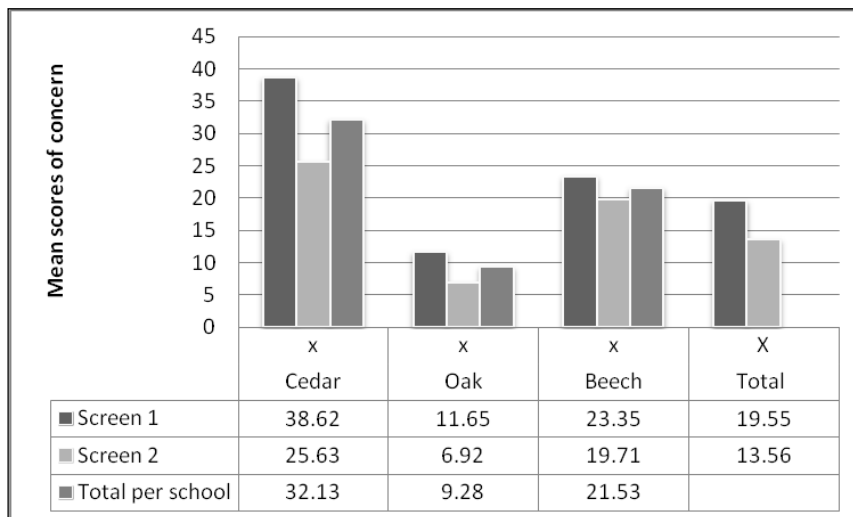
<u>LAMP scale Expressive</u>

Mean concern score ratings for individual scales all showed significant main effects for time and school, and time by school (p<0.01). However the results

do not indicate a clear division between schools on the basis of social variables. Oak conforms to the expected pattern but Cedar and Beech do not.

Again the Anova analysis shows significant main effects for time and school, and time by school. This means that there are overall lower scores at S2 than S1 for Expressive and for schools to have higher and lower scores. There is also an interaction effect between time and school significant ($p<0.01$) showing that though scores decrease from S1 to S2, the decrease is much larger for Cedar than the other schools.

LAMP scale Receptive

For the Receptive scale the Anova analysis shows significant main effects for time and school, and time by school. This means that there are overall lower scores at S2 than S1 and for schools to have significantly different mean scores. There is also an interaction effect between time and school significant at $p<0.01$ showing that though scores decrease from S1 to S2, the decrease is much larger again for Cedar than the other 2 schools.

LAMP scale Behaviour

The Anova analysis for the Behaviour scale shows significant effects for time and school, and time by school. Again there are overall lower scores at S2 than S1 and schools have significantly different mean scores. There is also an interaction effect between time and school significant ($p<0.01$) showing that though scores decrease from S1 to S2, the decrease is larger for Cedar than the other schools. Decreases here are lower than for Expressive and Receptive scales.

LAMP scale Social Skills

The Anova analysis for Social Skills shows significant effects for time and school, and time by school. This means that there are overall lower scores at S2, and for schools to have significantly different mean scores. There is also an interaction effect between time and school significant at $p<0.01$ level showing

121

that though scores decrease from S1 to S2, the decrease again is larger for Cedar than the other schools. Decreases here are lower than for Expressive and Receptive scales in all other scales.

See tables 78, 79, 80, 81 for tables and figures 31, 32, 33, 34 in appendix10 relating to the analysis of the 4 scales Expressive, Receptive, Behaviour, Social Skills.

Conclusion

In conclusion there were overall lower scores at S2 than S1 for all 4 scales. The 3 schools have higher and lower scores in comparison with each other at a level of statistical significance. There was also an interaction effect for each of the 4 scales between time and school significant at $p<0.01$ level showing that though scores decrease from S1 to S2, the decrease was again much larger for Cedar than for Oak and Beech.

RQ 10: What is the incidence of language difficulties based on analysis by children with/without free school meal entitlement (FSM).

In this analysis the relationship between socio-economic status of pupils as indicated by the free school meal uptake and LAMP scores was analysed (see table 17 below). Table 82 in appendix 10 shows the percentage of children with FSM in the 4 schools.

122

Table 17 Changes to total mean/SD concern scores S1 and S2 for 3 schools Cedar, Oak and Beech by fsm; LAMP total scale score ERBS

Total by Free School Meals	Yes		No		Total	
	Mean	Std. Deviation	Mean	Std. Deviation	Mean	Std. Deviation
S1	30.30	27.06	19.24	23.81	20.74	24.53
S2	23.70	25.15	13.13	20.83	14.57	21.73

(ANOVA: Time: F=30.33, df=1.00,Eta=0.08.sig.p<0.01.Time x school: F=7.02,df=2.00, Eta=0.04.sig, p<0.001. Time x sm:F=1.53,df=1.00,Eta=0.00.ns. Time x school x fsm: F=0.46,df,2.00,Eta=0.00.ns. Between school: F=4.11, df=2.00, Eta=0.02 sig. p<0.05. Between fsm: F=2.32, df=1.00 Eta=0.01.ns. Between school x fsm: F=1.07,df=2.00, Eta=0.01.ns) (see table 83 in appendix 10).

Beech and Willow had comparable number of pupils with fsm. The low fsm for Oak and Cedar was similar. There was a difference between schools at the (p<0.05) level of significance for levels of concern on the LAMP screen.

There is significant effect for time at p<0.01 and school at p<0.05 and a 2 way effect for time by school at p<0.01. Schools varied in the amount of decrease in scores for children with/without fsm from S1 to S2. Figure 9 below illustrates this in graph form.

123

Figure 9 Results of factor analysis of interactions (FSM and all schools – over time) for LAMP Total of 4 scales ERBS

	x Yes	x No	x total
■ Scr 1	30.30	19.24	20.74
■ Scr 2	23.70	13.13	14.57
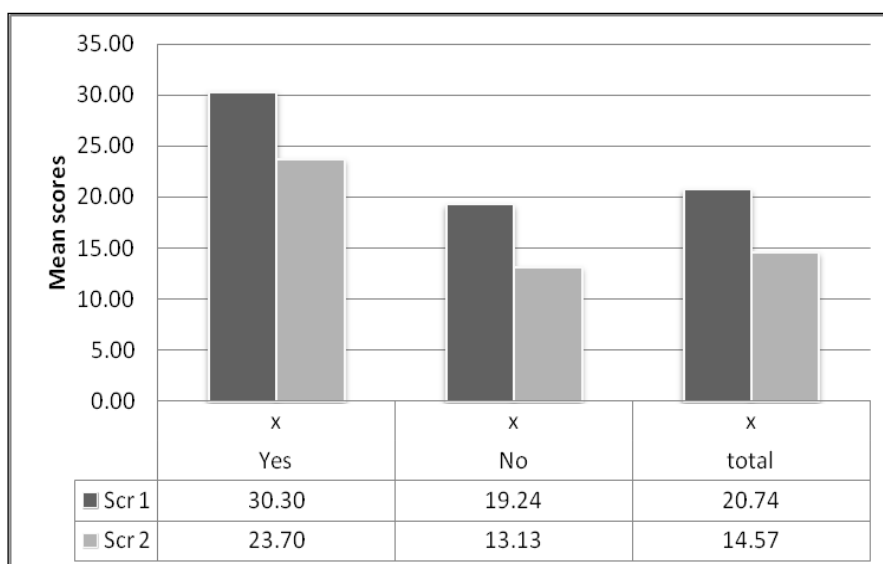
Analysis of the 4 scales by FSM.

Scale scores Expressive, Receptive, Behaviour and Social Skills

In this analysis the relationship between socio-economic status of pupils as indicated by the free school meal uptake and LAMP concern scores was analysed; and compared between S1 and S2. A summary is presented in table 18 below. Results of analysis of LAMP scales Expressive, Receptive, Behaviour and Social Skills for FSM showed decreases in concern scores between S1 and S2 (see table 17 above).

Table 18 Overall significance levels by scale and condition

Scale	Exp	Rec	Beh	Soc
free school meals (fsm)	not sig	not sig	not sig	not sig
time x fsm	not sig	not sig	not sig	not sig
school x fsm	not sig	not sig	not sig	not sig
time x school x fsm	not sig	not sig	not sig	not sig

In Expressive, Receptive, Behaviour and Social Skills scales, although there are differences in the mean and mean reductions within and between the 3 schools, these do not reach a level of statistical significance in relation to FSM.

124

Table 18 above shows that taken individually the concern scores did not reach a level of statistical significance although when totalled this situation changed (see tables 84, 85, 86, 87, 88, 89, 90, 91 and figures 35, 36, 37 in appendix 10).

Aim 2: To examine the experiences and perceptions of the teachers involved in using the LAMP tool.

RQ 11: What were the experiences and perceptions of teachers regarding the practicality of using the LAMP screen?

In order to explore teachers' experiences of using the screen at an individual and school level the schools had been asked to give a skills questionnaire (1) to teachers to complete before the screening began. This related to teachers' levels of awareness and confidence in identifying and supporting any speaking and language needs of the children they taught. 18 teachers out of the total of 28 completed this first questionnaire, 10 from Beech and 8 from Oak. The same teachers completed a second skills questionnaire (2) containing a post hoc element after the second screening.

Table 92 and figure 38 in appendix 10 shows the pattern of responses given by 18 teachers to the pre, post/retrospective semi structured questionnaires relating to awareness, skills and disposition related to the identification and support of SLCN. The mean response for questions 1 to 8 and question 10 indicated a slight increase in teacher's self-ratings related to knowledge, confidence and skills. Question 10 *'I feel that using the screen will develop my awareness in identifying SLCN'* shows a decline. This reflects an over ambitious hope by teachers that the screen on its own would have an impact upon their ability to identify SLCN in their class of children. By the end of the study it was apparent to teachers that the LAMP screen helped this process but was not intended to be sufficient in itself. There was also a lot of additional learning and decision making that had to be engaged in by teachers to continue this process. By the end of the study teachers reported that they had been over optimistic in their view of their ability to identify SLCN accurately prior to the study (Question 1). Taken together these responses suggest that teachers

experienced a gradual shift towards improved skills of identification of language concerns through use of the LAMP screen.

RQ 12: How did the teachers evaluate the screen and its impact on their awareness, skills and confidence in the identification and support of pupils with speech and language difficulties?

<u>Changes to professional awareness</u>

Teachers reported some changes to their professional awareness of the nature of language needs and confidence in identifying language needs. This is evidenced in the second teacher skills questionnaire responses shown in appendix 5.2, the mean of teacher self-ratings (appendix 10 figures 39 and 40) and in the Focus group feedback appendix 11.

The first teacher self-rating mean for confidence in assessing children's levels of language and communication was quite realistic according to the comparison between the teachers first self-score and their retrospective rating of their initial level. The mean rose from 4.10 to 6.06, indicating an increase in professional confidence in this area. Focus group feedback referred to the way teachers' confidence in their own judgements had increased. (appendix 10, table 93). A similar increase was seen in awareness of different aspects of SLCN children may experience (appendix 10, figure 40). This was referred to in the focus group data where teachers referred to their raised levels of awareness due to descriptions of language problems on the LAMP screen

> *'I found some things like the descriptions of a particular language problem informed the thinking in my head about that child and informed my decision making as I went along' (WExp, appendix 11:8a)*

Teachers did find this information useful when writing IEPs, however they also said that they developed more confidence in recognising SLCN issues but not in resolving them. This study aimed to improve skills of identification in order to support later intervention. It appears that more work with schools on supporting SLCN is a next step after the LAMP screening has provided a map of need.

The universal nature of the LAMP screen enabled a whole school view of need and the beginnings of whole school intervention planning.

> *'--quantified support provision, teachers already talked about it – data can be viewed at different levels, whole school to year group to class to individual pupils – T/A's been identified through a skills audit to run support Focus groups next year so changed that level a bit'.(WSE appendix 11:10o)*

> *LAMP helped our plans for the next step as a whole school – raised the awareness of need (WSE appendix 11: 11b).*

Value of LAMP as an enabling tool

The teachers in this study voiced an opinion that they valued having a system of recording speech and language levels in their classroom. In the focus group it was said that LAMP was found to be an effective tool as it quantified language need, focused staff on language issues, and increased understanding of SLCN where there had been a previous lack of teacher's specialist knowledge:

> *'LAMP demonstrated quantity of need' (WSE appendix 11:13e).*

> *'Teacher responses indicated that they felt that the lamp screen gave them the most effective tool they had used so far when identifying and supporting SLCN in school' (BHead appendix 11:13d).*

Senior management felt it was essential not only to be able to assess speech and language needs accurately but also to be able to demonstrate value added in their school. There were some initial concerns regarding starting a new programme and about staff capacity, in light of other work that needed to be done, but the use of this time was supported by Senior management:

> *'I think it was a lot of time and a lot of effort but once they'd actually done it they could see the benefit of it. So I think it's one of those things where investment of that time is a useful thing to do' (BHead, appendix 11:13c).*

Responses in the focus group discussions indicated that the LAMP screen gave them the most effective tool they had used so far when identifying speech and language difficulties in school. This view was shared by senior management in all 4 schools. A response by the Head of Beech expressed a view on the

127

importance of the whole school focus on maintaining the impetus of the screening while others' responses implied upskilling effects on their practice:

> *'We found looking at the areas quite thought-provoking. It heightened awareness'* (CSE *appendix* 11:8h).).

> *'Increased my confidence in identifying areas of language that were a problem for the child'* (WExp *appendix* 11:9h).

Certainly these reflections tally with the results of the teacher skills questionnaire. Small but consistent gains were reported by all teachers completing this questionnaire in a range of areas relating to awareness and skills in identifying SLCN. Certain areas of difficulty observed in the classrooms which had not previously been linked to language skills were now seen as being connected

Increases in confidence reported

In the teacher skill questionnaire a small but increasing trend in increased confidence was noted. Table 92 and figures 38, 39, 40 in appendix 10 illustrate this. Question 8 in the Teacher Skills Questionnaires 1 and 2 was *'I am confident that the pace of language I model in the class supports children's language development.* 'Responses to this question indicated an increase in questionnaire 2. At the end of the study teachers reflected that they had initially over-estimated their confidence. I would suggest that this underpinned some changes in teacher confidence levels.

Additional comments related to teachers' levels of confidence in assessing the language and communication levels of the children in their setting. 4 out of the 18 teachers who completed the skills questionnaire made additional comments on their levels of confidence. 2 of these responses indicated that they felt much more confident and 2 were more confident, while one indicated no change as they felt they needed more practice in screening. This was said to be related to the need for more practice. In the teacher skills questionnaires 2 teachers reported increased confidence in putting ideas into practice and the importance

of support from senior management and other agencies was commented by 3 teachers.

Increased confidence in planning activities for individual children to support language and communication skill development was commented on by eight responses. This was seen to be supported by reassurance from the Speech and Language Therapy Service by one respondent. In the focus group teachers reported that they had improved their professional skills to some extent through using the LAMP screening tool with children in their class.

> *'Increased my confidence in identifying areas of language that were a problem for the child'* (WExp *appendix* 11:9h).

Table 93 in appendix 10 provides additional information on teacher responses from the Focus group.

RQ 13: To what extent did the teachers report any changes in their practice as a result of using the LAMP screen?

<u>Changes in the classroom organization</u>

Evidence of changes in teachers' practice emerged in the Focus group discussions. A teacher described strategies that had been put into place after the first screening to help children who had been identified as having language related difficulties through the screening process. This includes changes to seating to increase focus.

> *Minor changes to class seating children with language issues facing teacher (not back to teacher) raised my awareness of observing issues'* (WNQT appendix 11:10f).

It is, however, important to separate conceptually the support provided to enable a child with comprehension difficulties to access the curriculum and therapeutic interventions for comprehension difficulties. The first will do nothing to improve the receptive language deficit which is complex and usually in nature long term (Bishop 2008, Lindsay, 2008, Dockrell and Lindsay, 2012) but may decrease anxiety levels through providing differentiated support in class

enabling the child to have better access to the curriculum. As Westwood (2003) pointed out, we cannot expect teachers to provide speech and language therapy, but we can and should help them to acquire an improved understanding of how to identify areas of linguistic concern and enable a communication friendly classroom. The language support strategies used by teachers can then serve an important function in encouraging better classroom practice. Their supportive practice will be of benefit to all children, but will be particularly important for children with linguistic difficulties whatever the presentation and the cause and pattern of the difficulty.

The whole school use of the LAMP screen supported its use as a universal tool. Focus group comments revealed the extent of practice it had brought together on a whole school level.

> *'The advantages were that we were all looking more at the children's language skills and interactions and lack of them' (CSE appendix 11:11a).*

> *'LAMP helped our plans for the next step as a whole school – raised the awareness of need – base line is low on entry so LAMP quantifies whether the issue is a barrier and raises awareness of areas of need and need of provision to be built in as language has an impact on everything else for children do in school. LAMP demonstrated quantity of need' (WSE appendix 1:11b)*

> *'Capacity of time taken to assess needs to be built /planned into school' (W.SE appendix 11.c).*

> *'We sat in the ICT suite doing it and the staff just sat and talked and shared thoughts and ideas. It was sometimes amongst year groups teachers so the 2 Foundation teachers would sit together and work but it also may well be that particularly at the beginning of the year that year 3 teachers talked to the year 2 teachers –that there was some sort of cross year groups because I think that's important and a little bit of moderation' (BHead appendix 11:11d).*

> *'And I went around and spoke to most of them because again I think facets of a child are seen by different people and I think from the point of view of using different staff members so meal time assistants, teaching assistants particularly teaching assistants – I became involved because a lot of the children do come and talk to me voluntarily and I'm out on the playground a lot so I do manage to speak to them then.*

They often speak in a very different way when they're in those Social Skills situations' (BHead appendix 11:11e).

<u>Clearer distinctions between behaviour and language concerns reported</u>

There were indications of changes in practice reported linked to greater awareness of language needs.

> *'Staff are more aware of the possibility of behavioural difficulties being linked to a language skill problem. Practice has changed slightly' (CSE appendix 11:10a).*

In one reported case a newly qualified teacher reported that he had found it difficult initially to decide on the exact nature of children's difficulties, as he was not sure what he was looking for. Were children ignoring him? Was it a selective hearing difficulty? Or was a child not engaging in a lesson by choice or did they actually have an issue related to understanding? He indicated that he had viewed one particular boy, not on the SEN register, as being behaviourally difficult until he had considered the receptive language questions on the LAMP. After using the LAMP screening tool, and witnessing the high level of concerns in the Receptive language scale in particular, the teacher in this example had changed his approach to the boy. He began to respond to him as if he had a receptive language difficulty and began using strategies he felt may help (appendix 11, 10b). This included de-cluttering verbal instructions, repeating them, and providing more visual clues alongside verbal information. The boy then responded positively and his behaviour in class had improved. This could possibly have been explained as the result of a more positive relationship with his teacher, but it was observed that he had difficulties in all areas of the receptive scale of the screen and furthermore responded to interventions that were appropriate for receptive language difficulties. Changes in the teacher's practice had followed increased awareness and accelerated progress was made by the child. It would be fair to say that there is some indication that without the LAMP screening process this particular teacher may well not have made such an in depth observation and analysis of the child's difficulties. There was a lessening of scores of concern in all 4 areas of the LAMP screen for this boy in the second screening. This overall improvement

131

may link to the interwoven nature of linguistic competences as discussed above. The child's improved confidence in language related tasks in the classroom may well be expected to have a positive impact on behaviour and social skills and further reduced the mean of these areas in terms of concern score.

Kane et al, (2008) identified that larger student gains were identified in classes where pupils felt that the teacher will confidently and efficiently help them to overcome barriers to learning. It also highlights the important role of appropriate support for children who have comprehension difficulties.

<u>The value of reflection was raised</u>

It was clear that post S1 certain teachers looked much more closely at children's performance with a new awareness of the value of informed reflection as these next 2 quotes illustrate:

> *'Could see the benefit of whole child approach as I had to look back through and see the whole child result' (WNQT appendix 11:10k).*

> *'Advantage – I think more about children in class and where any issues might lie. Using LAMP gives a reason to take the time to stop and think about – reflect on children' (WNQT appendix 11, 10m).*

Important aspects related to making judgements was commented upon. Comments included being aware of the mood of the class and the personal perception of the teacher.

<u>Evidence of increased whole school motivation and forward planning</u>

Teachers also reported evidence of whole-school motivation and forward planning as the LAMP screening helped to form a more coherent idea regarding the needs of the class. This is evidenced both in the teacher skills questionnaire responses and in the focus group themes shown in table 93 in appendix 10.

132

Aim 3: To assess the quality of LAMP as a screening tool

RQ 14: What level of internal reliability was established for the LAMP screen used by the teachers?

I examined the questions in each scale of the LAMP screen in order to confirm that the statements did relate to each other. Cronbach's Alpha was used to establish the level of internal reliability of the LAMP screening tool. Values were found to be between 0.88 and 0.96 for the 4 LAMP scales Expressive, Receptive, Behaviour, and Social Skills. This indicated that ratings on the LAMP items clustered coherently and thus could be considered to provide satisfactory levels of internal consistency. Table 94 in appendix 10 shows internal consistency of Cronbach's Alpha levels for the 4 scales of the LAMP screen.

RQ 15: How reliable was the LAMP screening tool for use in this study?

15a. In terms of the relative position of pupils' functioning?

To establish a level of test re-test short term reliability regarding the integrity of the LAMP screening tool, 36 LAMP screens were completed by 6 teachers in a City Primary school. 2 weeks later, without prior notification, the same teachers were again asked to complete the screens on the same children. The teachers were instructed to complete the 41 questions on the screen in reverse order to make it less likely that they would remember their previous pattern of scoring and repeat it. The 2 sets of data from the screens were then analysed. A Spearman's Rho correlation was calculated in order to determine the relationship between S1 and S2 on each of the 41 questions and then on each of the 4 scales on the LAMP screen.

The correlation between the screenings 2 weeks apart was highly significant at the $p < 0.01$ level (2-tailed) for each of the 41 questions on the LAMP screen. Table 95 in appendix 10 shows the test/re-test correlation coefficient for each of the forty one questions on the LAMP screen.

133

Despite some variation in ratings for individual questions there was a strong, positive correlation for all 4 scales, Expressive, Receptive, Behaviour, and Social Skills between the first and the second trial. Correlation between the overall ratings on S1 and S2 was highly significant at the $p<0.01$ level (2-tailed), (mean rs=0.84, <Eta=0.01).

Correlation being found to be significant at the $p<0.01$ level (2-tailed), the LAMP screening tool was judged to be a sufficiently robust instrument in terms of internal integrity with regard to test-retest reliability for the purposes of the current study (for the purposes of the current study see table 96 in appendix 10).

15b. How consistent was the screening tool in terms of recording changes in functioning levels?

The data was inspected to ascertain whether the changes in teacher scoring were reasonable over the 5 month period of the study. The levels of concern recorded by the teachers in each school were examined. It was apparent that between S1 and S2 there had been a change of some significance in teachers' recording of concerns. This needed to be examined in terms of the reliability of the screen to support consistency.

Close inspection of the data indicated that despite some variations there had been an overall decrease in the teachers' total mean concern score ratings. Changes were seen in the pattern of scoring by individual teachers at S2 screening for all 4 scales on the LAMP screen. Of the 27 teachers in the 3 schools, 23 recorded a lower level of mean concern for their class on the second screening. 1 teacher at Oak school recorded no change and after due consideration this data was noted but discounted in the analysis. 3 teachers at Beech school had recorded a higher mean level of concern in their class on the second screening. The mean score of 3 teachers in Beech increased from S1 to S2 by a rating of 14.37, 2.33, and 1. Table 97 in appendix 10 shows the comparison of 27 individual teacher mean ratings of scores of concern from S1 to S2 for their classes.

134

The highest decrease in concern ratings was 29.38 at Cedar school and the next 2 scores between 17 and 19 were also at Cedar. The 4th highest decrease was at Oak (>16) then Cedar and Beech (>15). The rest of the rating score decreases ranged from 0 to >15.

The differences in the teachers' decrease scores in each school was then compared with a collective mean calculated by taking the mean for the 3 schools together. Figure 41 in appendix 10 provides a graph showing the amount of decline in teacher's mean score of class level of difficulty from S1 to S2 in comparison with the mean decline score for the schools as a whole.

Figure 41 shows that 4 teachers (numbered 1, 2, 3, and 4) were well over the collective mean and 2 teachers (numbered 5 and 6) had a mean just above the collective mean.

It was important to the outcomes of the study to ensure that such a magnitude of decrease could be explained by factors other than weakness in the reliability of the LAMP screening tool over the 5 month period in which the study was conducted in the 3 schools.

For Oak, 9 out of the 11 teacher's scores were well below the collective mean score, one was just above the collective mean, and 1 teacher, no. 14, was well above the collective mean. All of Cedar's scores were above the collective mean. Teacher 2, at Cedar, had the highest amount of difference in concern score at 29.38. For Beech out of 10 teachers 5 scores were well below the collective mean.

<u>Inspection of the individual data for patterns of reduction</u>

The scoring data of the teacher no. 14 with the largest reduction in scores was chosen as an exemplar and was inspected to identify any anomalies.

The Expressive scale as scored by this teacher from S1 to S2 is used as an exemplar. Of the 12 scores of concern given there are 9 instances of reductions from 1 to zero; i.e. _sometimes_ a concern moving to _never_ a concern.

135

There are then 3 instances of scores staying the same at _never_ a concern. This gives a total change further of 9 points in one scale.

Table 98 in appendix 10 provides a sample of the marking of scores of concern by this teacher (2) in Cedar who had the largest reduction in scores of concern in S2 of 29-38 across the total LAMP scores.

This information contributed to an explanation of the nature of the overall change observed in the patterns of teacher concern ratings between S1 and S2. Although some ratings were seen to increase from S1 to S2, the magnitude of change appeared to be underpinned by an approach to change led by careful consideration on the part of the teacher. This pattern suggested a pattern of reasoned professional judgement by the teacher based on observed child performance rather than being suggestive of large unexplained swings when the teacher was marking the screen. When I compared this with other teacher attribution of concern scores I found a similar pattern and I felt confident in taking this as an indication of the reliability of the LAMP screen over the period of the study.

The meaning of the LAMP screen descriptors had not changed for the teachers. What had shifted were their professional judgements.

An example of a Crosstabs analysis of changes in ratings S1 and S2 on the Receptive scale of the LAMP screen

The crosstabs enabled inspection of the shifts in the pattern of teacher ratings of concern over the 3 schools, Cedar, Oak and Beech, in relation to the Receptive scale of the LAMP (table 19 below). One school was dropped due to incomplete S2 data).

Table 19 Crosstabs showing changes to percentages of the number of times these frequencies, never, sometimes, frequently, constantly are found overall S1 to S2; LAMP Receptive scale.

			S2 Receptive				Total
			Never	Sometimes	Frequently	Constantly	
S1 Receptive	Never	Count	281	14	2	0	297
		% within S1 Receptive	94.6%	4.7%	0.7%	0.0%	100.0%
	Sometimes	Count	43	27	8	1	79
		% within S1 Receptive	54.4%	34.2%	10.1%	1.3%	100.0%
	Frequently	Count	5	12	7	1	25
		% within S1 Receptive	20.0%	48.0%	28.0%	4.0%	100.0%
	Constantly	Count	3	0	3	2	8
		% within S1 Receptive	37.5%	0.0%	37.5%	25.0%	100.0%
Total		Count	332	53	20	4	409
		% within S1 Receptive A	81.2%	13.0%	4.9%	1.0%	100.0%

The crosstabs analysis shows changes are again predominantly one point changes. The analysis of the LAMP screen Receptive scale crosstabs shows a pattern of small shifts in scoring reflecting teacher's amended decisions. Table 99 in appendix 10 shows a Crosstabs analysis demonstrating changes to percentages of the number of times these frequencies, never, sometimes, frequently, constantly are found overall S1 to S2 for the LAMP Receptive scale.

This analysis of the Receptive scale shows that for 95% of the time *never* ratings at S1 remained as *never* at S2 but only 34% of *sometimes* ratings at screen1 remained as *sometimes* at S2.

54% of *sometimes* concern scores at S1 decreased to *nevers at S2*, while 11% of *sometimes* concern scores became more frequent with just over 1% moving into constantly. None of the *never* scores S1 moved to constantly ratings S2.

Only 28% of *frequently* ratings at S1 remained as *frequently* at S2; 68% of *frequently* ratings reduced to *sometimes* or *never* ratings at S2 and only 4% became *constant* concerns.

Only 25% of _constantly_ ratings at S1 remained so at S2, all became _less frequent_ at S2, with 37.5% moving into _sometimes_ scores and 37.5% into _never_ score.

This observed pattern of scoring shows how the _sometimes_, _frequently_ and _constantly_ ratings reduced from S1 to S2. Again the reliability of scoring is not put in question by variable levels of reduction because small changes in judgement on the 41 questions on the screen can allow for high nominal decrease without signalling large swings of opinion on levels of language concern. Indeed the crosstabs shows reasonable drops from one level of concern to a lower level.

RQ 16: What was the factor structure of the LAMP screening tool?

Though Cronbach's Alpha showed internal reliability, it was important to also check the pattern of inter-relationship between all the statements. A factor analysis was made with varimax rotation of the data. For S1, 4 scales showed 4 factors with Eigen values above 0.4 using SPSS. Table 100 in appendix 10, shows how each LAMP question in each LAMP scale loads onto the 4 components in the Varimax Rotation analysis. The LAMP statements which loaded on factors above the 0.40 level are marked.

The first factor was associated with the largest amount of variance explained (23.7%). This factor had all the expressive statements loading, but also about 2/3rds of receptive statements. This factor therefore represents a mixed expressive-receptive factor. The next 2 factors, which each explained about 18% of variance, mostly loaded the social skills and behaviour statements. In some cases the same statement loaded on both factors, in other statements they loaded on different statements. Both these factors represent aspects of language use that is related to social skills and behaviour. The 4th factor with the lowest degree of explained variance (10%) only loaded receptive statements. These receptive statements did not load any more highly on the 1st or the 4th factor. However, this 4th factor is the only one with a clearer interpretation as representing 1 area of the LAMP design.

138

4 distinct factors have emerged from this factor analysis of the LAMP statements. The main factor covers mostly expressive items with some receptive ones. This shows overlap between these 2 scales. There is a high loading on Expressive with some overlap of Receptive elements. The Receptive items also load on a separate factor. The next 2 factors pick up some social skills and behaviour items but less consistently.

In conclusion this overall pattern of loadings indicates that there are no clear factors that distinguish between the 4 kinds of LAMP items. However this pattern of loadings is consistent with interconnections between these aspects of speech and language functioning proposed in the Communication Chain (Elks and McLachlan 2000) upon which the LAMP screen was predicated.

RQ 17: How valid is the LAMP screen's data in relation to an established parents' measure of speech and language functioning?

The levels of concern indicated for each child by teachers on the LAMP were compared with levels of parent/carer concern for that child on the GCC (General Communicative Competence level) of the Children's Communication Checklist (Bishop, 2003). Pearson's Correlation (Pearson's coefficient) indicated a moderate correlation of -0.49, which was significant at the $p<0.05$ level (2-tailed). Table 101 in appendix 10 shows this moderate correlation between GCC and LAMP concern scores. The GCC is coded inversely to the LAMP i.e. a high score on LAMP would suggest a low score on GCC. Therefore as LAMP scores went up GCC scores went down to an extent.

To find where the 2 measures converged or diverged a 20% cut off point was used to distinguish between high (LAMP) and low (GCC) concern scores for both measures. These scores were then compared. The scores were found to be matched in the case of 17 out of the 21 children whose profiles were compared.

139

Table 102 in appendix 10 shows the comparison figures between LAMP concern scores and GCC scores regarding convergent or discrepant scores for individual children.

In terms of overall concern based on 20 percentile cut off for GCC (low) and LAMP (top) 81% (17/21: 3 concerns + 14 no concern) of those children identified or not identified by LAMP were also identified/not identified by GCC. 75% of those children identified by LAMP as having SLCN were also identified as such by the GCC. 82% (14/17) of those children identified as having no concerns by LAMP were also identified as having no concerns by the GCC. However, 18% (3/17) of children who were not identified by the LAMP with this cut-off were identified by the GCC as having language concerns.

Table 103 in appendix 10 shows identification of overall concern based on the 20 percentile cut off for GCC (low) and LAMP (top).

Overall, the finding that 17/21 or 81% of those identified or not identified by LAMP were also identified or not identified by GCC showed that teachers and parents were likely to be observing the same difficulties that presented in both environments thus increasing the likelihood that teacher's and/or parent's observations were valid. These findings are felt to support the validity of the teacher concern scores on the LAMP screening tool.

Chapter 6 Discussion of results

Introduction

The following section covers three main phases in the research data as follows:

1. LAMP results S1 and S2 analysed for patterns of concern scores that demonstrate changes to teacher awareness of SLCN.
2. Teacher perceptions of the screening process.
3. Validity/reliability of LAMP screening tool examined.

The discussion of the findings is organised under each of the Research Questions.

RQ 1: What does the distribution of LAMP scores tell us about the impact of the LAMP on teacher identification of language need?

There was a clear shift in the distribution of teacher concern scores over each of the 4 LAMP scales from S1 to S2. There were individual variations in teacher scores but the decrease in the overall mean score of concern for each school from S1 to S2 was at a level of statistical significance. Willow's S2 data had been withdrawn by the researcher after careful consideration.

My starting assumption was after using the structured LAMP language screen with children, teachers were enabled to focus their attention upon the specific nature of communication needs. Furthermore perceptual shifts would occur and allow the teachers to begin to develop new threshold concepts such as those described by Meyer and Land (2006).

In order to do justice to the complexity of the interactions observed within the teachers rating data it was important to explore the underlying processes involved. I needed to ask why increased awareness linked to LAMP screen use might lead to lower ratings when it could equally be argued that it might lead to raised ratings.

My assumption was that at the first experience of completing the LAMP teachers were anxious not to miss any child's difficulties so the bias was to high scoring. Teachers were worried initially that they were going to miss something important, or be seen to do so, and when in doubt there is a tendency to score moderately. Thus teachers tended to give ratings of 3 rather than 2. Indeed inspection of the crosstabs information confirms that most changes to rating in S2 were mostly by 1 point.

The second time teachers carried out the screening they had observed the children over two terms with the LAMP screen questions in mind and maybe saw that the problems were neither so prevalent, nor as severe as they had initially thought. With time therefore teachers had become more aware, more confident in their judgements after consideration, and as a result to record lower ratings where appropriate. This process appeared to be experienced by teachers as an increase in confidence in identifying SLCN in the children in their classes as observed in their skills questionnaire and Focus group feedback. The teachers fed back that they had experienced an upskilling effect i.e. that they felt themselves to be more aware of the differences between atypical language function and developmentally age appropriate language function. This heightened awareness did not arise from awareness raising on my part between S1 and S2. There was no direct feedback from me nor from SMT that could be considered to have contributed to a change in rating by teachers. Therefore it is reasonable to assume that any changed knowledge came from the teachers having completed the first screen and having observed the children over a further 5 month period with the framework of the LAMP screen questions in the forefront of their minds.

Certainly there was evidence in the responses to the teacher skills questionnaire that suggested new ways of thinking about the presentation and the nature of linguistic function (appendix10, figures 39, 40, 41). Teachers reported improved awareness of different aspects of SLCN and were more able to make adjustments to remove potential barriers to the children's progress.

Looking retrospectively at their initial scoring of their skills questionnaire, teachers judged that their pre LAMP study scores had been artificially high in several areas showing overconfidence in their awareness and skills at the beginning of the study (appendix10; figure 41). However, as teachers' scores relating to their awareness and skills at the end of the study were higher than those at the beginning, it suggested that they had experienced a quite definite change to their existing knowledge base. This is consistent with crosstabs data which suggested that changes in teacher ratings were of a moderate nature reflecting informed judgements from a position of increased knowledge. As indicated above, no additional information supplied to the teachers between the two LAMP screenings. Changes in knowledge were most likely to have come from increased reflection between screens with the LAMP framework of questions in mind.

The impact of pupil mobility factors

Beech and Cedar schools had a particularly high mobility factor of 26%. Ofsted (2008) remarked on the high number of children who had been managed out of their previous school and placed in Beech for a fresh start. For these children it will take time to settle and to respond to the supportive interventions provided for them in their new school environment. Having time to assess the children's needs when they come into school was therefore seen as an important factor by the Head Teacher (appendix 11:2e).

A head teacher in the focus group gave her thoughts about reasons why teacher's ratings increasing for children in the second screening. The first was that speech and language difficulties may not have been so apparent prior to the screening then, when teachers had observed children more closely with the aid of the LAMP screen, they were more likely to see these difficulties for what they were (appendix 11:7a). Also an experienced teacher said that children were being given increased consideration for their language needs between S1 and S2 and this could mean that maybe those difficulties were more apparent the more they spoke in class (appendix 11:8c).

143

The scale of change varied over the 4 scales of the LAMP

In the first LAMP screening children had been judged by their teachers in all 4 schools to experience more difficulties overall on the scales of expressive and receptive language than behaviour linked to language and social skills. This pattern continued in S2. A possible reason for this finding is that teachers have historically been supported to develop confidence and skills in recognising and supporting behavioural and social skills difficulties. Schools have a long established expertise in supporting children's social behaviour. This is largely in recognition of the negative impact poor social skills and behaviour can have on learning in the classroom (Gray et al, 1999). School-wide practice and policy on discipline is widely researched and funded by the Education Department (DfE, 2010: DfE 2013). It is reasonable to assume that teachers are quite confident in their ability to identify behaviour and social difficulties and that there are interventions in place in most classrooms to support behaviour and social skill development. But It has been commented upon in recent years that teachers may not be so aware that some behaviours may be indicative of difficulties with language function (Snowling, 2008; Bishop, Barry and Hardiman, 2012; I Can, 2012.). Teachers may need further structured support to be able to identify the subtle underlying atypical language functioning where this exists.

It this study it is possible that teachers marked the LAMP screen generously at S1 and after having time to reflect realised that the behaviours observed were not based on a language concern thus overall scores went down in S2. However there was also some evidence within the focus group contributions which revealed some changes to teachers' practice (appendix 11;10a.10f,10h) and one pupil was definitely reported to have improved his behaviour and attitude to learning due to changes the teacher made in his strategies (appendix 11,10b).

The meaning of reductions in receptive language difficulties scale

In light of the difficulties teachers are reported to have when identifying Receptive language difficulties it is interesting to note the pattern of changes in

144

the receptive language scale here. National research has established that teachers under identify Receptive language difficulties in the children in their class (Bishop, 2011). Receptive language difficulties are complex and usually long term (Bishop, 2008: Conte-Ramsden, 2009) and do not usually respond quickly to intervention, yet in the second LAMP screening the pattern of mean scores of concern showed a statistically significant decrease for receptive language concerns. In this study teachers have identified a particular level of receptive language difficulties in S1 and gone on to identify lower levels of need in S2. This required some explanation.

Receptive language concerns tend in the main to be the most resistant to change, certainly in the short term (Bishop, 2011). Based on this I would interpret the decrease in receptive language concerns at least in part as the teachers deciding, in the 5 month period of observation after the first screening, that the problems they were observing were not language-based but were due to other causes. In the absence of hard data such as teacher case studies I did my best to use the teachers' perceptions, as expressed in the focus groups and the skills questionnaires completed by teacher's pre and post-project. From these sources I found evidence that screening with the LAMP tool was believed by the teachers and SMT to have served an important role in highlighting to them the areas and presentation of receptive and expressive language and communication difficulty they needed to be most aware of. By S2 teachers had improved their skills in 2 ways. They felt able to identify a receptive language concern with more accuracy and were able to recognise when a difficulty was not receptive language based (appendix 11:8a). The LAMP screen can be seen as supporting teacher's awareness of these receptive difficulties.

RQ 2: What is the incidence of language difficulties based on the data using various cut-off points?

In order to examine the consistency of the patterns of marking in concern scores from S1 to S2 I inspected the changes in data from S1 to S2. The data showed that most of the changes in scoring came from scores of 2 (*frequently*

145

observed difficulty) becoming 1 (*sometimes observed difficulty*) and scores of 1 becoming 0 (*never observed difficulty*) which is a very reasonable change over a 5 month period where teachers have had a period of reflection underpinning their second observations. The repeated measures design of the study had allowed for this. There are some instances of 2's becoming 0, which again is not so unusual particularly where teachers may be adapting their approach to a child in light of new appreciation of their difficulties in relation to language.

I noted 2 teachers in Cedar had given a child in their class a score of concern of 38 in S1. In S2 one of these teachers had raised their original concern score to 62. The other teacher had reduced their score to 3. When I looked at the individual pattern of scoring for these teachers' classes the first teacher had identified higher levels of language concern in S2 for this child and for only a few other children in the class. It certainly did not appear to be a general pattern of extremely high scoring across the class. It increased the sense of balanced reflection when I noted that for other children in the class this teacher recorded decreases.

I did find it unusual, however, that the second teacher whose score of concern for a child decreased from 38 in S1 to 3 in S2. Unless there was resolution of an emotional problem and a settling down it was unusual to see a child's scores decreasing by so much. In the context of apparently normal scores of concern for the rest of this teacher's class I can only accept this result as being due to the child presenting a profile of much reduced language difficulties after 2 terms in class. It may be that initially the child's behaviour was seen as based in a lack of understanding but then it became apparent that the child was electing not to engage or had behavioural difficulties not related to language.

Another case worth noting is that of a boy in a different class who was given a difference of –28 between S1 and S2. He was seen in S1 to _constantly_ have difficulty in all 4 areas of the screen linked to language. By the second screen this child clearly still had widespread difficulties in language but in some areas of the screen he was marked as having less frequent difficulties. The pattern of concern scores suggests that the child was more settled, more vocal and that

146

the teacher was observing him more closely and realising that he did not always have difficulties in every area. Hence the scores of 3's (*constant difficulty*) dropped to 2 (*frequent difficulty*) or 1 (*sometimes difficulty*). In the Expressive scale the child's concern score decreased by 13 points, in the Receptive scale it decreased by 9, in Behaviour scale by 2 and Social Skills scale by 4. It strengthened the case for the validity of this teacher's judgements that the child's ability to process talk quickly, which is not likely to change, did not show a change yet his ability to understand humour did change. This could well demonstrate an increase in confidence and being more relaxed in class for this child. It is also likely that the teacher was noticing this boys' ability in small areas which perhaps had been overlooked before.

<u>When scores of concern increased</u>

4 teachers out of the 24 in the study recorded a higher level of concern in their class on the second screening. 1 of these teachers was at Cedar and 3 teachers were at Beech school. It was possible that the pressure of whole staff transparency caused some anxiety initially among staff regarding their marking of the screen. The Head Teacher of Beech was indeed approached by staff with questions such as what would happen if the children's concern scores had increased in S2 and talked about this in the focus group as something she had anticipated. The Head Teacher had replied that it demonstrated heightened awareness of the nature of language and was likely to be a more accurate judgement.

I would propose that it is reasonable to understand rising scores of concern between S1 and S2 in terms of increased teacher awareness of the nature and indicators of SLCN (appendix 11:7f). Particularly if teachers have been reassured by the Head Teacher they would have felt sufficiently confident to be cautious in the first screening. The increase in scores of concern for the children in S2 could be explained in terms of teachers being able to identify speech and language needs more efficiently in the second screening. This rise in scores was actually most apparent in Beech school where these issues had been discussed with the Head teacher prior to the screening (appendix 11:7h,i).

147

Many factors in the complex life of a school can have an influence upon children's performance and staff skills. Innovations and changes within the school system over the period of the study will have a hidden impact. Undoubtedly when considering the reasons for the observed significant change in the direction of scoring I had to accept that imponderables remained which may be unanswerable by this data set. I accepted that individual circumstances affecting staff and increased maturity of the children will have had an impact on the children's language development. On an organisational level pre-existing levels of knowledge of language development and supportive resources will vary between schools and between teachers within schools. New support packages may be introduced to a school during the life of the project which can impact on SLCN.

In recognition of the above caveat I endeavoured to explore such factors within focus group interviews by giving staff the opportunity to reflect on their involvement in the study and any such intervening impacts they may have observed. The Head Teacher of Beech was very positive about the impact of the LAMP screening, but did say that it was difficult to separate it entirely from the overall processes in the school. It was, however, definitely found to have quantified a need for the teachers which they found useful in planning language interventions at an individual, class and school wide level (appendix 11:10h,j,o). Beech school mentioned the CLLD programme which was in place already.

The next set of RQs looked to see if there would be relationships between language scores on the LAMP screen and the following factors.

RQ 3: What is the incidence of language difficulties based on analysis by gender?

From the available research literature I had expected that there would be differences between mean scores of concern for boys and girls and indeed this was the case. Boys had higher mean scores of concern than girls overall in all 3 schools and this effect was significant at ($p<0.01$) for both S1 and S2. Looking at the individual scales, Expressive, Receptive, Behaviour, and Social

148

Skills this pattern of scoring can be seen again. Boys had higher difficulty scores than girls in all 4 subscales at a statistically significant level (p<0.01).

In Expressive tasks we might have expected the most pronounced differences as available research evidence indicates that girls progress faster in a range of linguistic tasks prior to puberty. Murray and Lawrence (2000) provided a study that found that evidence that girls begin talking earlier while Dobinson et al (2002) found confirming evidence that boys are slower in acquiring vocabulary. Certainly the findings from the current study show a difference at a statistically significant level between boys and girls in mastery of expressive language and communication skills.

It is interesting than that in contrasting Oak with the other 2 schools it was possible to identify a relatively smaller difference between the difficulty scores of boys and girls in the first screening. Although the gender difference was at a statistically significant level in Oak, as was the case in the other 2 schools, it was at (p<0.05) level of significance rather than (p<0.01). Oak also had the lowest mean of all 3 schools for scores of concern for both boys and for girls at S2. The actual drop in mean from S1 to S2 for Oak for both boys and girls was, however, less than the decrease seen in Beech. This could suggest that effective support was being provided to narrow the gender gap and that a ceiling of support had been reached. In Cedar the decrease in mean from S1 to S2 was more for girls whereas in Oak and Beech the decrease in mean from S1 to S2 was less for girls. These variations are unexplained.

A caveat by Özçalskan and Goldin-Meadow (2010) is worth noting. Differences should be seen as being on an age range continuum. If a boy is noticeably behind in his speech and language development within or beyond this range it is not safe to assume that it is because he is a boy as it is possible that the child may require some speech and language intervention.

RQ 4: What is the incidence of language difficulties based on analysis by year group?

Starting primary school is a significant transition in a young child's life. I Can, the national speech, and language charity, recognise that linguistically vulnerable children entering the school environment are more vulnerable because the transmission of learning is conveyed largely through the medium of language. Their difficulties, if not supported, can have a resounding, long-term impact on a child (Goswami and Bryant, 2007: I Can, 2007). With the support available in schools it might be natural to assume that these children would make slower but steady progress through their years of Primary school. As a corollary we would have expected to see a decline in speech and language related concerns for each year group even after taking into account the particular characteristics of each cohort.

The analysis of means for each year group showed instead that there was actually a slight rise in concern scores from year 1 to year 2. Levels of concern then remained steady in year 3 but there was then a noticeable rise in mean scores of concern in year 4 followed by a drop in years 5 and 6. It could of course have been a particular cohort effect but the fact that it was evident in all 3 schools argues against this as an explanation. This decrease related both to the overall mean for the 3 schools and to the individual schools' mean.

From S1 to S2 the decrease in scores of concern was much larger in year 2. Again this is unexplained by the rich picture data from schools, but it is reasonable to hypothesise following Wells (2007) that when the complexity of the curriculum increases and where teachers are less aware of how to identify and support language concerns there will be most opportunity for upskilling.

The impact of the changing complexity of the curriculum must be considered as a factor. Speaking and listening requirements in year 2 are for giving, receiving and following instructions accurately compared with year 1 requirements to be able to take part as speakers and listeners in a group and to ask and respond to questions. The national curriculum again becomes more complex in year 4 in

150

the area of speaking and listening. Teachers with new awareness may well apply themselves to making the speaking and listening components of the National Curriculum more accessible at this critical period once the problems are realised for what they are. In Beech a lot of thought had been invested in the process of assessment of children in each year group using the LAMP (appendix 11:6,h). An interesting facet arises within the analysis of the Expressive subscale which also showed that the decrease in scores of concern was again much larger for Cedar than the other schools. There was an interaction effect between time and year group significant at ($p<0.01$) showing that though scores decrease from S1 to S2 the decrease in Cedar was much larger in year 2 overall. Again this could be linked to the content demands of the curriculum relating to expressive language. Possibly by S2 the teachers had made effective support available to enable children to develop their skills in tasks which required a verbal response.

However investigations would need to extend beyond these 3 schools in tandem, with a close inspection of the National Curriculum demands at the time in order to investigate whether this is a hypothesis which could be generalised in our schools.

RQ 5: What is the incidence of language difficulties based on analysis by identification of need (by Universal, School Action, School Action Plus, Statemented)?

Analysis of the data indicated that between S1 and S2 there were statistically significant decreases in levels of concern in Universal and Statemented categories ($P<0.01$). There was time by level interaction and it represented a lower decrease from S1 to S2 for universal level. This may be due to teachers over identifying language concern as a basis for children's difficulties and realising by S2 that other causes other than language were involved. It is pleasing that the children with recorded SEN had shown a benefit from the LAMP screening process through evidence of a decrease in concern levels and/or increased teacher awareness.

151

Clearly there were far more children in the sample in the Universal category (362) than in the SEN categories combined (45). In the Universal category a large percentage of children in S1 scored 0 indicating _never a concern_, thus when this is taken into account I consider the mean to be relatively high for the remaining children in this category. This could be the children with the milder SLCN, part of the population with the 'hidden disability' referred to by I CAN (2006).

The individual scores were indicated that some children at school action and above received moderate scores of concern in 4 areas of the screen or more serious concerns in 2 areas. However unless language was recorded as the primary concern at School Action Plus and Statement, this was not logged officially elsewhere. This relates to an important point made by Lindsay (2012) when suggesting that from his observations that children with the more severe SLCN difficulties were being registered whilst the lesser, but still concerning, difficulties were not being recorded in any systematic way. LAMP screening provided an audit of language profiles across the whole school and highlighted areas of concern and of progress in an organised way.

RQ 6; What is the incidence of language difficulties based on analysis by whether identified as having SLCN (on the SEN register)?

Analysis in the findings chapter showed that children identified with SLCN status had higher scores of concern for language performance which is expected. The analysis showed highly significant main effects for children who were recorded as SLCN on the SEN register status (at $p < 0.01$).

Schools did again have significantly different mean scores and the decrease from S1 to S2 in mean scores of concern varied in schools and in SLCN/SEN levels. Analysis of the Expressive, Receptive, Behaviour, and Social Skills scales by SLCN on the SEN register did not vary from this pattern.

I attempted to compare the LAMP concern scores of those children identified as having SLCN and recorded on the SEN register in each school at case study level. But this did not work well because of the frequent lack of comparability between a child's scores on the LAMP screen and their language concern level recorded in the SEN Register. Looking at case by case I discovered that there were cases of children with high concern scores on the LAMP showing they had a high level of SLCN in their teacher's opinion but who were not recorded on the SEN register. Other cases showed children recorded as SLCN on the SEN register who did not have as high a degree of difficulty on the LAMP as the children within the LAMP's top 10% of high scores of concern.

This data indicated to me that there may be inconsistencies in schools when identifying children with SLCN within the terms of the Code of Practice. I recognised that this was likely to be related to the need to raise awareness and accurate recording of all forms and levels of SLCN within schools.

RQ 7: What is the incidence of language difficulties based on analysis by speaking and listening levels?

Speaking and listening levels are expected to be recorded in schools and should contribute as part of the language profile of the children in a school. However it is not consistently recorded in all schools. The Head Teacher of Beech reflected on the useful impact of LAMP in this area (appendix 11:13a). Although we did not have speaking and listening data for every child in this study there was a sufficient body of results with which to make some comparisons. Analysis showed speaking and listening levels and the schools to have significantly different mean scores ($p<0.01$). The decrease seen in total scores of concern in S2 varied significantly in schools and in speaking and listening levels ($p<.05$). The pattern for the 4 scales differed. Expressive and Social Skills scale concern scores showed a significant difference from S1 to S2 but for Receptive and Behaviour scales the difference in scores of concern between S1 and S2 was not at a level of significance. This can be interpreted as being consistent with the research that shows that receptive language

153

difficulties respond less quickly to intervention and results in curriculum terms are slower to develop. Social Skills and Expressive skills are outwardly represented and more easily observed and this could lead to closer monitoring of concerns.

Schools are already expected to be very geared up to identify and support behavioural difficulties and this is likely to have an impact stabilising the on-going level of concern. However in the focus group the LAMP contribution to the identification of links between language and behaviour was recognised (appendix 11:8i).

RQ 8: What is the incidence of language difficulties based on analysis by EAL?

There were eleven children in the study with English as an additional language. The total mean score of concern was high (mean 21, sd 20) in S1. In the second screening this dropped to mean 17.45 (sd 16.18) which, though a decrease, is still a score in the higher range. It should be noted that one child in the sample, recognised as SLCN, had a high score of 40 which increased the overall mean score.

4 children in this sample had identified hearing difficulties. The mean scores for these children in S1 were 14, 4, 2, and 40, this last being a high end score. The total mean for these 4 children was 15 (sd 31.82). In S2 this had fallen for 3 children and risen for 1. The mean scores in S2 were 2, 6, 8, 2, and 34, with a total mean of 12.5 (sd 26.52) (table 14 and figure 7 – pp.113).

However, a striking finding from Dockrell and Lindsay's (2012) research was that primary schools need to be supported to better distinguish between difficulties that are related to EAL and those which are attributable to SLCN.

It was apparent here that EAL combined with hearing difficulties does not entail language difficulties necessarily (Martin and Miller, 1999; DfES, 2004). This was consistent with advice to schools that children with English as an additional

154

language will not necessarily have language difficulties where their language system is essentially intact (NALDIC, 2013).

RQ 9: The relationship found between language scores on the LAMP screen and the school's designation of high or low deprivation status.

Local Authority funding for schools is influenced by indices of deprivation. Due to this it might be expected that the schools with low deprivation indices would record higher levels of needs in all areas of learning including language and communication. However on inspection of the data it was apparent that this supposition was only partially correct. The analysis of the data from the first LAMP screening (S1) showed the mean concern scores for each school as Cedar 38.62% (LD); Willow (HD), 39%; Beech 23.34% (HD); Oak 11.65% (LD) (where HD is high deprivation and LD low deprivation). Cedar fsm was 7.89% more similar to Oak's fsm uptake which was lowest of the 4 schools, at 3.68%. Also at Oak the teachers recorded the lowest level of language need. Albeit there was evidence that language concerns affected 11% of the pupil population.

In S2 Beech concerns had risen slightly to 23.35% (Data from Willow was not included in the S2 analysis). Surprisingly the difference in mean scores of concern in S2 between Cedar and Beech, 2 schools with different deprivation status, was minimal at <2%.

Cedar, despite similar indicators to Oak, stands out as having a high concern score with a low deprivation status. This appears to run counter to the hypothesis that children in high SES schools are unlikely to be as vulnerable to SLCN as are children in low SES areas. The apparent disparity between Cedar's high SES and high LAMP mean concern score may be explained by the way in which deprivation indices are calculated on a pupil population. Cedar school is within an urban area with an Idaci score in the higher band (appendix 10, table 105) but had a fairly mixed intake from mixed socio-economic conditions. Cedar was reported by the Head Teacher to have a

155

significant number of families who experience socio economic challenges. However, this is not reflected within the free school meals uptake for the school, as families may well not be claiming fsm.

An additional factor that differed between the 2 schools Cedar and Oak with the same low deprivation status given by the LA was the level of pupil mobility. Two figures, mobility, and stability are used in the national annual reporting to describe the 100% picture of the school. For example if a school has 20% mobility it will have 80% stability. The national mean for stability in primary schools in 2010 was 86% (Ofsted 2010). Cedar, Beech and Willow had far lower stability, 70-76.1%. Oak's stability figure of 92.3% was above the national mean giving a picture of settled experience for the children and their families and this will have given teachers more time and opportunity to observe patterns of language behaviour prior to the start of the study.

There is more family movement and therefore less stability in Cedar than in Oak. The Head of Cedar in the Focus group discussion indicated that there were high numbers of military families who moved regularly. Ofsted also reported this (Ofsted, 2008).

Cedar school traditionally attracts pupils from the Service accommodation nearby and therefore has a large cohort of children who are in Forces' families. It must be a consideration that Cedar had a higher than average number of households with a member of the family directly involved in the theatre of war in the year of the screening. Many families had been affected by active engagement in the Afghanistan conflict. There is documented evidence that in times of military conflict Forces families experience increased stresses (Cross, 2009). Children at Cedar could have left or joined the school at any point in the school year. The nature of this mobility may not have been linked to economic deprivation factors. It might though signal higher than average levels of stress in the families involved. Stress factors can have a similar effect on the child's developing language systems as can the effects of material deprivation as discussed above by neurobiologists Noble (2008), and Farah (2008). Problems with early linguistic skill development may be attributable to factors as

156

previously suggested in the literature such as stress on family members (Noble et al, 2007: Farah, 2008) or time available to parents (Palmer, 2006). A paucity of time and consistency of experience can arise from high mobility factors and this can impact on the establishment of regular habits of reading together or talking together. Could there be an overall lowering of children's language skills here when stress factors are connected with higher mobility?

The Head Teacher of Cedar discussed a further mobility factor related to large groups of travelling families who leave and re-attend at different times during the year. This was not mentioned in the 2008 Ofsted report. Inclusion in the authorities' data would depend upon children being in school at the time of the census in order to record this factor. The class dynamics change throughout the year with the inclusion of different children. Prior knowledge of the child in the class is important when screening for language needs. Children entering the school in the spring term will not have settled by February when the first screening was in progress, but by July may have settled and so, teachers are likely to be more aware of the nature of their needs.

The Ofsted report (2008) for Beech outlines similar characteristics to Cedar. For some reason these have had less impact on children's language skills. The mobility factor here in Beech is more related to pupil behaviour and management than family movement, but still suggests families in some turmoil. A difference in the nature of the mobility factors between their school populations seemed to be that, in Beech there was a high percentage of transferred pupils which included a number of pupils who had experienced difficulties in other schools (Ofsted 2008).

But these pupils remained in the school, whereas in Cedar the children from Forces families experienced further moves. Longitudinal research by Temple and Reynolds (1999) had found that it was the frequent, rather than occasional, mobility that served to significantly increase the risk of academic under achievement.

157

Stability within the school gives teachers the opportunity to make a gradual and incremental assessment of each child's progress and needs. Changes in pupil cohorts throughout the year will have an impact upon teacher knowledge. It is therefore suggested that a pattern of low stability/high mobility had a role in producing the higher scores in both S1 and S2 in Cedar where teachers may not have had the same opportunities to get to know the children. Mobility and fragmented school attendance can have a negative impact upon a child's skill development and confidence and also make it more difficult for their teachers to detect any subtle language difficulties. Although Cedar's absence figure of 4.7% is less than Beech's at 6.2% it is higher than Oak's which stood at 3.4% and it does not include all Travellers data for Cedar. Certainly the teachers in Cedar had much higher S1 scores and made the most decrease in S2. If this pattern is taken to indicate a rise in professional awareness then teachers in Cedar had the most need for this input. I would argue that this need not due to a lack of skill but a lack of opportunity to observe and reflect on pupil progress due to higher frequent pupil mobility. I propose that increased stress factors linked to family factors and increased frequent mobility had a further impact upon the language skill of the children as demonstrated in the consistently higher mean LAMP concern score in comparison with the other schools in the study.

The impact of funding and provision

The Ofsted report (2008) for Beech described the manner in which the *'determined, energetic leadership by the head teacher and senior staff' had promoted improving pupil progress.* Different levels of language provision and preventative support in school may therefore be implicated in levels of support available for language. The Head Teacher referred to this in the focus group discussion The Head Teacher indicated that the school had put a lot of interventions in including the CLLD project led by the Local Authority. This was seen to have had a positive impact on the children (appendix 11:1a)*.*

158

<u>Concluding remarks</u>

In terms of the initial research question as to whether a schools' economic deprivation designation is the key factor in identifying language function it appears that this is not necessarily the only critical factor. Much depends upon accurate identification of the key factors within the school intake. There is some research evidence here which suggests that although SES certainly played a part in language skill development and function in the classroom, it was not necessarily the social economic status allocated to the school which was the best indicator of need. Factors such as emotional stress, moving area and changing school are likely to have exerted an influence on children's language function. The strongest predictor of performance-disadvantage in reading and mathematics in school was found by Mehana and Reynolds (2004) to be where there was a cumulative effect from frequency of mobility, with socio-economic status and initially lower ability levels having an effect.

Mehana and Reynolds (2004) also found indications that the quality of the school support had a clear impact upon a child's ability to improve despite continued movement between schools. For Beech with a high deprivation status the S1 LAMP scores were lower than would have expected in comparison with the other schools, even compared to Willow school which had a similar population. A factor common to both Willow and Beech was the enhanced access to funding which is allocated by each LA for schools with a high deprivation index status. When compared with Cedar this would mean that Beech and Willow, while sharing common population had more economic freedom to resource their supportive and preventative initiatives.

Quality teaching and support has a protective impact. But good teaching has more recently been found to make a limited impact where there is high population mobility (Gove, 2012).

Mobility and stability factors play an important role in teaching and language learning in Primary schools. The type of mobility, occasional or frequent must also be taken into account when considering impact on pupil skills. Frequent

159

moves leave the child more vulnerable to problems in learning. In the schools in this study Cedar stands out as having high LAMP concern scores. Cedar has a low deprivation status but also a mixed intake but also has a high level of mobility that involves frequent moves. There are also factors across the school related to potential stress in the families.

Stress in the family has been shown to have an impact on memory and learning (Noble 2008). This finding provides some challenges to the 'verbal deprivation theory' of underachievement of language function in its strong form initially proposed by Bernstein (1961). There is some indication in the findings in the results of this study that low socio-economic status is not providing the only limiting factor. The indications here challenge the current position that the most efficient indicator of language need is based on post-code information.

RQ 10: What is the incidence of language difficulties based on analysis by children with/without free school meal entitlement (FSM).

The previous RQ analysed the data by school. In this RQ economic deprivation at an individual family level is analysed. The school and family indicators are closely linked but sufficiently separate to warrant separate discussion.

Beech and Willow both had HD status and comparable number of pupils with fsm. The fsm figure for Oak and Cedar LD status was comparatively low. In S1 the mean for LAMP scores of concern of children with fsm entitlement (30.3%) was higher than those of peers who did not have fsm (19.24%). In S2 mean concern scores dropped to 23.7% for those with fsm and 13.13% for those without fsm.

An interesting finding is the difference between schools. A level of significance, ($p<0.05$) was found between schools. All 3 schools made a significant difference but the difference between them was significant too. Cedar had the largest decrease in concern scores compared with Beech and Oak when compared by fsm. Findings appear to be indicating that the combination of individual home circumstances and family experiences have a stronger impact

160

on the children's' language than the economic banding of the school. This is a finding that may need to be considered separately from the impact the school locality deprivation indices may have. This has been argued elsewhere (Roulstone, 2011). Taken together the information from RQs 7 and 8 should be interesting for policy makers considering markers for funding parameter.

RQ 11: What were the teachers' experiences and perceptions of the practicality of using the LAMP screen?

Few difficulties were identified with the actual marking of the questions on the LAMP screen. An experienced teacher had reported that she had experienced no problems (appendix 11:4a). This teacher had described the process as '*Straight forward' (*App 11 4n). A newly qualified teacher had suggested that more guidance was needed on what was meant by the rating 'sometimes'. They queried whether <u>*sometimes*</u> mean, for example, once a lesson/once a day and so on (WNQT appendix 11:5h). I had included this key area linked to moderation in my initial information session with teachers but the school in which this teacher carried out the screening had been given the initial session by the school SENCo using my materials*.*

One of the Head teachers had expressed an opinion that the screening process was a useful investment in terms of teachers' time and felt that after going through the process the staff had seen many benefits of it to them *(*appendix 11:5g*).* From this my assumption would be that the teachers' opinion of the practicality of the LAMP screening process was likely to become increasingly positive with further use. Certainly it was reported by 2 teachers that the time taken to complete the screen decreased considerably on the second screening.as they became familiar with the questions and the process (appendix *11.6f).*

<u>The impact of increased reflective practice by teachers</u>

A strength in the LAMP methodology was the repeated use of the LAMP screen to inform the judgements of the class teachers working with the children. Over

the 5 month period of the research there was time for judgements to form taking many viewings of the child's behaviours into account (appendix 11:6b). There was some evidence that teachers believed that changes in their awareness arose from changes in their perception of what a language need looked like in the classroom led by the LAMP framework of questions (appendix 11:8h). This is the type of improvement in awareness that can lead to improved practice that Bercow (2008) and Lindsay (2008) believed was necessary for teachers In the area of SLCN.

The impact of teacher judgment styles

Rheinberg et al (2000) found that teachers judge pupils' progress in one of two main ways. One way is to create a whole class standard by which to judge each child. The other way is to make on-going judgements against the past performance of each child individually. This is local norm-referenced and criterion-referenced over time. The latter was seen by Rheinberg to be most supportive of the position of low achieving students as it is more focused on the smaller gains a less able child may nevertheless make. Rheinberg reasoned that comparison with higher achieving peers is likely to draw attention to this child's slow progress more sharply and to draw attention away from the small steps the pupil may be making. An implication of this analysis is that the classes in this study with the most marked levels of concern in S1 could have been with teachers who were not already using individual child judgements. It could be argued that teachers whose standard or reference criterion had previously been class based, realised that there were underlying difficulties that they had not previously realised and therefore the class standard needed to be reassessed using individual standards to provide a new frame of reference. It could be that these teachers changed their previous mode of assessment and in S2 made each child their own comparator with the benefits suggested by Rheinberg for the child with difficulties. This would have resulted in a decrease in concern scores as teachers recognised the achievements of the language challenged child rather than comparing them to higher achieving peers. This could suggest that there is some potential for the LAMP screening to create a

162

shift in teacher focus towards individual based standards. This was supported by a comment from a SENCo surmising that as a practitioner she came to feel that she may be having an impact on the performance of children in her class through the changes in the way she reflected upon their needs (appendix 11: 7g).

RQ 12: How did the teachers evaluate the screen and its impact on their awareness, skills, and confidence in the identification and support of children with speech, language, and communication difficulties?

The research literature highlights the lack of confidence teachers feel in identifying language difficulties. This was reflected to some extent in the teacher responses to the self-perception questionnaire (appendix 10; table *92).* There was a rise in mean, albeit small, in teachers' responses in the second skills questionnaire that indicated improved professional confidence (appendix 10; table *92).* This was consistent with the teachers' assertions in the focus group discussions that they had felt professionally up skilled to some extent through using the LAMP screening tool with children in their class.

In the focus group discussions a barrier to completing the screen initially was seen as teacher time and lack of confidence regarding what a language and communication difficulty or its impact looked like. However, teachers expressed increased confidence by S2 (appendix 11:9f,g,h). An additional gain was noted by an experienced teacher who found that the LAMP scores backed up her SSP results and said that this increased her confidence in her decisions (appendix 11;9e).

An unexpected finding was that the LAMP increased some teacher's confidence in their existing level of skills in identifying language related concerns. Several teachers came to believe in the face of the evidence that their knowledge was better than they had at first thought, but they had more *confidence* in their skills at the end of the study. A SENCo talked about the teachers' initial natural

163

feeling or 'gut feeling' about the children and how it often was found to be similar to the more considered rating in the second screen. Indeed the ratings had differed only moderately for the majority of the teachers (appendix 11:6e).

RQ 13: To what extent did the teachers report any changes in their practice as a result of using the LAMP screen?

Several instances of changes to awareness leading to changes in practice in the classroom were provided. A slight but noticeable change in practice had been noted (appendix 11:10a). A Head teacher reported that Staff were more aware of the possibility of behavioural difficulties being linked to a language skill problem. Minor changes were made in one school to class seating so that children with language issues faced the teacher rather than having their back to the teacher.

A newly qualified teacher described changes to classroom organisation. This teacher also reported that his own strategies had changed and felt that this had had a positive impact on the pupil (appendix 11:10b). Further comments supported this noted change to practice resulting from LAMP.

Raised awareness of observing issues' was commented on in the Focus group (WNQT appendix 11:10f).

There were also comments from staff regarding future changes in practice using that LAMP information as much as possible to plan support as there were real possibilities as to how to use it practically (WNQT appendix 11:10c) (CSE appendix 11:10d).

Whole school impact

The universal nature of the screening contributed a school-wide view of need. The Head Teacher of Beech felt that the awareness generated by the screen had brought about a particular whole school view regarding the importance of identifying language skills. A SENCO said that the school wide results from the

LAMP screenings had helped the school to plan their next steps as a school. Based on the profile of need this had raised (appendix 11:10i).

Atherton (2013) proposed that once a group professional frame of reference is acquired within a school this will assume an essential part in guiding and forming the staff's perceptual processes in their practice. I would propose that an adoption of a process such as LAMP screening by a whole school with the full and active support of senior management had a significant impact upon the way SLCN was viewed by staff and that this had an impact on teacher levels of motivation and engagement (appendix 11: 11a).

RQ 14: What level of internal reliability was established for the LAMP screen?

It was an important finding that the LAMP items clustered coherently within each of these 4 scales (Cronbach's Alpha) as the data collection rested heavily upon the screen.

RQ 15: How consistent was the screening over a short period such as that of the 5 months in this study:

15a. in terms of the relative position of pupils' functioning?

The LAMP screen demonstrated test/retest reliability in a trial in a separate Primary school prior to the start of the research study. The results of the first and the second test when analysed showed a strong, positive correlation between all 4 scales of the LAMP screen, Expressive, Receptive, Behaviour, and Social Skills. Over the sample of 36 children the overall correlation between the mean of S1 and S2 was highly significant (mean rs =0.84, Eta=0.01) (2-tailed). There was no overall reduction in the mean scores in S2. These findings provided a level of confidence in the reliability and consistency of the screen as a data gathering instrument for the purposes of the repeated measures design.

165

15b. in terms of changes in functioning levels?

In terms of changes in children's language functioning levels in the schools in the study at first inspection there appeared to be quite large shifts in teacher assessments resulting in changes to concern scores from S1 and S2. However on inspection it was apparent that the changes in teacher judgements where concern scores showed a pattern of change that suggested that they were based on careful consideration. To balance these there were also instances where teachers' scores of concern had risen after the period of observation of a child's language function between screenings. Taken as a whole I propose that this data indicates that teachers were originally less able to assess the relative level of children but over time and experience of focussing on language functioning they improved their skills. Therefore the changes in scoring do not detract from the consistence of the LAMP screening tool.

The teachers' concern scores only fell in S2 and this confirmed for me that the twilight presentation on language development I had given the school did not have the same impact on the awareness of SLCN in practical terms as the LAMP did. This supported my earlier concern as an EP that broad training sessions do not necessarily achieve the level of change hoped for and that more direct measures involving school staff can be more effective in supporting change.

RQ 16: What would be the factor structure of the LAMP screening tool?

Results of a factor analysis applied to the data showed overlap between identified factors within the language components of the LAMP screening tool. This was most noticeable between the statements within Expressive and Receptive scales with some lesser overlaps between statements in Social Skills and Behaviour scales. I did not consider this overlap to be surprising given the connectedness between these areas of language in operation in real life communication.

166

The LAMP screen construction was strongly influenced by the Communication Chain model (Elks, 2003). This model is predicated upon the understanding that difficulties in one area of language can be expected to have an impact on other areas of linguistic function depending on whereabouts they occur in the chain of language development. Elks' model embraces the natural overlaps between expressive and receptive categories of language as showing the connectedness between the aspects of the linguistic system. The LAMP screen builds upon this idea of a chain of related language events.

The research literature indicates that in a high percentage of cases the child with a receptive language problem will also present with expressive language difficulties, showing as immature, delayed, or disordered expressive output (Nation and Snowling, 2004; Bishop, 2007). Clearly children need to have an understanding of talk before they can themselves have an effective command of spoken language. Bishop has emphasised the need for careful observation and assessment in the classroom by teachers to discover any links between poor expressive skills and underlying comprehension difficulties. The connectedness between the categories of expressive and receptive language demonstrated by the factor analysis was a useful finding in itself as it suggests that LAMP is potentially capable of supporting teachers to understand links between receptive difficulties and expressive language difficulties in the classroom and vice versa through observation of behaviour.

The relationship between the behaviour and social scales on the LAMP show clear overlaps which again I consider to be expected considering the basis of the Communication Chain model and earlier research presented above that links social behaviour and language skills. Black and Hazen (1990) were among researchers who studied links between children's verbal communication skills and their social behaviour. 2 groups of children in their study showed clear differences in their patterns of verbal behaviour in social situations where they were expected to interact with other children. Black and Hazen found that children with no identified language difficulties were more inclined to direct their verbal initiations quite clearly towards specific listeners than were children with

167

language problems. It was hypothesised that the reluctance to speak directly to others by children with language and communication difficulties may have been a result of decreased self-confidence due to the experience of language difficulties. As proposed by Conti-Ramsden et al (2001) and later by Bishop (2011) the responses of peers may seem negative to these less confident children and leave them feeling as if they are being ignored, when in many cases peers may not have realised that they are being included in the child's conversation. A further link suggested by Conti-Ramsden et al (2010) was that children with poor language understanding tend to have less mature understandings of social encounters conducted through the medium of language. They will have difficulties if they have not developed a grasp of the social rules of interaction beyond an egocentric view. This would suggest that social behaviours can be expected to be affected in interaction by verbal behaviours which are so closely linked to personal levels of linguistic competency.

RQ 17: How valid is the LAMP screen's data in relation to an established parents' measure of speech and language functioning?

The General Communicative Competence score given by each parent was compared by the researcher with the LAMP score for each child given by their teacher. Though this was a small sample of 21 children, there were nevertheless positive indications that the teachers' judgements were largely consistent with parent's views in 81% of cases (17 out of the sample of 21 children). This outcome suggests that to a large extent, teachers and parents were observing the same level of communicative function at home and in school thus increasing the likelihood of the validity of the judgements made by teachers on the LAMP screening tool.

There remained some interesting areas to scrutinise. In 4 cases of the 21 the teacher and parent views did not reach the level of agreement to satisfy the statistical criteria. Bishop (2011) found evidence that parents' and teachers' views were more likely to coincide where a child has no evident language

168

difficulties and in this sample 82% of those children identified as having no concerns by LAMP were also identified as having no concerns by parents in the GCC. So in this sample, as in Bishop's, where a child was thought to have no language difficulties in school this was more likely to be borne out by the parents view. This joint identification by parents and teachers dropped to 75 for children identified by LAMP as having speech and language difficulties.

Experiences within my practice have made me aware that parents are not always fully cognizant of the level of difficulty their child has in language tasks. This has tended to be because the child functions well at home where less complex language demands are presented to them. In school the demands linked to learning become increasingly complex as the child moves up the year groups. Parents often may not realise this until it has been discussed with them in consultation with the school.

Chapter 7 Research Design strengths and limitations

The LAMP screening tool was a robust tool that I deemed fit for purpose and this was a strong point supporting my research. Having developed this screen I then ensured through initial piloting that the LAMP screening tool was predicated upon sound theoretical underpinnings and was designed to support existing systems in Education. The model upon which I based the LAMP included research on the essential components of language (Bloom and Lahey 1978) and took elements of its dynamic structure from the Elklan model (Elks and McLachlan, 2003) which is much used and respected in Education and SLT services. A further strength lay in my prior preparation and trialling of the LAMP screen I had worked on over a 2 year period in a school in the same City as the Doctoral study. I had subsequently revised the piloted screen with a working group of teachers and a community Speech and Language Therapist. This ensured that the screen was 'teacher friendly' in its format but continued to include key components of language function linked to relevant behavioural descriptors in use for observation.

Levels of need and provision are effectively aligned in the LAMP

Lindsay (2012) stressed the importance of conceptualising 3 levels of provision in schools. This layered approach can also be related to the way I developed the LAMP model in terms of need. The 4 levels of concern in the LAMP model link to concerns that are observed _never, sometimes, frequently_ and _constantly_ and this can be aligned to Universal, Targeted and Specialist levels of language need. With the provision of 4 separate language scales it is also possible to see separately within each area of language function which areas may be at universal level and which need targeted support. The data from LAMP screening has been shown, both in the pilot and in this study, that it can be used on a whole school basis to provide a rich picture of need. This enables intervention and support to be targeted effectively and economically.

My LAMP screening procedures used in the study can be introduced into a school system through the SENCO and Head Teacher with minimal training because the skill base around assessment already exists in the school ready to be tapped for the task of screening. Data from screening can be added to the school tracker system and multiple comparisons made (appendix 12). This data can be used in many ways including consultation with advisory support services.

Clarity and fidelity of the LAMP procedure

Dockrell (2012) notes that teachers tend to adapt resources to the needs of the children. Strength with the LAMP screening tool that is apparent in the research is its very clear procedure. This strengthens it in terms of fidelity, of the capacity of others who use the programme to use it as originally intended by the writer. LAMP has good face validity and is easy to follow and therefore users may not be led to use it in a way that was not intended. The LAMP screening tool has also shown itself to be flexible while still retaining internal integrity and being adaptable to use in other slightly different circumstances. A recent example of this is that the LAMP screen, after translation into the Greek language, has additionally been used for data collection within a Doctoral study in Greece (Karakosta, 2013). The completion of the LAMP screen there remained the same as in the original study, but the population parameters differed as did the aims of the research.

Strength in the universal nature of the LAMP screen in this study

A further strength was found in the universal nature of the LAMP screen. It was built into the conduct of the study that even children with no identified concerns would have a LAMP screen completed for them by their teacher. Therefore, because all children were to be screened, there was no bias whatsoever at the point where decisions might usually have been necessary regarding who would be screened. Teachers, by using LAMP for all the children, gained a unique universal view and this had a powerful whole school impact. The database was strengthened as it was drawn from an entire population and was not based on a

sample drawn from the population. Returns of completed data for the children approached 98%.

Strength in the design of the LAMP study

A particular strength of the design of the LAMP screening study was its repeated measures design. The repeated measures survey provided data that helped me to understand why teachers had difficulty in identifying SLCN and what could help them. The period between S1 and S2 gave opportunities for teacher reflection in action in the classroom. This period of reflection between the two LAMP screenings was a key factor in helping teachers to focus on the nature and impacts of language need. A further connected area of strength was in the provision of rich picture data regarding participant's perceptions and understandings of the process from the teacher skills questionnaires and the focus groups. I used this 'voice' to help me to interpret the quantitative data and to understand what the teachers and senior management had thought about the use and impact of the LAMP and to gauge their reasons for changes in concern levels over the 5 months of the study.

Considering further strengths, I would claim that many of the caveats around screening were addressed by the design of the study. The assessor who completed the LAMP screen for each child was a qualified teacher who knew the child well having had them in their class for a term prior to the first screening.

Again it added robustness to the current research that the sample size was large for a relatively small scale study. The pupils in 4 primary schools provide a substantial sample. Despite the drop to 3 remaining schools in S2 this remained a large sample of 409 with 27 teachers and 6 managers.

Challenges to the design

A potential weakness when using the LAMP screen in a repeated measures design can lie in the confounding of the expectation that teachers will not refer to their S1 screening prior to completing the S2 screening. Teachers were

asked to redo their second assessment without looking up or trying to recall the previous assessment, or at least if they did recall the S1 assessment that they ignore them and base assessment on current/recent observations. If this is not adhered to this may prejudice thinking about the S2 results. If replicating this study there would need again to be clearly defined caveats around this with clear procedural parameters and agreements for the school to follow. Other than that the LAMP procedure should be easily understood by school staff and could be followed in a similar way to the teachers in this original study

The impact of time constraints

The main challenges to the research were always that of time and capacity of the collaborators. As a working EP with a patch allocation the time for the research had to be drawn from whatever could be created. The schools, too, could not commit to the original design, which included a waiting list design of resources, due to time pressures. Possibly an unintended benefit from this was that it placed the LAMP screening in a stronger position. There was one less variable to account for when calculating the amount of change that was attributable to the screening.

Due to time constraints I had not personally trialled the teacher skill questionnaire prior to the study. However a similar format had been used in the evaluation of a previous Early Years project in which I had been involved. This project tapped the impact of Elklan training. I used this same format with some adaptations to reflect the content of this study (Roberts, Hampton, and Nash, 2009). Though not ideal, this did ensure some guarantees of robustness and that it was fit for purpose for this research.

Potentially due to time pressures in schools none of the Children's Communication Checklists (Bishop 2003) were completed and returned by parents. However I did access these from another school I had worked with previously by extending the period of the study.

Time factors for other services had an impact too. I had wanted to involve the SLT service in working with a sample of children across the schools to determine their language levels. However the Head of SLT Service, although enthusiastic about the LAMP as an Initiative, could not allocate resources for this. The case was similar with a request to work with trainee SLT in collaboration with the local university. However there is a substantial evidence base here supported by clear procedural information and a positive factor is that LAMP could be the subject of further research taking up these points of inquiry.

Difficulties with the data from schools

A word needs to be said about the data returned by the schools in both the first and the second phases of screening. Particularly in the data returned from schools for the S1 screen the data had omissions. This included children with no recorded SEN level. In one school there were whole classes with no speaking and listening levels recorded. There were classes where gender had not been recorded. There were a few instances of missing dates of birth for particular children. I could only go back to schools for missing data so many times but I followed up on this missing data and more data was submitted. However at the point when no more data could be accepted due to time limitations there were still gaps in the data base such as some dates of birth, and noticeably speaking and listening level for a number of children. Due to this, SPSS did not include the data for 67 of the children leaving an active 676 children in the second phase. Willow schools' data was excluded from the phase 2 analysis due to serious problems with the returned data for S2. This left a database of 409 remaining children whose results could be compared from S1 to S2.

Chapter 8 Conclusion: What is the contribution to knowledge: What is original?

The LAMP screen is unique both in its structured language function framework and its universal use for all Primary school age children. LAMP has made a unique contribution to existing knowledge regarding language screening at a whole class/school level. It has proven itself capable to provide a very useful picture of language need over a whole school context (see appendix 12). The data from LAMP is presented in a format that can be shown to staff in school and to support services as a picture of individual child functioning that can be analysed at group, class, year group, or whole school levels (appendix 12). This information can be used to plan targeted interventions and lead to an efficient use of resources. Possibly the most important finding in this study was that schools were able to track and record pupil progress in such a powerful way (appendix 11:9b, 13d) and to maintain commitment to it over the 5 month period despite other demands on their time.

Mine is the first piece of research I have found in the literature that has involved a whole school community in screening the children to assess their language levels. The repeated measures design is a strong factor that gives a very much fuller and robust picture of what happens to the teacher's professional views of children over 2 terms of a school year. The repeated measures design gave time for teachers to revise their first opinion in the light of sustained observation over time. Its use encouraged sustained observation and reflection. Teacher's categorisation of children s needs related to SLCN became more accurate (appendix 11.7a,b,c,d,h,j,m,8a). This enabled teachers to build a clearer picture of the complex needs of the children and this information could be used to plan interventions. Indeed this had begun to happen in the 4 schools after the first screen (appendix 11,10c,h,I,11b).

A further unique point in the design of this study is that the screening was not confined to schools in areas of economic deprivation but included schools in varied SES contexts. This enabled a comparison to be made from a wider

evidence base than was found in the previous literature. The results here showed a complex picture that did not fit simply the existing verbal deprivation model.

The deprivation status of Primary schools in the study have also been examined and I have proposed changes to the way Local Authorities currently base their funding decisions using relevant data to support this.

I would now feel confident in claiming that LAMP has achieved the aim of acting as an enabling tool to develop teacher awareness of the nature of language need in the classroom. Data from the focus groups showed that the LAMP screening tool was seen by staff to have the potential to open up different more aware ways of thinking about language difficulties (appendix 11:8a,d, f, I, 9e, f, 10g,m).

Implications for schools and teachers

Where children's baseline of language levels is low on entry to school or to a year group then use of LAMP can be illuminating. The screening quantifies whether the language issues are a barrier for the child and which areas of language are affected. This raises awareness of specific areas of need.

A schools' ability to offer appropriately targeted provision for language will have an impact on everything else the child achieves in school. The school SENCO would have a raised awareness of need after the LAMP screening and this would enable effective planning for the next step as a whole school (appendix 11:11a,b,c).

The LAMP screening tool used in this whole school design was seen by staff and SMT to have had the effect of changing the knowledge base of the teachers regarding language function in the classroom (appendix 11:7h, 8a, g, i, k). This is something that has been seen as a priority by those concerned to support the development of children's speech and language skills (I Can 2006; Bercow 2008; Lindsay 2010). This upskilling had been intensified by the involvement of all staff in the schools with the active support of the Head

Teacher, the SENCO and support staff. It is not always the case that an impetus of a research initiative can be carried on by the host school in practical terms but in this case each school had total ownership of the process and the ability to develop it within their own systems.

The whole school aspect of the study enabled an increased professional awareness and skills within the school organisation (appendix 11:11b, c, d, e, f, i). Gray et al (1999) considering schools as effective learning organisations found that a whole school strategy around raising awareness between classroom practice and pupils learning was a characteristic of 'rapidly improving' schools. Alongside this whole school capacity building was deemed by Gray et al to be a characteristic found in the most quickly improving schools (appendix 11:11g). Alongside this the introduction of a study such as this appears to have had an accelerating effect on the focus and support for SLCN over the schools.

In terms of the finding from Lindsay et al (2012) that children with EAL are mistakenly categorised as SLCN in primary school it is apparent in this study that such distinctions have been sharpened by some aspect of the LAMP questions as the level of concern for children in this category showed a decline (appendix 10 table 14). Further findings brought to light a differential impact of schools on the functional language levels of boys and girls (appendix 10, table 6). These are factors which would be important for further research.

Implications for Educational Psychologists

Smith et al (2007) discusses the valuable role of the psychologist in embedding good practice through whole school training.

> *'EPs should be pro-active in promoting carefully evaluated interventions in which the whole school approach is implemented with precision and compared with other interventions'* (Smith et al, 2007).*

This view is one that I align myself with and feel is highly relevant to this study. Miller's (1969) notion of the importance of 'giving psychology away' through helping school staff over time to deliver improved outcomes has more recently

177

been revived in connection with the search for value added for EPS (Baxter Frederickson 2005). The BCRP (2012) has more recently emphasised the need for evaluations of interventions developed within the context of existing service provision.

It is accepted that even if studies are carried out in one environment it may not transfer easily to another environment. However, as discussed above, the LAMP design makes it readily available for research and practice in educational contexts. The LAMP screening tool lends itself to it use in schools by EPs at very little time cost. The LAMP screening is very compatible with existing school systems. Wenger (1968) emphasised that learning is an on-going dynamic state and that developments take time but once LAMP screening is introduced to the SMT of a school they can support its development within their organisation to make robust change happen.

Management of the screening and interpretation of results for planning can be taken over by the SMT particularly where the screen has been added to the school tracker system. In this case the language levels of children can be compared with a range of comparators already on the system such as gender, EAL, year group and many others. This can produce a wealth of valuable information to guide planning, referrals to outside agencies and for advisory services to access when working with the school. In some circumstances this could form the basis of research in practice for members of staff in the school.

I do believe that the LAMP screening process could be used to provide a basis for a more orderly analysis and clarity to the identification and coding systems in schools which would, if used on a local and national basis, give us a much needed evidence base regarding incidence and progress.

Some final conclusions drawn from the evidence base

This study has shown some evidence of improved language functioning, but the main change appeared to be in the teacher's confidence in identifying and supporting language function. Teachers here appeared to find it difficult initially

178

to identify what constitutes a language difficulty. What's more they lacked confidence in this area. Once given clear descriptors of what a language concern may look like in behavioural terms, then the teachers in this study showed they possessed the professional skills that enabled them to make a decision as to whether a particular behaviour was underpinned by a language concern or not (appendix 11:6e). From this my view would be that teachers have felt somewhat overwhelmed by the apparent complexity and the amount of information on SLCN. Schools have possibly handed over responsibility to other services such as the Speech and Language services with a resultant deskilling effect on the teachers and some over stretching of the SLT services. This is not to say that children should not be referred on. Indeed I believe many children are not referred to their detriment when their needs are unrecognised; but I believe that clarity is needed on the nature and extent of children's language function in school because only then will the most appropriate intervention can be provided and referral on to other services when necessary. I believe that universal use of the LAMP screen can contribute to providing this important information within a school with very little introduction as it builds upon an existing teacher skill set in schools (appendix 11:6, e, 9e).

Implications for policy

As discussed above there are alternative explanations that can be appealed to apart from economic deprivation when there are high levels of concern regarding children's language function in the classroom. The two schools with high SES in this study presented very different language profiles despite being in similar post code areas. The findings here would not necessarily be predicted in light of the poverty/achievement debate.

Interestingly for policy makers results here appear to indicate that individual circumstances and experiences of poverty have an impact that may be more influential than any impact the school SES may have (Roulstone, 2008). However much is predicated upon how the LA calculates the levels of need within each school. The evidence base here appears to give support, albeit on a limited scale, to a position that the practice of designating a school's status

179

based on post-codes information does not necessarily provide the most efficient indicator of language need. Yet we know that an accurate indicator of levels of need is required (I Can, 2010; Bercow, 2008; Lindsay, 2012). Family mobility and stressful experiences exacerbate the effects of economic deprivation, but may also cancel out the protective effects of higher economic status. The findings here appear to suggest that this should be factored into the funding equation.

The increasing emphasis in the national policy upon early speech and language and its quintessential role in learning is positive (The Special Educational Needs and Disabilities Green Paper, March 2011). However policy makers need to reflect upon the need to ensure that this input is carried through into the Primary school phase as it is clear that SLCN need does not necessarily resolve on entry to our formal schooling system. What is required is a systematic identification of language need across our Primary schools in order to be in a position to know the actual size of the problem. Funding parameters would need to be re-aligned to allow this.

The final word

By the end of this study I had a definite feeling that we should do well to heed the unknown ancient who counsels us to throw a light upon the nature of need rather than continue to complain that we have a known need we have not yet specified:

'Better to light a candle than to curse the darkness' (Chinese proverb).

By finding out what the extent of our problem is and by defining it more exactly we can then begin to gather the resources we need to combat it and support the children who are affected.

Once clarity is achieved teachers can begin to identify the support children look to us for and rightly deserve. The Lamp screening tool has shown that it can make a valuable contribution towards this process.

Appendices

Appendix 1: Ethics clearance letter

<u>(p1)</u>

UNIVERSITY OF
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Graduate School of Education

Certificate of ethical research approval

STUDENT RESEARCH/FIELDWORK/CASEWORK AND DISSERTATION/THESIS
You will need to complete this certificate when you undertake a piece of higher-level <u>research</u>
(e.g. Masters, PhD, EdD level).

To activate this certificate you need to first sign it yourself, and then have it signed by your supervisor and finally by the Chair of the School's Ethics Committee.

For further information on ethical educational research access the guidelines on the BERA web site:
http://www.bera.ac.uk/blog/category/publications/guidelines/ and view the School's statement on the
'Student Documents' web site.

<u>**READ THIS FORM CAREFULLY**</u> **AND THEN COMPLETE IT ON YOUR**
COMPUTER (the form will expand to contain the text you enter). **DO <u>NOT</u>**
COMPLETE BY HAND

Your name: Marion Marie Nash

Your student no: 570027567

Return address for this certificate 55, Moorland View, Crownhill, Plymouth, Devon PL6 6AW

Degree/Programme of Study: Ed D

Project Supervisor(s): Brahm Norwich

Your email address: marion_m_nash@msn.com

Tel 01752 217285

I hereby certify that I will abide by the details given overleaf and that I undertake in my thesis
(delete whichever is inappropriate) **to respect the dignity and privacy of those participating in this**
research.

I confirm that if my research should change radically, I will complete a further form.

Signed:...........Marion Marie Nash............**date:**...27/10/09....

*NB For Masters dissertations, which are marked blind, this first page must **not be included** in your*
work. It can be kept for your records.

Chair of the School's Ethics Committee
last updated: August 2009

183

Certificate of ethical research approval

Your student no:

Title of your project: *Is Building Children's Language a Class Act? Teacher Involvement In Identifying and Supporting Functional Language Difficulties In Schools In High and Low SES Areas.*

Brief description of your research project: The broad aim of this research project is to investigate levels of linguistic competence in school-age children in varied social and economic contexts. In tandem with this will be a focus on providing effective support for these children by upskilling teachers who work with them. The focus will be upon children who will be rising five and in reception class to 11 year olds in year 6 within 4 schools with either a high or low deprivation index.

Give details of the participants in this research (giving ages of any children and/or young people involved):
- The focus will be upon children who will be rising five and in reception class to 11 year olds in year 6.
- Senior management and teaching staff in schools
- Parents/carers of the children in the study

Give details regarding the ethical issues of informed consent, anonymity and confidentiality (with special reference to any children or those with special needs) a blank consent form can be downloaded from the SELL student access on-line documents:

Persons (including children) and institutions who participate in this research have the right to anonymity and non-identifiability and this will be respected in the undertaking of this project. The Research theses and publication will not identify any individuals (e.g. children, parents or teachers) or school. There will be no direct contact by the researcher with the children in the study. The school will manage feedback on individual children's performances to parents/carers. Some risk could arise where parents have been unaware of the level of difficulty their child has experienced. For any such particular circumstance an individual debriefing and support session will be provided if requested by school.

Give details of the methods to be used for data collection and analysis and how you would ensure they do not cause any harm, detriment or unreasonable stress:
A language screening checklist will be completed by the class teacher for each child in their class unless written parental consent has been withheld. The names of the children will not be revealed to the researcher. The school will code the sheets before passing them to the researcher.

The researcher will offer consultation on ways to provide support for difficulties identified on the screen and there will be a re screen 6 months after the first to judge impact.

Chair of the School's Ethics Committee
last updated: August 2009

For validity purposes regarding the screen a number of parents will be asked to complete either the same screen or the Dorothy Bishop Communication Checklist for their child. The school will be asked to collect and code these before passing them to the researcher to retain anonymity.

Test retest reliability will be accessed through requesting support staff to complete the screen for a selection of children chosen by the school.

A questionnaire will ask teachers about their levels of awareness, confidence and skills pre and post screening and intervention. Individual teachers will not be asked to put their names on the questionnaires.

A focus group will be held with teachers at the end of the study, No contributions will be identified with any member of staff in the group.

Risk management

In line with the British Psychological Society Revised Code of Ethics (British Psychological Society 2004) there will be clarity with participants regarding the nature and aims of the study. The researcher will seek informed signed consent from parents or carers in loco parentis prior to the study. It will be made clear through the initial invitation letter that participation is voluntary and that they may withdraw permission for their child to participate at any time during the research period without giving a reason. Staff may also choose to withdraw and have freedom to elect not to complete all or part of the questionnaires. All data relating to children will be coded and anonymised by the school and will remain so in the write up and dissemination of the data. As part of the initial discussions with the Head and Governors the researcher will attempt to clarify any areas of a sensitive nature which may arise in relation to any of the schools.

The researcher will discuss with the participants their experience of the research in order to monitor any unforeseen negative effects or misconceptions. School will manage the feedback to parents on children's performance on the screening instrument.

Ethics

Normally, in attributing SES, one or all of three key areas are considered; these areas are income, education and occupation (Raffo 2007). It will be borne in mind that to be ethically sound there must be a consideration of the impact of such research upon the community under study and all efforts made to ensure that the equilibrium of participants remains intact. To this end it would not seem appropriate to ask searching questions of individual families regarding SES and therefore limited data will be deemed sufficient. SES factors relating to schools exist already in the public forum.

Due to resource and time issues the researcher is unable to embed the Language Builder resource to all four schools but will commit to doing so by the end of the autumn term 2010. However there is a level of expertise in schools which can be relied upon to bring to bear good existing resources once a difficulty has been identified. It is in this that the researcher places trust.

Give details of any other ethical issues which may arise from this project (e.g. secure storage of videos/recorded interviews/photos/completed questionnaires or special arrangements made for participants with special needs etc.):
Completed questionnaires and screening sheets will be viewed only by the research team and will be kept for an agreed period of time and then destroyed.

Give details of any exceptional factors, which may raise ethical issues (e.g. potential political or ideological conflicts which may pose danger or harm to participants):

Although there is a wealth of research and many reports detailing the effects of material deprivation on children/s developing skills, it may still cause discomfort to parents if they feel at all judged in such circumstances. Every effort will be made to avoid this
However it is felt that school in high SES areas do continue to assert that they too experience high levels of speech, language and communication difficulties as barriers to learning and it is important that they are not excluded from resources because of a perception that they do not require support in this area.

Therefore it is held to be an important area of study.

*This form should now be printed out, signed by you on the first page and sent to your supervisor to sign. Your supervisor will forward this document to the School's **Research Support Office** for the Chair of the School's Ethics Committee to countersign. A unique approval reference will be added and this certificate will be returned to you to be included at the back of your dissertation/thesis.*

N.B. *You should not start the fieldwork part of the project until you have the signature of your supervisor*

This project has been approved for the period: Oct 09 **until:** Dec 011.

By (above mentioned supervisor's signature): ...B Monreti... **date:** 27/10/09.

N.B. To Supervisor: *Please ensure that ethical issues are addressed annually in your report and if any changes in the research occurs a further form is completed.*

SELL unique approval reference: D/29/10/11

Signed: S.alah... **date:** 29/10/2009
Chair of the School's Ethics Committee

This form is available from http://education.exeter.ac.uk/students/

Chair of the School's Ethics Committee
last updated: August 2009

Appendix 2 Broad characteristics of the 4 schools in the study

I have anonymised the 4 schools calling them Cedar, Oak, Beech and Willow

Cedar School lies within one half mile of school Oak within the same ward. There are 171 pupils. A recent Ofsted interim report showed that the school's good performance has been sustained from 2008. The Ofsted interim report 2011 describes the school population as follows:

'Because a large number come from service families, the percentage of pupils who join or leave the school other than at the usual times is above average. Pupil numbers have decreased recently and the school is now smaller than average. Pupils come from a range of socio-economic and mainly White British backgrounds. The number of pupils with learning difficulties and/or disabilities is higher than average. The school has received a number of awards, including the International Award for Global Citizenship, Healthy School's Award, Quality Skills Mark, Active Mark, and Investor in People.'

It must also be considered that as Cedar has a higher than average number of households who have a member of the family in in the military at the time of the screening many of these families had been affected by the conflict in Afghanistan. It is documented that the range of impacts on family life engenders responses that are highly likely to have a negative impact upon a child's achievement in school (Bateman, 2009; Cross, 2009).

In discussion with senior management I understand that there is a group of travelling families whose children attend the school, although this is not mentioned in the report. Inclusion in the report apparently would depend upon children being in school at the time of the census in order to record this.

Oak School lies within a suburban area of the City. There are 315 pupils age 5 to 11. Since the study the school has become an Academy. The Ofsted report of 2008 provides the following description of the school:

'In this above-average size school, almost all pupils are of White British origin. A below average proportion of pupils have learning difficulties and/or disabilities. Children enter the school with wide-ranging attainments but their skills in communication, language, and literacy and in

187

*personal, Social Skills and emotional development are below those
expected. This is an outstanding school. The strong combination of a
dynamic and exciting curriculum and consistently effective teaching
ensures that pupils make outstanding progress throughout the school'.*

Beech School lies within an area of designated deprivation status. It has 296
pupils age 5 to 11 years. A recent Ofsted report (2011) gave the following
description of the school:

*'This larger-than-average-sized school serves its local area. A well above
average number of pupils are eligible for free school meals. Almost all
pupils are of White British origin and speak English as their first language.
The school also has a small number of Traveller pupils. An above
average percentage of pupils have a range of special educational needs
and/or disabilities, including behavioural, moderate, and specific learning
difficulties. A higher than average number of pupils joins year groups
throughout the school during each academic year. This includes a
number of pupils who had experienced difficulty in other schools.
Determined, energetic leadership by the head teacher and senior staff
have promoted in improving pupil progress. ...is a good school. There is
a clear understanding, shared by all staff, that helping pupils to make good
academic progress is the most important function of the school.
Outstanding care, guidance and support and good teaching ensure that
the pupils overall make good progress. As a result, they achieve well.
They enter the school in Reception with well below expected attainment
and leave with attainment that is only a little below average'.*

Willow School also has a high deprivation index (RAISE Online). There are 17
pupils from 3 to 11 years. In 2010 Ofsted put the school into the category
inadequate then special measures in 2011. The inspection team in 2010
reviewed many aspects of the school's work. It looked in detail at the following:

- The reasons for the apparent significant underachievement of pupils in
  Year 2 and Year 6.

- The impact of the new head teacher and leadership, including the
  governing body, in reversing the decline since the last inspection.

Information about the school population and ethos (Ofsted 2008) was as
follows:

"W is a larger-than-average primary school. A new head teacher was

appointed in September 2009. Last year several members of staff were absent for extended periods of time. The majority of pupils are White British. About 20% of pupils are eligible for free school meals, which is above average. The school has almost twice the average proportion of pupils identified with special educational needs and/or disabilities. The majority of these are for specific learning difficulties. A higher number of pupils than usual join the school throughout the school year. The school runs a breakfast club. The school has gained the Eco-School Bronze Award."

Appendix 3 Agreements and plan

3.1 Initial timetable of Research with subsequent amendments (underlined)

November 2009 School senior management meet with researcher to finalise agreements.

Written parental permission: This will include sending out letters to parents/carers requesting written permission for their child to take an active part in the research. Parents/carers will be informed by the Head through a letter that the school is involved in the research and ask them to return to the school their written permission on a returned tear off slip. An accompanying letter from the researcher will explain the nature of the research and invite them to complete the parental/carer status questionnaire and the language screen. Parents can decline to complete one or both of these questionnaires. If parents do not wish their child to be included in the research they may withdraw permission.

The permissions will be collated by the senior management team who will alert the researcher to any refusals and will not include any child for whom parents have declined permission.

The researcher will provide a twilight session on language development linked to learning in school and a 1 hour meeting for each school to introduce the screen, moderation and similar understanding of the language used in the questions on the screen. In schools B and C the school's existing provision map will be linked to the results of the screen. In schools A and C the Elklan resource pack and the plan for its use will be explained.

January 2010

Teacher questionnaires relating to current levels of awareness, skills and confidence in the area of speech language and communication needs will be

completed by teachers in the first week of <u>January</u> and sent to the researcher for collation. The levels of confidence regarding these will be agreed with the Head

A summary of school based information will be requested by the researcher in relation to the pupils in the study at the 2 points <u>January</u> and <u>June</u> 2010. These will be:-

SEN status

1. Speaking and listening levels
2. Free school meal status
3. School deprivation index
4. SEN code
5. Previous Elklan training in school
6. School's existing provision map and wave 1, 2, 3 interventions related to speech, language and communication.
7. Parents will be asked in the initial letter if they are happy to provide information to the researcher on education and employment.

In June it will be important to be made aware of any additional programmes that may have had an impact upon the SLC in the school.

The LAMP screening will be completed by all class teachers in the same week in <u>January</u> and in <u>June</u> 2010. The information from the <u>January</u> screen will initially be collected and collated by the senior management team in the school. Names of children will not be given to the researcher; pupils' screens will be coded. All useful information on individual and group needs will be collated by the school for their own planning purposes. The data will then be given to the researcher. Teachers will not have access to their S1 screening data during the research period.

1. The Dorothy Bishop Communication Checklist will be provided for 10 parents from each class (total 60). This will include parents of children who are believed to have significant, few and no slcn.

2. *10 other parents of children in each class (total 60) will be asked to complete the same LAMP screen. Both of these measures will need to be completed*

at the same 2 times as the teacher. *Parental contributions will be used to support validity of the screen*

3. The researcher will use Excel, SPSS and NVIVO where appropriate for analysing all the data supplied in order to provide a picture of individual, language area, year and school wide needs in slcn. After the June data is processed there will be evidence of outcomes at all these levels. Impact and progress can also be charted on the individual, year and school level.

4. In schools the researcher will arrange a visit to each school to consult with the SMT regarding the results of the LAMP screening S1,

June 2010

5. The screening will be conducted in the same way in June by the teachers and parent/carers. Information from the screening will be treated in the same way and the coded data will be given to the researcher.

6. **Teacher questionnaires** relating to current levels of awareness, skills and confidence in the area of SLCN will be completed again. This will include a retrospective element.

A Focus group will be arranged with the researcher in each school with a representative from SMT and from the teaching staff.

3.2 Agreement by Head Teacher to maintain participation in the project

I agree to carry through the agreed tasks above including obtaining written permission from parents/carers for their child to be part of the study. Also to continue to encourage and direct staff to attend the initial meetings, complete the screening instrument in January and June and complete the teacher questionnaire.

Head of .... school

Signed...

Date..…..............…...……...………................……………………

3.3 Agreement to maintain participation in the LAMP assessment and mapped provision for the research study 2009-2010.

The researcher will provide a template of the LAMP screen, parental agreement letters and copies of the Dorothy Bishop Children's Communication Checklist (Bishop, 2003) for parents. Data will be collected and statistical analysis completed. Findings will be discussed with the Head teacher and SENCo after S1 and prior to completion of the study.

Signed.......................................…...

Researcher Educational Psychologist

The Head will carry through the following agreed tasks:

- Secure written permission from parents/carers for every child who is to be involved in the study.

- Anonymise data prior to giving it to the researcher

- Give a CCC checklist (provided by the EP) to every parent/carer who indicates willingness to complete it in their permission letter.

- Encourage staff to attend the initial meeting where the screening process is explained and the twilight session.

- Support the teachers with undertaking the LAMP screening in January 2009 and June 2010 and completion of the pre and post teacher questionnaires.

- Meet with the EP to review outcomes after screen one.

Head of .... school

3.4 Letter-headed letter to Head Teachers

Everyone seems to be very positive about the screening experience and lots of links are being made.

The next step for me is to check the validity of the screen as a measuring instrument and to do this I need to ask you to engage ten parents in your school to complete the Dorothy Bishop Communication checklist (Bishop, 2003). These would be parents who agreed to do this on the initial permission slip. If a member of staff would complete it as well for the child it would be fantastic but in light of what you are already doing I don't want to ask too much.

I would come into school with the forms and explain how they are filled in. I would then collect them for analysis before the end of term.

> ➤ I will also be contacting you soon about the second screening which will take place in June. I will need to have all the pupil information completed. Some information on the first screening linked to sen status, free school meals and speaking and listening levels was missing and will need to be provided.
> ➤ When the second screen has been completed could staff please be asked to complete the second skills and confidence questionnaire. I will get the paperwork to you as the next form is filled in differently. Staff are asked to indicate where they are now in terms of confidence and skills but also looking back where do they feel they were before the project started.
> ➤ I will also be contacting you to make an appointment of an hour and a half in early July to talk to you within your Focus group about your experience of the LAMP process and any changes you feel you would want to make in the future.

I will make an appointment with you in the autumn term to feed back the emerging outcomes and to plan ahead. I will be more than happy to continue to offer an on-going consultation over the next year.

195

3.5 Thesis agreement form (a)

UNIVERSITY OF
E**X**ETER

GRADUATE SCHOOL OF EDUCATION

THESIS PROPOSAL FORM
(EdD)

FULL NAME
Marion Marie Nash

SPECIAL FIELD Psychology of language development
(eg: Generic, TESOL, Maths Education, Special Educational Needs)

THESIS: PROVISIONAL TITLE

Is Building Children's Language a Class Act?; Teacher Involvement in Identifying and Supporting Functional Language Difficulties In Schools In High and Low SES Areas.

THESIS: PROVISIONAL OUTLINE (approximately 100 words)

aims arising from the research questions are to;

> use structured whole school language screen in schools of different socio-economic levels to examine the pattern of language and communication competence across these varied backgrounds.

> use the screen to identify areas for the school to develop a language and communication intervention and to evaluate the effects of this intervention on children's language and communication.

> examine whether the use of the language screen and intervention have increased teachers awareness, knowledge and confidence in working in this cross curriculum area.

GraduatedSchoolEd.Herbert&JarvisWD:Thesisproposal

Supervisor 2 TBC
SMS 19/10/09

3.6 Thesis agreement form (b)

SUPERVISION: (To be completed by the Special Field Leader)

First supervisor ....

Second Supervisor .... tbc. ....

1st supervisor............% ....hours   2nd supervisor.........% ....hours

Who is the mentor?...
Allocation of hours (Total: 30 hours for FT student, 15 hours for PT student)

I accept that I will submit all assignments before submitting the thesis. I accept that the marks for the assignments must have been presented to Examination Board before the marking process for the thesis can be completed.

Signed .... (Student's signature)

Dated................ 14/10/09 ......

Signature of Supervising Tutor ....

Telephone Number(s) for Student's use: (Daytime) ....

(Evening/Weekend) ....

Completed forms should be returned to:

Student Information Office, University of Exeter, Graduate School of Education,,
Heavitree Road, Exeter, Devon, EX1 2LU ed-student@exeter.ac.uk

197

Appendix 4: Letter to parents/carers describing the aims of the study and requesting involvement.

Department Letterhead

City Psychology Service

Date

Dear Parent(s) or Guardian(s):

This letter is to introduce myself and to describe the research project happening in your school next year. My name is Marion Nash and I am an Educational Psychologist. I have worked in the City since 1989. For the past 2 years I have been involved in supporting a research project in one of our xx Primary schools. The school has assessed the speech, language and communication skills of all the children in order to be able to offer the best support. Other schools have asked to be involved in using the assessment tool and I am now working with your child's school as part of my Doctoral research with the University of Exeter.

I am writing to ask your permission for your child to participate in this research project. We are interested in identifying the language skills that children bring to their learning and in learning what helps children to develop those skills. We believe that our project will help to increase our understanding about ways that teachers can support language and communication skills in school.

For the project each class teacher will use a one page language skills assessment to assess the children in their class. The children won't notice anything different, as the teachers will fill in the assessment from their existing knowledge of the children in class. Individual children's names will be known only by the teachers. The project has been approved by the senior management team of the City Psychology Service and has the support of the Head at your child's school and the ethics department of the University of Exeter. However, the final decision about participation is yours. Only children

who have **signed** parental permission will be involved in the study. Parents may withdraw their permission at any time during the study by indicating this decision to the researcher.

We would appreciate if you would permit your child to participate in this project, as we believe it will help to further our knowledge about developing all our children's language and communication skills.

Would you please complete the **attached permission form**, and return to the school by the **16th December**.

Should you have any concerns or comments resulting from your child's participation in this study, please contact me at the address above Thank you in advance for your interest and support of this project.

Yours sincerely,

Marion Nash, Educational Psychologist, B, A., M.Ed., CPsychol.

....

PERMISSION SLIP.

Please tick the box that applies to you

YES I Agree

☐

NO I do not agree

☐

to my child being included in the Language and communication skills research study at the school .

Parent/Guardian Name: ....

Parent/Guardian Signature Date: ....

Please return this form to your child's teacher before December 16th 2009.

We will also be looking for parents who would be willing to complete a questionnaire about their views on their child's levels of speech, language and communication

Please tick the box if you would be willing to complete a questionnaire on your child's language skills**.**

Appendix 5. Skills Questionnaire (1) and (2 retrospective) for Teachers.

5.1 Self rating questionnaire for teachers pre- screening and intervention LAMP screening

(First questionnaire to be completed in January 2010) (*Reduced in size for Appendix)*

YOUR feedback is important to us and additional comments will be very helpful. Thank you

Name of school Name of teacher or code Year group									Please will you circle **0** where you feel you are **now**		
Please rate your current confidence/satisfaction levels in the following areas	Not at all			Average				Highly			
	1	2	3	4	5	6	7	8	9
1.　I am aware of the different aspects of SLCN children may experience									
2.　I am confident in assessing the language and communication levels of all the children in my class.									
3.　I am able to make adjustments to remove potential barriers to the children's language development.									
Additional comments									
4.　I am confident about planning activities for individual children to support language and communication skill development.									
5.　I am confident in planning **group** sessions to support language and communication development.									
6.　I am satisfied with the current level of resources for **individual** language work.									
7.　I am satisfied with the current level of resources for **group** language work.									
8.　I am confident that the pace of language **I** model in the class supports children's language development.									
Additional comments									
9.　I feel that using the screen will develop my awareness in identifying SLCN. .									
10.　I am confident in communicating to parents the key role they play in supporting their children's language and communication.									
Additional comments									
11.　I am aware that there is a provision map to support speech, language and communication in the school	Yes					No			
If the answer for question no.12 is No - I would find a provision map in school to support speech, language and communication helpful									

Thank you very much for taking the time to complete this. Any additional comments will be valued.

Appendix 5 2. Self Rating Questionnaire for Teachers (2) Post Screening and Intervention and Retrospective LAMP Screening

(Second questionnaire completed in June 2010)

Your feedback is important to us and additional comments will be very helpful. Thank you

Name of school Name of teacher or code Year group							Please will you circle **0** where you feel you are **now** And then cross **X** the number that show where you feel you were **before** the project started			
Please rate your current confidence/satisfaction levels in the following areas	Not at all			Average				Highly		
	1	2	3	4	5	6	7	8	9
12. I am aware of the different aspects of SLCN children may experience									
13. I am confident in assessing the language and communication levels of all the children in my class.									
14. I am able to make adjustments to remove potential barriers to the children's language development.									
Additional comments									
15. I am confident about planning activities for individual children to support language and communication skill development.									
16. I am confident in planning **group** sessions to support language and communication development.									
17. I am satisfied with the current level of resources for **individual** language work.									
18. I am satisfied with the current level of resources for **group** language work.									
19. I am confident that the pace of language I model in the class supports children's language development.									
Additional comments									
20. I feel that using the screen will develop my awareness in identifying SLCN.									
21. I am confident in communicating to parents the key role they play in supporting their children's language and communication.									
Additional comments									
22. I am aware that there is a provision map to support speech, language and communication in the school	Yes					No			
If the answer for question no.12 is No - I would find a provision map in school to support speech, language and communication helpful									

Appendix 6 Sequence of inputs to the 4 schools

Input	Cedar Low deprivation indices High SES	Oak Low deprivation indices High SES	Beech High deprivation indices Low SES	Willow High deprivation indices Low SES	Other schools
Phase 1;Test retest reliability					Accessed from school F (Low SES)
Validity measures Parent Questionnaire (Bishop CCC)	None returned	None returned	None returned	None returned	Accessed from school G (High SES)
Phase 2; Signed declaration /agreement by Head	Yes	Yes	Yes	Yes	
Teacher Questionnaires (pre)	Yes (6/6)	Yes 2/11)	Yes (10/10)	No (10)	18/37 teachers
Phase 3; i. Twilight presentation on development of language	Yes	Yes	Yes	YES	
ii. Twilight session: How to use screen/moderation	Yes	Yes	Ye	(SENCO did THIS)	
Phase 4;LAMP Screening 1	Yes	Yes	Yes	Yes	
Phase 5; Visit to SMT	Yes	Yes	Yes	Yes	
Phase 6; LAMP screening 2	Yes	Yes	Yes	Data not included	
Phase 7; Teacher questionnaires (post and retrospective)	Yes (6/6)	Yes(2/11))	Yes (10/10)	No	
Phase 8; Focus group (FG)	Yes	No	Yes	No	

Appendix 7 Summary of procedures planned and whether carried out

Input	C low deprivation indices High SES	O low deprivation indices High SES	B High deprivation indices Low SES	W High deprivation indices Low SES	Other schools
Test retest reliability					accessed from **school F (Low SES)**
Reliability measure	Yes via FGQ	No	Yes via FGQ	Yes via FGQ	1xhigh SES 2xxlow SES
Validity measures Parent Questionnaire	None returned	None returned	None returned	None returned	Parent Questionnaire accessed from school **SE(High SES)**28 returned
Signed declaration /agreement by Head	Yes	Yes	Yes	Yes	
Power point presentation	Yes	Yes	Yes	Yes	
Twilight How to use screen/moderation	Yes	Yes	Ye	(SENCO did this)	
S1	Yes	Yes	Yes	Yes	
S2	Yes	Yes	Yes	Not included	
Visit 1	Yes	Yes	Yes	Yes	
Visit 2	Yes	Yes	No	Yes	
Resources implemented by school to support areas of SLCN	No	No	No	No	
Focus group (FGQ)	Yes	No	Yes	Yes	
Teacher Questionnaires (pre)	Yes	Yes	Yes	Yes	
Teacher questionnaires(post and retrospective)	Yes	Yes	Yes	Not included	

204

<u>Appendix 8 Focus group Questions</u>

Focus groups: Representative from senior management team, teaching staff, support staff. July 2010

Focus group questions: Thank you for your participation it is much appreciated.

Are you happy that we tape this group response in order not to miss any of the points?

1. Could you make me aware of how it was for you as a practitioner to work with us on the project?

2. How much effort and time has it taken to complete the screen?

3. Did you have any problems filling out the screen? (reliability of the instrument)

4. What were the barriers to identifying children's SLCN needs?

5. How did you make decisions about scoring?

6. Did the way you completed the screen change, or stay the same as you went through the class list?

7. In the second screening did you find that you marked any children differently? I.e. previously said they did/didn't have some SLCN needs and then changed this after observing them in the period after the first screen?

8. Can you elaborate on this? Why do you think this was the case?

9. What have been the advantages and disadvantages of your involvement?

10. On balance do you feel it was worth doing?

11. Did you notice an effect on your confidence, awareness and/or skills in the area of SLCN?

12. To what extent and how has using the screen impacted on your practice?

13. Has there been any impact at a whole school/staff level?

14. (Supplementary question if needed) If there has been no effect, why might that be?

15. How would you feel about completing the screen in the same way next year?

16. Would you like to see any changes?

17. Is there anything we haven't yet discussed that you feel would be useful for me to know?

LAMP Screen Teacher

SCORING : Never 0 :   Sometimes 1   Frequently 2   Constantly 3

School: _____ Teacher Initial: _____ Year Group: _____ Pupils Initial: _____ D.O.B _____ Gender: _____ Date: _____

First 4 questions please circle:

1) *Is English the first language?* (Yes, No)

2) *Is there a hearing difficulty?* (Yes, No, Unknown)

3) *Are there difficulties with written literacy?* (Yes, No, Unknown)

4) *SEN status?* (Universal, School Action, School Action +, Statement)

Taking account of age appropriateness does the child have difficulty in:

1) Expressive language skills (outgoing)   (SCORE 1 -)

a)	b)	c)	d)	e)	f)	g)	h)	i)	j)	k)	l)

2) Receptive language (incoming)   (SCORE 2 -)

a)	b)	c)	d)	e)	f)	g)	h)	i)	j)	k)	l)

3) Behaviour related to slcn   (SCORE 3 -)

a)	b)	c)	d)	e)	f)	g)	h)	i)	j)

4) Social Skills   (SCORE 4 -)

a)	b)	c)	d)	e)	f)	g)

TOTAL of the 4 SCORES..........

Appendix 10 Supplementary information relating to findings

Introduction

This appendix is then organized by Research Questions (RQs) 1 to 17. The tables and graphs relevant to each RQ are presented under each RQ heading.

RQ 1: What does the distribution of LAMP scores tell us about the impact of the LAMP screening on teacher identification of language need?

In this analysis levels of teacher concern in the 4 areas of language, Expressive, Receptive, Behaviour and Social Skills were compared in the 4 schools for S1.

2 types of data were compared. The first was the individual concern score teachers gave on each question. This was in a range between zero and 3. The second type of data was the total score for a LAMP screen for each child that would have a range of scoring between 0 and 123 (score of 3 x 41).

Analysis of *individual* concern scores S1 (concern score range zero to 3)

Analysis using the mean score in each school

This figure shows that the mean for individual scores of concern attributed to the questions on each scale by teachers Expressive and Receptive scale were most similar in Cedar and Beech and were higher than the mean for Behaviour and Social Skills in these schools.

Analysis of *Total* concern scores for LAMP S1 (range 0 to 123).

This analysis used percentages.

208

Figure 10 Comparison of total language concern scores presented in <u>percentages</u> for the 4 LAMP scales for each of the 4 schools for S1.
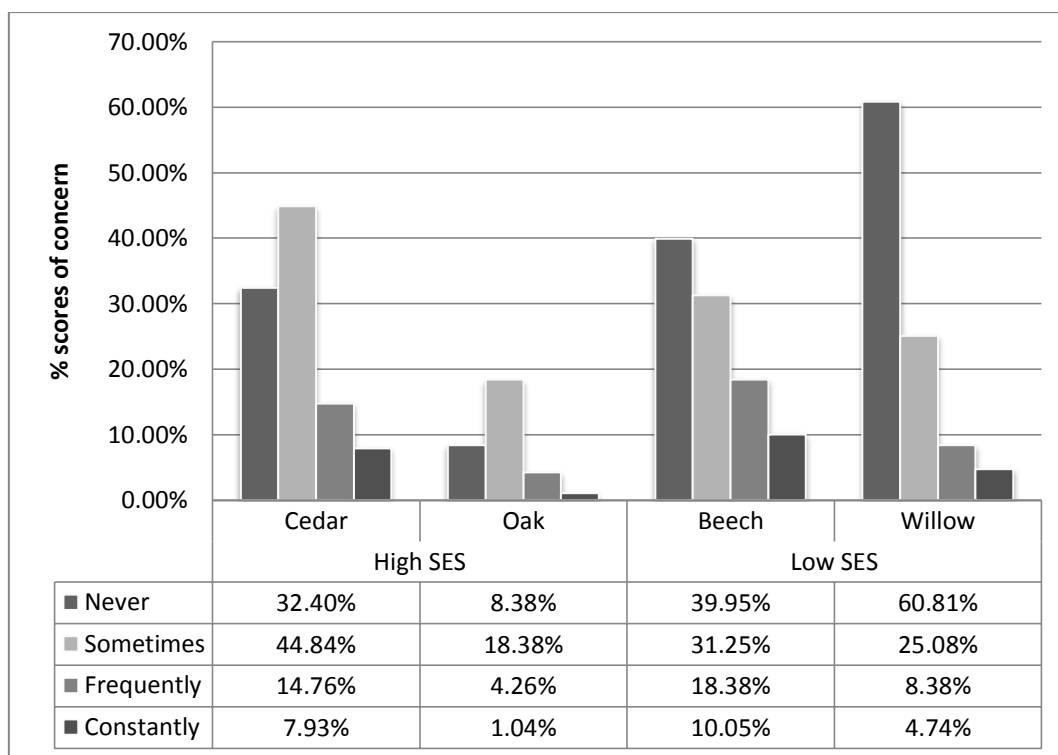
	High SES		Low SES	
	Cedar	**Oak**	**Beech**	**Willow**
■ Never	32.40%	8.38%	39.95%	60.81%
■ Sometimes	44.84%	18.38%	31.25%	25.08%
■ Frequently	14.76%	4.26%	18.38%	8.38%
■ Constantly	7.93%	1.04%	10.05%	4.74%

In percentage terms the analysis of the data from the first LAMP screening showed the individual mean scores of concern for each school as Cedar 38.62%, Oak 11.65%, Beech 23.34%, Willow 39%. Oak, being one of the designated LD schools, is sited no more than a mile away from Cedar and. By comparison, where Cedar teachers reported that 32% of their children *never* had language concerns Oak teachers reported that over 76% of their children *never* had language concerns. In Beech (HD) 40% of children were reported by teachers to *never* have language concerns.

<u>Analysis using mean with standard deviation.</u>

In terms of the total mean score of concern for each school it was apparent that the mean concern score levels and the deprivation indices were different. Table 20 below shows this.

Table 20 showing the mean and SD for <u>total</u> scores of concern for the 4 schools S1.

SES	School	Mean	Standard Deviation
High	Cedar	38.62	27.83
High	Oak	11.65	16.41
Low	Willow	34.92	29.9
Low	Beech	23.35	25.96

In terms of the total mean score of concern for each school it was apparent that the mean of Cedar and Willow was comparable yet the deprivation indices were different. Beech mean was significantly higher than that of Oak, which might be expected as the SES attribution was different. Beech mean was lower than Willow which was a school with comparable SES indicators to Beech. Beech mean was also lower than Cedar which had a different SES rating.

In terms of the total mean score of concern for each school it was apparent that SES indicators did not predict level of mean concern score.RQ 2: What is the incidence of language difficulties based on the data using various cut-off points?

<u>Changes to mean scores of concern</u>

In this analysis a comparison was made between the mean total of concerns in the 4 areas of language, Expressive, Receptive, Behaviour, and Social Skills over the LAMP screen. This was for 3 schools S1 to S2 (at S2 there was data from only 3 schools, Cedar, Oak, and Beech).

Table 21 Changes to overall LAMP mean with standard deviation for <u>total scores</u> of concern S1 and S2

School	Overall LAMP mean with SD for <u>total scores</u> of concern S1 and 2			
	Mean score S1	Sd S1	Mean score S2	Sd S2
Cedar	38.62	27.83	25.63	27.32
Willow	34.92	29.9		
Beech	23.35	25.96	19.71	25.02
Oak	11.65	16.41	6.92	11.36

There had been changes in mean total score of concern in the 3 schools Cedar, Oak, and Beech had decreased. The decrease in Cedar had been significantly higher than that of the other 2 schools. Oak's data indicate that the data points were spread out over a larger range of values in S2 than in S1. This was not a factor in Cedar or Beech.

Table 22 Table of results of within and between analysis of variance of LAMP Total scale

Within	ss	df	Ms	F	sig	Partial Eta squared (effect size)
Time	8323.10	1.00	8323.10	88.40	0.00	0.18
Time x school	2326.59	2.00	1163.30	12.35	0.00	0.06
Between						
School	66374.84	2.00	33187.42	45.24	0.00	0.18

The Anova analysis above shows significant main effects for time and time by school, and between schools at the $p<0.01$ level. This means that there are overall significantly lower scores at S2 than S1 and for schools to have significantly different mean scores. There is also an interaction effect between time and school significant at $p<0.01$ level showing that though scores decrease from S1 to S2, the decrease is much larger for Cedar than the other schools.

<u>Inspection of the data recoded into 3 categories of concern, mild, moderate, and severe by frequency</u>

Data was then recoded in order to create 3 bands of severity of speech and language concern using frequency cut offs for teacher ratings of concern. The recoding created 3 categories of concern based on a count of all teachers individual scores placed in order of frequency.

The new category indicators were:

0 – mild/typical difficulty

1 – moderate difficulty

2 – severe difficulty

Centiles were used as cut off points as shown in the table below.

Table 23 Showing the percentage for cut off points for <u>individual</u> score of concern (0-3) recoded into 3 categories of severity of difficulty

Concern Rating Code	Centile band within which the frequency of scores was calculated.	Range of individual scores of concern (0 -2)	
		S1	S2
0 mild/typical	0-79th centile	0 – 0.78	0 – 0.43
1 moderate	80 – 90th centile	0.83 – 1.23	0.47 – 0.87
2 severe	>90 centile	1.23 – 2.56	0.87 – 2.07

Due to the large number of children in the <u>*never*</u> a concern category in the original data with a score of 0 the 80th centile had been chosen as the cut off point for moderate concerns. The 90th centile plus was chosen for severe concerns

Table 24 below provides a summary of the number of children in each school having their overall mean concern scores categorised as <u>*mild/typical*</u>, *moderate,* or <u>*severe*</u> concern S1 and S2. This is based on the recoded data for S1 and S2

in the 3 schools over each of the 4 scales Expressive, Receptive, Behaviour, and Social Skills.

Table 24 Summary of the number of children in each school having their overall mean concern scores categorised through recoding as 0 mild/typical, 1 moderate, or 2 severe concerns. S1 and S2 – Lamp Expressive, Receptive, Behaviour, and Social Skills

	S1expressiverecode				S2Expressiverecode				S1receptiverecode				S2Receptiverecode				S1Behaviourrecode				S2Behaviourrecode				S1SocialSkillsrecode				S2SocialSkillsrecode			
	0	1	2	Tot	0	1	2	Tot	0	1	2	Tot	0	1	2	Tot	0	1	2	Tot	0	1	2	Tot	0	1	2	Tot	0	1	2	Tot
Cedar	54	14	8	76	65	3	8	76	53	10	13	76	60	8	8	76	56	15	5	76	65	9	2	76	62	7	7	76	63	9	4	76
Oak	211	16	5	232	223	7	2	232	221	6	5	232	229	2	1	232	226	5	1	232	232	0	0	232	229	3	0	232	232	0	0	232
Beech	88	3	10	101	83	4	14	101	88	4	9	101	81	8	12	101	91	3	7	101	92	6	3	101	93	3	5	101	95	6	6	101
TOTAL	353	33	23	409	371	14	24	409	362	20	27	409	370	18	21	409	373	23	13	409	389	15	5	409	384	13	12	409	390	15	10	409

Key: 0 –mild/typical difficulty, 1 – moderate difficulty, 2 – severe difficulty

The recoded data illustrated a downward shift of scores of concern, as did the original data. There is in each scale in S2 a rise in _mild/typical_ concerns and a drop in the broader band of _moderate_ concerns and some, though less, drop in _severe_ concerns. The trend appears to indicate that teachers are deciding that children's speech and language concerns are not so great a concern as first thought and thus the _mild/typical_ category had risen to include the children whom teachers had initially placed in the in the _moderate_ and _severe_ categories. Social Skills scale is the one with least change.

Behaviour scale had the highest decrease in the _severe_ concern band with drops of 4 in Cedar and 3 in Beech. Bearing in mind that the concerns relate to speech, language and communication needs, it is probable that the language component of the behaviour has been reattributed to causes other than speech and language by the second screen.

In order to inspect further the changes in ratings S1 to S2 a frequency count was made using the recoded data. The table below shows the results of this

Table 25 Frequency count of individual LAMP scores (0-3) recoded as mild/typical, moderate and severe concern ratings showing changes in cut off points S1 to S2

	Concern level	score	S1	S2	Diff
Frequency count of individual concern scores (0-3)	Mild/typical	00 – 0.99	351	365	+14
	Moderate	1.00 - 1.99	42	25	-17
	Severe	2.00 +	16	8	-8
N			409	409	

The pattern of change indicated by this analysis was one of very moderate changes in the 3 categories _mild/typical,_ and _moderate_ overall between S1 and S2. The frequency of _mild/typical_ concern scores showed a small increase of +14 from S1 to S2. _Moderate_ concerns dropped in frequency by 17 indicating a general change in concern at this level. _Severe_ concerns reduced by eight showing a lessening of severe concern scores. The pattern of reduction appears to indicate that the severe concern ratings became _moderate_ and the

215

moderate ratings reduced to *mild/typical*. This would explain the shift in ratios and would be supported by the Receptive scale crosstabs above.

RQ 3: What is the incidence of language difficulties based on analysis by gender.

<u>Total LAMP score</u>

Table 26 Results of within + between factor analysis of interactions (school, and gender over time) for LAMP Total scale

Within	Ss	df	Ms	F	sig	Partial Eta squared (effect size)
Time	7528.5	1	7528.53	82.85	.00	.17
time x school	*1916.09*	2	958.05	10.54	.00	.05
time x gender	100.46	1	100.46	1.106	.29	.00
time x gender x school	838.73	2	419.36	4.62	.01	.02
Between						
School	70285.34	2	35142.67	50.95	.00	.20
Gender	16734.47	1	16734.47	24.26	.00	.06
school x gender	8366.19	2	4183.09	6.064	.03	.03

The Anova analysis shows significant main effects for time and school and gender, time by school and school by gender ($p < 0.01$). This means that there are overall lower scores at S2 than S1 and for boys to have lower scores than girls. However, there is also a 3 way interaction effect between time, school and gender significant ($p < 0.05$). Oak school had the lowest scores compared to the other 3 schools and in this school boys' scores were least different to girls' scores relative to the other schools. The mean for girls is lower in all 3 schools for both S1 and S2. In Cedar the drop in mean is higher for girls whereas in Oak and Beech the drop in mean from S1 to S2 was less for girls than for boys. Oak had the lowest mean for both boys and for girls. The drop in mean for Oak for both boys and girls, however, was less than in Beech.

216

Lamp Scale Expressive

Table 27 Results of 3 way analysis of variance (gender and school over time) for LAMP Expressive

	Sch 1 Cedar				Sch 2 Oak				Sch 3 Beech				Total by gender				Total	
	Boys n = 34		Girls n = 41		Boys n = 112		Girls n = 119		Boys n = 51		Girls n = 50		Boys n = 197		Girls n = 210		N=407	
	ẋ	Sd	ẋ	Sd	ẋ	Sd	ẋ	Sd	ẋ	Sd	ẋ	Sd	ẋ	Sd	ẋ	Sd	x	Sd
S1	15.97	10.39	9.51	6.29	5.09	6.63	3.55	5.6	8.78	10.75	6.48	7.39	7.92	9.42	5.41	6.60	6.63	8.17
S2	12.35	10.12	3.98	4.78	3.04	5.19	2.55	4.55	8.5	10.45	7.48	11.12	6.06	8.6	4.00	7.01	5.00	7.88
total mean	14.16		6.74		4.06		6.1		8.64		7.48		6.99		4.7		5.82	
total mean boys + girls	10.45				5.08				8.06				5.82					

Table 28 Results of within +between factor analysis of interactions (school, and gender over time) for Lamp scale Expressive

Within	Ss	df	Ms	F	Sig	Partial Eta squared (effect size)
Time	595.28	1	595.26	33.14	0.00	0.08
time x school	524.57	2	262.29	14.6	0.00	0.07
time x gender	0.756	1	0.76	0.042	0.84	0.00
time x gender x school	70.58	2	35.29	1.96	0.142	0.01
Between						
School		2	3180.44	35.20	0.00	0.15
Gender		1	1842.74	20.40	0.00	.050
school x gender		2	591.77	6.55	0.00	.030

The Anova analysis of Expressive shows significant main effects for time, school, and gender. This means that there are overall lower scores at S2 than S1 and for boys to have higher scores than girls overall. There was also a significant difference between the scores across the schools, with Cedar having the highest mean score. However, the time x school interaction effect was significant, indicating that changes from S1 to S2 varied significantly between the schools. Also, the significant school x gender interaction indicates the gender differences vary across the schools. The mean for girls is lower in all 3 schools for both S1 and S2. In Cedar the drop in mean is higher for girls with a rise in Beech whereas in Oak the drop in mean from S1 to S2 was less for girls than for boys.

Oak had the lowest mean for both boys and for girls. The drop in mean for Oak for both boys and girls, however, was less than in Cedar.

Figure 11 Results of 3 way factor analysis of variance (school, and gender over time) for LAMP scales Expressive

	Cedar		Oak		Beech		Total by gender		Total
	ẋ Boys	ẋ Girls	ẋ Boys	ẋ Girls	ẋ Boys	ẋ Girls	ẋ Boys	ẋ Girls	x N=407
Screen 1	15.97	9.51	5.09	3.55	8.78	6.48	7.92	5.41	6.63
Screen 2	12.35	3.98	3.04	2.55	8.50	7.48	6.06	4.00	5.00
Total	14.16	6.74	4.06	6.10	8.64	7.48	0.00	0.00	5.82

Lamp Scale Receptive

Table 29 Results of 3 way factor analysis of variance interaction (gender and school over time) for LAMP scale Receptive

	Sch 1 Cedar				Sch 2 Oak				Sch 3 Beech				Total by gender				Total	
	Boys n = 34		Girls n = 41		Boys n = 112		Girls n = 119		Boys n = 51		Girls n = 50		Boys n = 197		Girls n = 210		N=407	
	$\dot{x}$	Sd	$\dot{x}$	Sd	$\dot{x}$	Sd	$\dot{x}$	Sd	$\dot{x}$	Sd	$\dot{x}$	Sd	$\dot{x}$	Sd	$\dot{x}$	Sd	x	Sd
S1	14.62	10.58	10.29	6.83	4.13	6.01	2.79	4.75	8.29	9.39	6.74	7.62	7.02	8.78	5.20	6.65	7.38	7.80
S2	12.65	11.54	5.24	5.86	2.40	4.33	1.22	2.63	6.84	9.33	5.88	8.87	5.32	8.37	3.11	5.81	5.33	7.24
Total	13.63		7.76		3.26		2.00		7.86		6.31		6.17		4.15		5.16	
Total boys + girls	10.70				2.63				7.09				5.16					

220

Table 30 Results of within +between factor analysis of interactions (school, and gender over time) for Lamp scale Receptive

Within	Ss	df	Ms	F	sig	Partial Eta
Time	719.65	1	719.65	54.9	0.00	0.12
time x school	131.44	2	65.72	5.01	0.01	0.02
time x gender	24.63	1	24.63	1.88	0.17	0.00
time x gender x school	87.59	2	43.8	3.34	0.04	0.02
Between						
School	8148.90	2	4074.45	52.55	0.00	0.21
Gender	1268.82	1	1268.82	16.36	0.00	0.04
school x gender	644	2	322	4.15	0.02	0.02

The Anova analysis shows significant main effects for time, school and gender. This means that there are overall lower scores at S2 than S1 and for boys to have lower scores than girls overall. There was also a significant difference between the scores across the schools, with Cedar having the highest mean score. Though there are significant 2 way interactions, there is a significant 3 way interaction effect between time, school and gender (p<0.05). This indicates that girls' and boys' scores differed significantly from S1 to S2 between the school. The mean for girls is lower in all 3 schools for both S1 and S2. In Cedar the drop in mean is higher for girls whereas in Oak and Beech the drop in mean from S1 to S2 was less for girls than for boys.

Figure 12 Results of 3 way factor analysis of variance interaction (gender and school over time) for LAMP scale Receptive

	Cedar Boys	Cedar Girls	Oak Boys	Oak Girls	Beech Boys	Beech Girls	Total by gender Boys	Total by gender Girls	Total N=407
Screen 1	14.62	10.29	4.13	2.79	8.29	6.74	7.02	5.2	7.38
Screen 2	12.65	5.24	2.4	1.22	6.84	5.88	5.32	3.11	5.33
Total	13.63	7.76	3.26	2	7.86	6.31	6.17	4.15	5.16
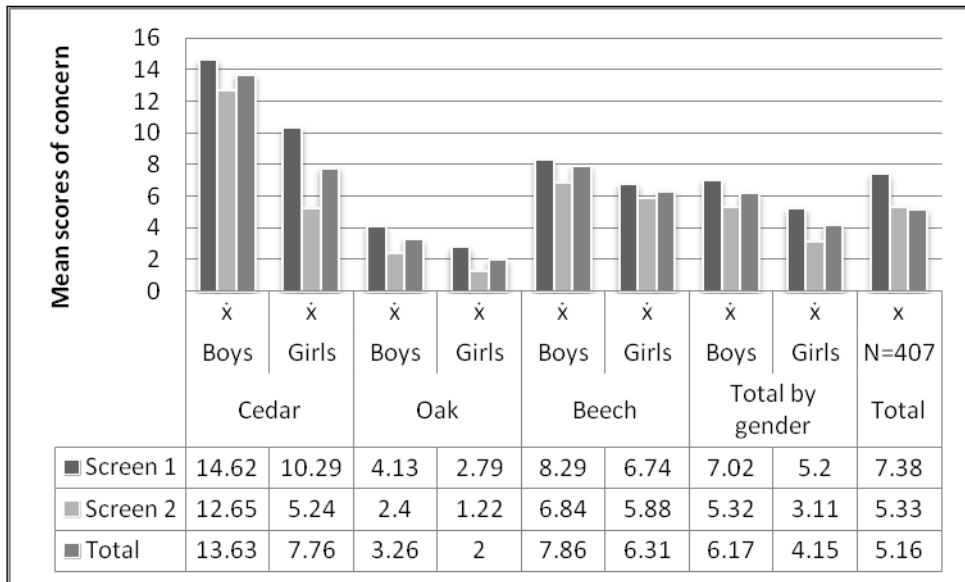
Lamp Scale Behaviour

Table 31 Results of 3 way factor analysis of variance (gender and school over time) for LAMP scale by Behaviour

	Sch 1 Cedar				Sch 2 Oak				Sch 3 Beech				Total by gender				Total	
	Boys n = 34		Girls n = 41		Boys n = 112		Girls n = 119		Boys n = 51		Girls n = 50		Boys n = 197		Girls n = 210		N=407	
	ẋ	Sd	ẋ	Sd	ẋ	Sd	ẋ	Sd	ẋ	Sd	ẋ	Sd	ẋ	Sd	ẋ	Sd	X	sd
S1	10.47	8.06	7.00	5.96	3.21	4.61	2.14	3.32	6.12	7.22	4.16	5.03	5.21	6.60	3.57	4.74	4.37	5.77
S2	8.41	7.38	3.37	4.15	2.00	3.14	1.20	2.22	4.67	6.64	2.69	4.33	3.80	5.64	1.98	3.36	2.86	4.69
Total	9.44		5.19		2.60		1.67		5.40		3.43		4.51		2.78		3.64	
Total boys + girls	7.31				2.14				4.42				3/64					

223

Table 32 Results of within +between factor analysis of interactions (school, and gender over time) for Lamp scale Behaviour

Within	Ss	df	Ms	F	sig	Partial Eta squared (effect size)
Time	520.81	1	520.81	90.75	0.00	0.19
time x school	88.48	2	44.24	7.71	0.00	0.04
time x gender	7.95	1	7.95	1.39	0.24	0.00
time x gender x school	24.04	2	12.02	2.09	0.12	0.01
Between						
School	3165.62	2	1582.81	39.54	0.00	0.17
Gender	920.46	1	920.46	22.99	0.00	0.05
school x gender	313.23	2	156.62	3.91	0.02	0.02

The Anova analysis for Behaviour shows significant main effects for time, school and gender (p<0.01). This means that there are overall lower scores at S2 than S1 and for boys to have lower scores than girls overall. There is also an interaction of time by school (p<0.01), which means that the differences between S2 and S1 vary across the schools. However, there is no 3 way interaction effect between time, school, and gender of any level of significance. See graph below to illustrate these points. The mean for girls is lower in all 3 schools for both S1 and S2. The drop in mean for girls is closer to that of boys than in the previous 2 areas of the screen.

224

Figure 13 Results of 3 way factor analysis of interaction (gender and school over time) for LAMP scale Behaviour

| | Boys | Girls | Boys | Girls | Boys | Girls | Boys | Girls | N=407 |
| | ẋ | ẋ | ẋ | ẋ | ẋ | ẋ | ẋ | ẋ | X |
	Sch 1 Cedar		Sch 2 Oak		Sch 3 Beech		Total by gender		Total
■ Screen 1	10.47	7	3.21	2.14	6.12	4.16	5.21	3.57	4.37
■ Screen 2	8.41	3.37	2	1.2	4.67	2.69	3.8	1.98	2.86
■ Total	9.44	5.19	2.6	1.67	5.4	3.43	4.51	2.78	0
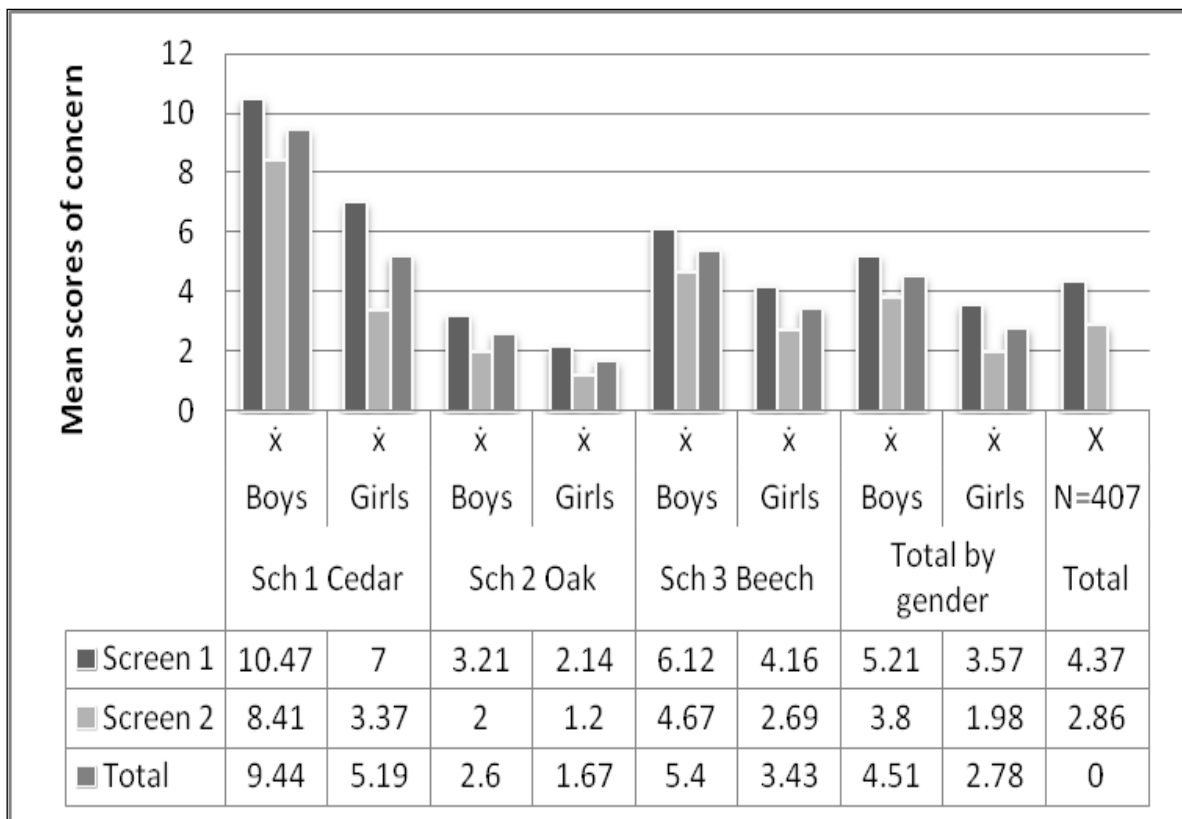
Lamp Scale Social Skills

Table 33 Results of 3 way factor analysis of variance (gender and school over time) for LAMP scale Social Skills

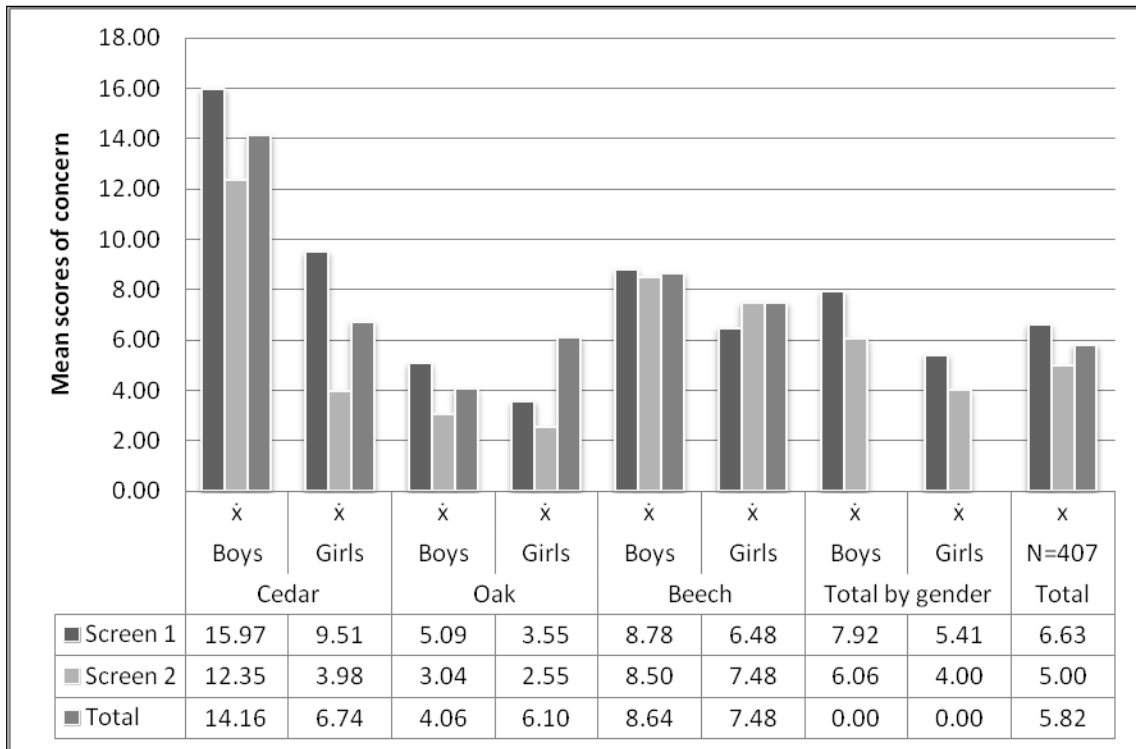| | Sch 1 Cedar | | | | Sch 2 Oak | | | | Sch 3 Beech | | | | Total by gender | | | | Total | |
| | Boys n = 34 | | Girls n = 41 | | Boys n = 112 | | Girls n = 119 | | Boys n = 51 | | Girls n = 50 | | Boys n = 197 | | Girls n = 210 | | N=396 | |
	ẋ	Sd	ẋ	Sd	ẋ	Sd	ẋ	Sd	ẋ	Sd	ẋ	Sd	ẋ	Sd	ẋ	Sd	x	sd
S1	6.32	5.91	4.10	4.17	1.35	2.42	0.79	1.61	3.02	3.92	2.33	4.24	2.63	4.06	1.79	3.68	2.21	3.68
S2	0.87	0.82	0.26	0.41	0.13	0.26	0.07	0.17	0.33	0.53	0.21	0.53	0.31	0.55	0.14	0.34	0.23	0.46
Total	3.60		2.18		0.74		0.43		1.68		1.27		1.47		0.97		1.22	
Total boys + girls	2.89				0.58				1.47				1.22					

Table 34 Results of within +between factor analysis of interactions (school, and gender over time) for Lamp scale Social Skills

Within	Ss	df	Ms	F	sig	Partial Eta squared (effect size)
Time	7528.50	1	7528.53	82.85	0.00	0.17
Time x school	1916.09	2	958.05	10.54	0.00	0.05
Time x gender	100.46	1	100.46	1.11	0.29	0.00
Time x gender x school	838.73	2	419.36	4.62	0.01	0.02
Between						
School	70285.34	2	35142.67	50.95	0.00	0.20
Gender	16734.47	1	16734.47	24.26	0.00	0.06
School x gender	8366.19	2	4183.09	6.06	0.03	0.03

The Anova analysis for Social Skills related to language shows significant main effects for time, school and gender at ($p<0.01$). Though there are 2 way interactions, there is also a 3 way interaction effect between time, school and gender significant at ($p<0.05$) level. This indicates that the decrease from S1 to S2 vary by gender and school. Table 33 shows that the mean for girls is lower in all 3 schools for both S1 and S2. In Cedar the drop in mean is lower for girls and in Oak and Beech the drop in mean from S1 to S2 was also less for girls than for boys. In Oak school boys' scores were least different to girls' scores relative to the other schools.

Figure 14 Results of 3 way factor analysis of interaction (gender and school over time) for LAMP scale Social Skills

	Cedar Boys	Cedar Girls	Oak Boys	Oak Girls	Beech Boys	Beech Girls	Total by gender Boys	Total by gender Girls	Total N=396
■ Screen 1	6.32	4.1	1.35	0.79	3.02	2.33	2.63	1.79	2.21
■ Screen 2	0.87	0.26	0.13	0.07	0.33	0.21	0.31	0.14	0.23
■ Total	3.6	2.18	0.74	0.43	1.68	1.27	1.47	0.97	1.22
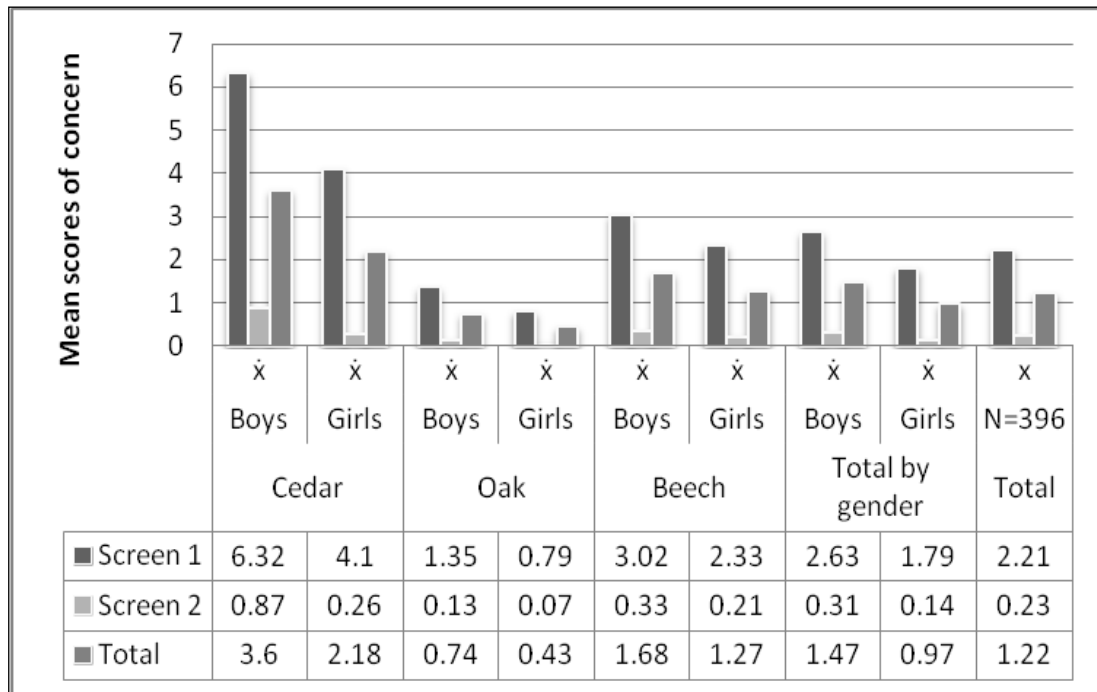
RQ 4: What is the incidence of language difficulties based on analysis by year group

The analysis of variance for the year group was made by consulting individual school data. Data for the 3 schools was then combined to explore the interactions between year groups and LAMP concern scores.

LAMP screen total

Table 35 results of 3 way analysis of variance for Cedar school Year Group LAMP. Total of 4 scales

	Cedar															
Year Group	0		1		2		3		4		5		6		total	
Screen	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2
Mean	42.22	23.33	48.00	22.08	29.60	12.60	41.77	51.15	83.00	84.00	13.80	13.20	44.57	28.00	38.62	25.63
Std. Deviation	22.34	25.10	31.26	26.60	22.50	17.13	31.87	30.46			7.53	8.58	37.58	26.34	27.83	27.32
N	18		12		20		13		1		5		7		76	

Table 36 results of 3 way analysis of variance for Oak school Year Group LAMP. Total of 4 scales

Screen	1	2	1	2	1	2	1	2	1	2	1	2
Mean	6.82	2.12	6.23	5.14	21.14	12.67	7.70	4.24	15.00	8.00	11.65	6.92
Std. Deviation	7.07	3.35	9.38	9.02	18.98	13.87	14.13	7.62	22.69	14.66	16.41	11.36

Table 37 Results of 3 way analysis of variance for Beech school Year Group LAMP. Total of 4 scales

	Beech															
Year Group	0		1		2		3		4		5		6		total	
Screen	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2
Mean	46.36	60.73	15.90	6.05	14.08	10.75	25.00	17.44	29.80	24.10	22.00	20.62	19.44	15.25	23.35	.71
Std. Deviation	38.03	5.22	10.83	5.04	9.37	10.91	25.07	21.55	32.41	29.34	27.51	27.06	27.84	28.38	25.96	.02
N		11		21		12		18		10		13		16		101

Table 38 Results of within +between factor analysis of interactions (school, and year group over time) for LAMP. Total of 4 scales

Within	Ss	df	Ms	F	sig	Partial Eta squared (effect size)
Time	2621.48	1.00	2621.48	33.55	0.00	0.08
time * school	524.23	2.00	262.12	3.35	0.04	0.02
time * year group	2211.68	6.00	368.61	4.72	0.00	0.07
time * school * year group	7321.80	10.00	732.18	9.37	0.00	0.19
Between						
School	58189.48	2.00	29094.74	45.51	0.00	0.19
year group	26139.39	6.00	4356.57	6.81	0.00	0.09
school * year group	24910.95	10.00	2491.09	3.90	0.00	0.09

The Anova analysis shows significant main effects for time, time by year group, and time by school by year group at ($p<0.01$) .This means that there are overall lower scores at S2 than S1 and for year groups and schools to have significantly different mean scores. There is also an interaction effect between time and school significant at ($p<0.05$) level showing that though scores decrease from S1 to S2, the decrease is much larger for Cedar than the other schools. There is also an interaction effect between time and year group significant at ($p<0.01$) showing that though scores decrease from S1 to S2 the decrease is much larger in year 2.

The analysis of the 4 scales (ERBS)

In this analysis the relationship between year group and LAMP scores in the 4 schools was investigated. The repeated measures Anova showed significant main effects.

LAMP scale Expressive

Table 39 Results of 3 way analysis of variance (year group and school – over time) for LAMP scale Expressive

N = 409	year 1		year 2		year 3		year 4		year 5		year 6		Total	
	X	sd	X	Sd	x	sd	x	sd	x	sd	x	sd	x	sd
S1	4.76	6.99	7.78	6.72	8.51	8.34	10.00	12.09	4.45	6.56	6.52	9.08	6.68	8.19
S2	3.02	5.33	3.88	4.89	6.43	7.48	9.00	11.74	4.12	6.68	4.88	7.46	5.01	7.86
Total x	3.89		5.83		7.47		9.50		4.28		5.70		5.84	

Table 40 Results of within +between factor analysis of interactions (schools, and year group over time) for LAMP scale Expressive

Within	ss	df	Ms	F	sig	Partial Eta squared (effect size)
Time	307.19	1.00	307.19	27.08	0.00	0.06
time * school	58.22	2.00	29.11	2.57	0.08	0.01
time * year group	382.96	6.00	63.83	5.63	0.00	0.08
time * school * year group	862.90	10.00	86.29	7.61	0.00	0.16
Between						
School	7285.37	2.00	3642.69	51.53	0.00	0.21
year group	2960.66	6.00	493.44	6.98	0.00	0.10
school * year group	2603.24	10.00	260.32	3.68	0.00	0.09

The Anova analysis shows significant main effects for time and school and year group, time by year group and school by year group. This means that there are overall lower scores at S2 than S1 and for year groups and schools to have significantly different mean scores. There is also a main interaction effect between time by school by year group (p<0.01) and shows that scores decreased from S1 to S2, and the decrease is much larger for Cedar than the other schools. There is an interaction effect between time and year group significant at (p<0.01) showing that though scores decrease from S1 to S2 the decrease is much larger in year 2. The graph in figure 15 shows this pattern of scores.

Figure 15 Results of 3 way analysis of variance (school, and year group over time) for LAMP scale Expressive

	x year 1	x year 2	x year 3	x year 4	x year 5	x year 6	x Total
■ screen 1	4.76	7.78	8.51	10	4.45	6.52	6.68
■ screen 2	3.02	3.88	6.43	9	4.12	4.88	5.01
■ Total x	3.89	5.83	7.47	9.5	4.28	5.7	5.84
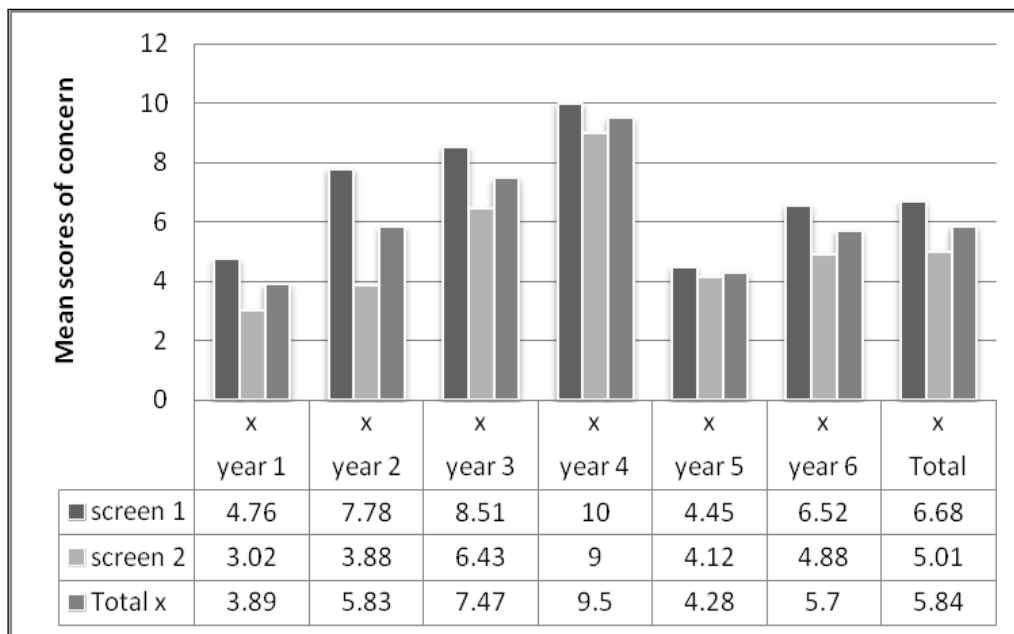
LAMP scale Receptive

Table 41 Results of 3 way analysis of variance (year group and school – over time) for LAMP scale Receptive

Total N = 409	year 1		year 2		year 3		year 4		year 5		year 6		Total	
	X	sd	x	Sd	x	sd	x	sd	x	sd	x	sd	x	sd
S1	4.03	6.56	7.75	5.96	8.28	8.07	9.73	12.37	3.86	6.35	6.45	8.65	6.13	7.81
S2	2.07	5.00	3.56	4.79	6.22	8.14	8.45	11.82	2.57	4.95	3.32	6.53	4.17	7.22
Total x	3.05		5.66		7.25		9.09		3.22		4.88		5.15	

Table 42 Results of 3 way analysis of <u>interaction</u> (year group and school – over time) for LAMP scale Receptive

Within	Ss	df	Ms	F	sig	Partial Eta squared (effect size)
Time	307.19	1.00	307.19	27.08	0.00	0.06
time * school	58.22	2.00	29.11	2.57	0.08	0.01
time * year group	382.96	6.00	63.83	5.63	0.00	0.08
time * school * year group	862.90	10.00	86.29	7.61	0.00	0.16
Between						
School	7285.37	2.00	3642.69	51.53	0.00	0.21
year group	2960.66	6.00	493.44	6.98	0.00	0.10
school * year group	2603.24	10.00	260.32	3.68	0.00	0.09

Figure 16 Results of 3 way analysis of variance (year group and school – over time) for LAMP scale Receptive

	year 1	year 2	year 3	year 4	year 5	year 6	Total
■ screen 1	4.03	7.75	8.28	9.73	3.86	6.45	6.13
■ screen 2	2.07	3.56	6.22	8.45	2.57	3.32	4.17

235
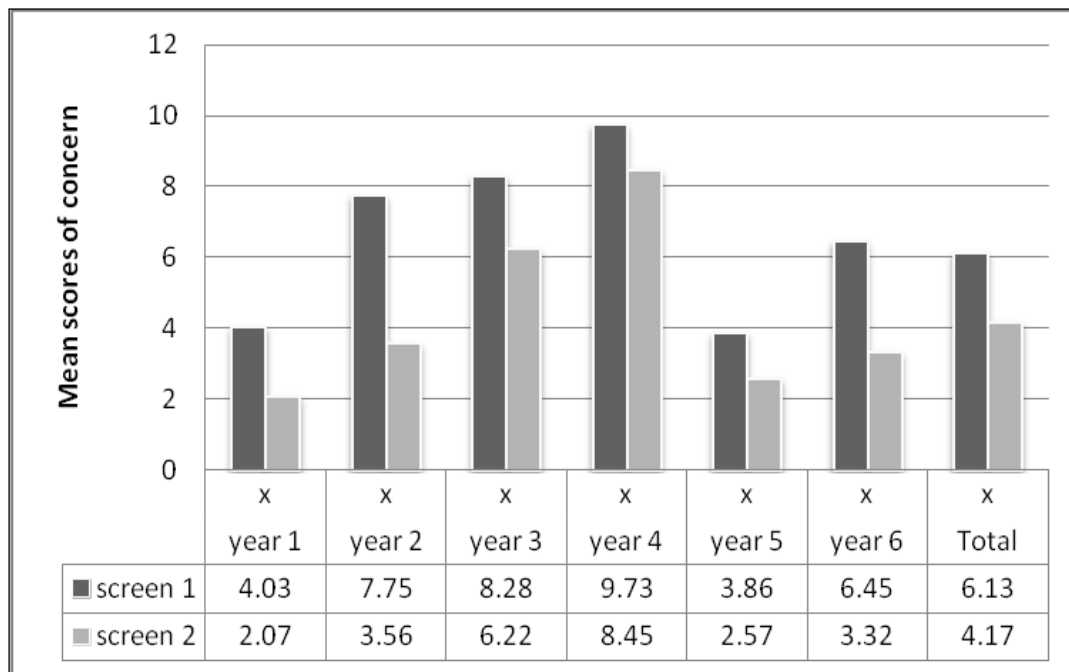
Table 43 Results of 3 way analysis of <u>variance</u> in the 3 schools (year group and school – over time) for LAMP scale Behaviour

N = 409	Total													
	year 1		year 2		year 3		year 4		year 5		year 6		Total	
	X	sd	X	Sd	x	sd	x	sd	x	sd	x	sd	x	sd
S1	2.87	4.31	4.88	4.97	5.42	5.25	9.00	9.37	2.31	4.38	4.55	6.91	4.40	5.78
S2	1.56	2.45	2.84	3.84	4.20	4.79	7.80	8.64	1.65	3.63	2.40	5.20	2.87	4.68
Total x	2.21		3.86		4.81		8.40		1.98		3.48		3.63	

Table 44 Results of within +between factor analysis of <u>interactions</u> (school, and year group over time) for LAMP scale Behaviour

Within	ss	df	Ms	F	sig	Partial Eta squared (effect size)
Time	185.44	1.00	185.44	38.28	0.00	0.09
time * school	47.57	2.00	23.78	4.91	0.01	0.02
time * year group	192.65	6.00	32.11	6.63	0.00	0.09
time * school * year group	427.98	10.00	42.80	8.83	0.00	0.19
Between						
School	2191.75	2.00	1095.87	29.73	0.00	0.13
year group	1553.21	6.00	258.87	7.02	0.00	0.10
school * year group	1333.71	10.00	133.37	3.62	0.00	0.09

The Anova analysis shows significant main effects for time and school and year group, time by school time by year group and school by year group. This means that there are overall lower scores at S2 than S1 and for year groups and schools to have significantly different mean scores. There is also a main interaction effect between time by school by year group at (p<0.01). This is showing that scores decrease from S1 to S2, and the decrease is larger for Cedar than the other schools. There is an interaction effect between time and year group significant at (p<0.01) showing that though scores decrease from S1

to S2 the decrease is much larger in year 2. The graph in figure 17 shows this pattern of scores.

Figure 17 Results of 3 way analysis of variance (Year group and school – over time) for LAMP scale Behaviour)

	x year 1	x year 2	x year 3	x year 4	x year 5	x year 6	x Total
■ screen 1	2.87	4.88	5.42	9	2.31	4.55	4.4
■ screen 2	1.56	2.84	4.2	7.8	1.65	2.4	2.87

<u>LAMP scale Social Skills</u>

Table 45 Results of 3 way analysis of <u>variance</u> (Year group and school – over time) for LAMP scale Social Skills

	Total													
N = 409	year 1		year 2		year 3		year 4		year 5		year 6		Total	
	x	sd	X	Sd	x	sd	x	sd	x	sd	x	sd	x	sd
S1	1.23	2.64	3.38	3.82	2.73	3.78	6.73	8.31	1.31	3.00	2.12	3.73	2.34	3.80
S2	0.66	1.69	1.63	2.55	2.40	3.62	5.00	6.63	0.96	2.58	1.67	3.83	1.52	3.18
Total x	0.94		2.50		2.57		5.86		1.14		1.89		1.93	

Table 46 Results of within +between factor analysis of <u>interactions</u> (school, and year group over time) for LAMP scale Social Skills

Within	Ss	df	Ms	F	sig	Partial Eta squared (effect size)
Time	99.22	1.00	99.22	40.23	0.00	0.09
time * school	16.20	2.00	8.10	3.28	0.04	0.02
time * year group	156.84	6.00	26.14	10.60	0.00	0.14
time * school * year group	201.43	10.00	20.14	8.17	0.00	0.17
Between						
School	1096.80	2.00	548.40	33.95	0.00	0.15
year group	595.35	6.00	99.23	6.14	0.00	0.09
school * year group	360.02	10.00	36.00	2.23	0.02	0.05

The Anova analysis shows significant main effects for time and school and year group (p<0.01), time by school (p<0.05) and school by year group (p<0.05). This means that there are overall lower scores at S2 than S1 and for year groups and schools to have significantly different mean scores. There is also a main interaction effect between time by school by year group at (p<0.01) and this is showing that scores decrease from S1 to S2, and the decrease is larger for Cedar than the other schools. There is an interaction effect between time and year group significant at (p<0.01) showing that though scores decrease from S1 to S2 the decrease is larger in year 2. The graph in figure 18 shows this pattern of scores.

238

Figure 18 Results of 3 way analysis of variance (year group and school – over time) for LAMP scale Social Skills

	x year 1	x year 2	x year 3	x year 4	x year 5	x year 6	x Total
■ screen 1	1.23	3.38	2.73	6.73	1.31	2.12	2.34
■ screen 2	0.66	1.63	2.4	5	0.96	1.67	1.52
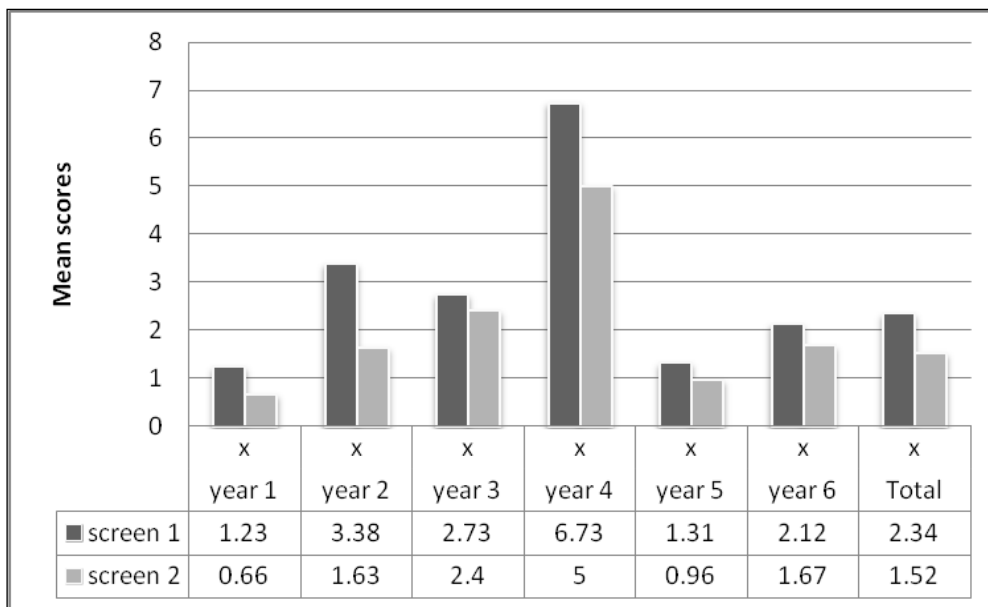
RQ 5: What is the incidence of language difficulties based on analysis by identification of level of need (by Universal, School Action, School Action Plus, Statement)?

The data was analysed by comparison with the children's status on the Special Educational Needs Register. I included a category of Universal for children not on the SEN Register codes.

Total LAMP screen

Table 47 Results of 3 way analysis of variance (SEN code and all schools – over time)
LAMP Total of 4 scales

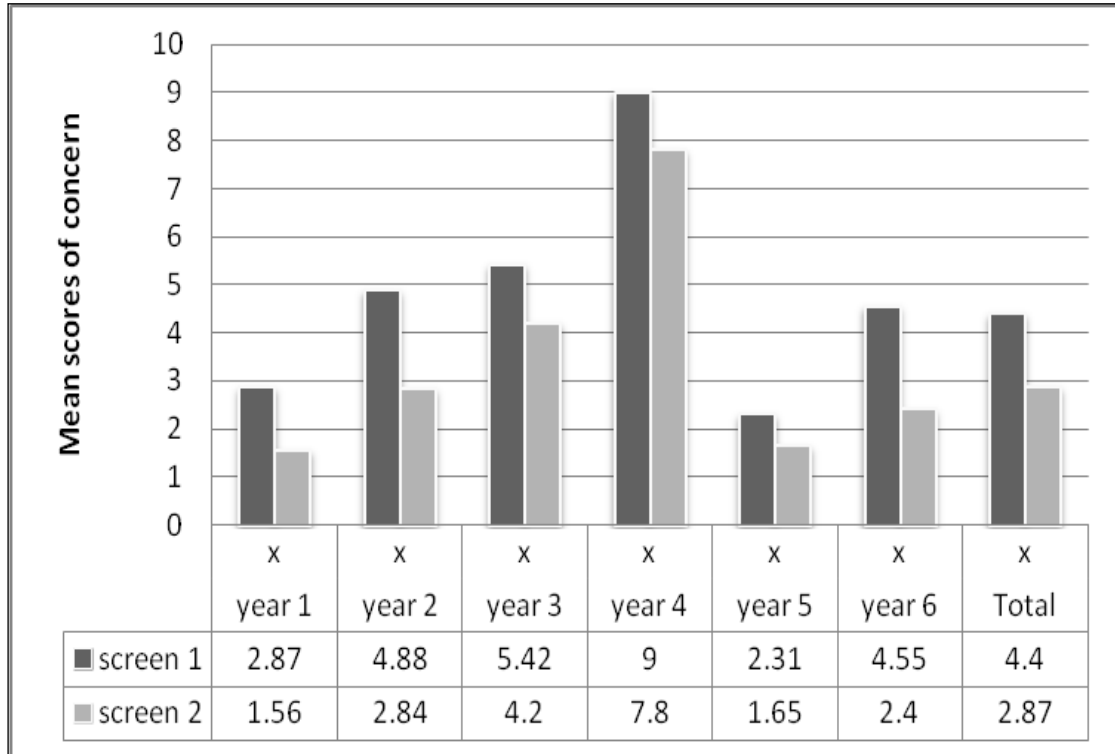| SEN Level	Universal							
School	Cedar N=58		Oak N= 218		Beech N= 86		Total N= 362	
Time	1	2	1	2	1	2	1	2
Mean	29.21	16.50	9.17	5.18	15.00	13.05	13.77	8.87
Std Deviation	20.85	17.70	12.15	8.08	13.15	18.80	15.80	13.90
SEN level	School Action							
School	Cedar N= 7		Oak N=8		Beech N= 4		Total N= 19	
Time	1	2	1	2	1	2	1	2
Mean	64.29	55.29	52.75	37.75	65.25	57.00	59.63	48.26
Std Deviation	7.00	32.87	8.00	20.41	22.23	9.97	21.77	24.98
SEN level	School Action Plus							
School	Cedar N= 7		Oak N= 3		Beech N= 10		Total N= 20	
Time	1	2	1	2	1	2	1	2
Mean	64.86	45.57	62.00	40.00	71.00	55.00	67.50	49.45
Std Deviation	31.72	34.36	19.16	10.54	33.16	24.00	29.85	26.32
SEN level	Statemented							
School	Cedar N= 4		Oak N= 1		Beech N= 1		Total N= 6	
Time	1	2	1	2	1	2	1	2
Mean	84.25	70.75	67.00	35.00	98.00	91.00	83.67	68.17
Std Deviation	23.54	29.85					20.72	29.40
SEN level	Total							
School	Cedar N= 76		Oak N= 230		Beech N= 101		Total N= 407	
Time	1	2	1	2	1	2	1	2
Mean	38.62	25.63	11.63	6.90	23.35	19.71	19.57	13.58
Std Deviation	27.83	27.32	16.45	11.38	25.96	25.02	23.85	20.66

Table 48 Results of within +between factor analysis of interactions (school and SEN over time) LAMP Total of 4 scales

Within	Ss	df	Ms	F	sig	Partial Eta squared (effect size)
Time	3819.98	1.00	3819.98	42.17	0.00	0.10
time * school	282.05	2.00	141.03	1.56	0.21	0.01
time * SEN Level	1560.59	3.00	520.20	5.74	0.00	0.04
time * school * SEN Level	766.02	6.00	127.67	1.41	0.21	0.02
Between						
School	4995.53	2.00	2497.77	6.62	0.00	0.03
SEN Level	123719.72	3.00	41239.91	109.34	0.00	0.45
school * SEN Level	3825.55	6.00	637.59	1.69	0.12	0.03

The Anova analysis shows significant main effects for time and school and SEN level (p<0.01) and a 2 way interaction time by SEN level (p<0.01). This means that there are overall lower scores at S2 than S1 and for SEN levels and schools to have significantly different mean scores.

LAMP scale Expressive

Table 49 Results of 3 way analysis of variance (SEN and all schools – over time) for LAMP scales score Expressive

Total by Expressive	Universal		School Action		School action plus		St		total	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Scr 1	4.86	5.78	20.42	7.86	21.85	11.59	23.17	10.72	6.69	8.20
Scr 2	3.58	6.32	16.74	8.65	16.10	10.50	17.33	11.24	5.01	7.88
Total children	362		19		20.		6		407	

Within	Ss	df	Ms	F	sig	Partial Eta squared (effect size)
Time	408.71	1.00	408.71	23.08	0.00	0.06
time * school	22.08	2.00	11.04	0.62	0.54	0.00
time * SEN Level	194.70	3.00	64.90	3.67	0.01	0.03
time * school * SEN Level	112.06	6.00	18.68	1.05	0.39	0.02
Between						
School	20350.66	1.00	20350.66	334.12	0.00	0.46
SEN Level	430.11	2.00	215.06	3.53	0.03	0.02
school * SEN Level	12113.78	3.00	4037.93	66.30	0.00	0.33

The Anova analysis shows significant main effects for time and school ($p<0.01$) and SEN ($p<0.05$) and time by SEN level ($p<0.05$). There is a significant effect between school and SEN level ($p<0.01$). This means that there are overall lower scores at S2 than S1 and for SEN levels and schools to have significantly different mean scores. The graph in figure 19 illustrates these patterns below.

Figure 19 Results of within +between factor analysis of interactions (school and SEN over time) LAMP Expressive

	Universal	School Action	School action plus	St	total
Scr 1	4.86	20.42	21.85	23.17	6.69
Scr 2	3.58	16.74	16.10	17.33	5.01
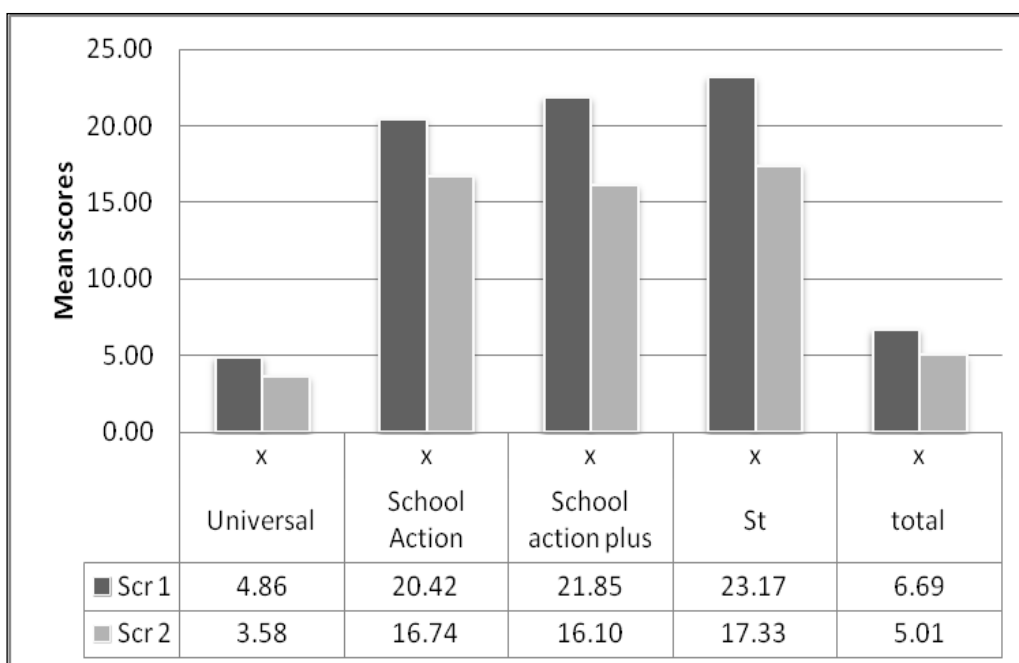
LAMP scale Receptive

Table 51 Results of 3 way analysis of variance (SEN and all schools – over time) for LAMP scales score Receptive

Total by Receptive	Universal		School Action		School action plus		St		total	
	Mean	Sd	Mean	Sd	Mean	Sd	Mean	Sd	Mean	Sd
Scr 1	4.28	5.44	19.89	6.10	20.15	9.85	27.83	3.76	6.13	7.83
Scr 2	2.64	5.07	16.47	9.79	14.95	10.08	22.17	8.30	4.18	7.24
Total children	362		19		20		6		407	

Table 52 Results of within +between factor analysis of interactions (school and SEN over time), for LAMP scales score Receptive

Within	Ss	df	Ms	F	sig	Partial Eta squared (effect size)
Time	408.75	1.00	408.75	30.94	0.00	0.07
time * school	81.59	2.00	40.79	3.09	0.05	0.02
time * SEN Level	173.56	3.00	57.85	4.38	0.00	0.03
time * school * SEN Level	123.55	6.00	20.59	1.56	0.16	0.02
Between						
School	536.22	2.00	268.11	6.09	0.00	0.03
SEN Level	12637.73	3.00	4212.58	95.67	0.00	0.42
school * SEN Level	442.05	6.00	73.67	1.67	0.13	0.02

The Anova analysis shows significant main effects for time and school and SEN level, and time by SEN level ($p<0.01$). This means that there are overall lower scores at S2 than S1 and for SEN levels and schools to have significantly different mean scores. The graph in figure 20 illustrates these patterns.

243

Figure 20 Results of factor analysis of interactions (school and SEN over time), for LAMP scales score Receptive

	Universal	School Action	School action plus	St	total
	x	x	x	x	x
■ Scr 1	4.28	19.89	20.15	27.83	6.13
■ Scr 2	2.64	16.47	14.95	22.17	4.18

244
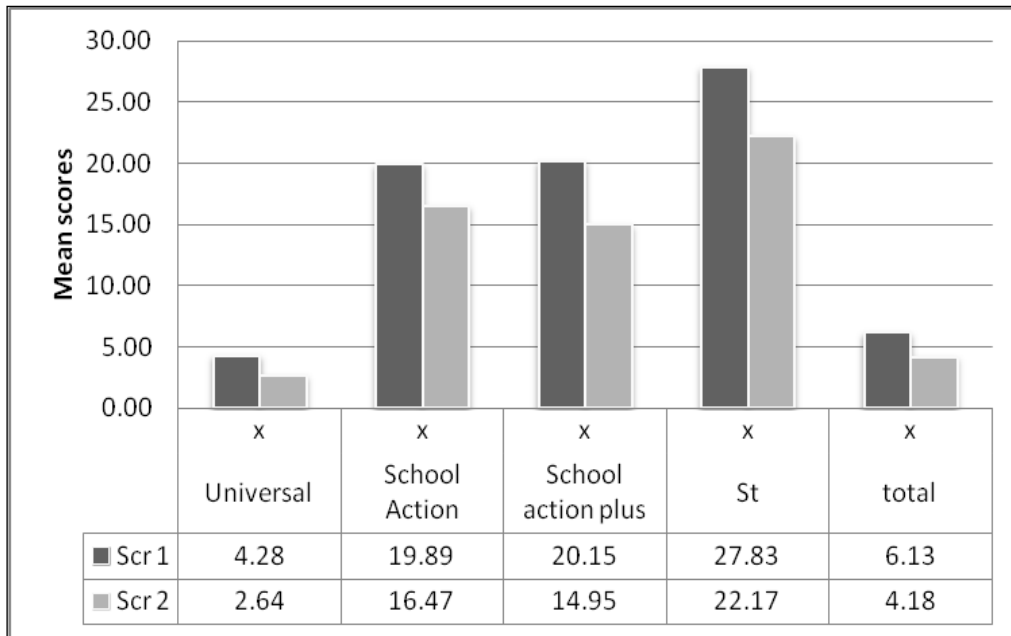
Table 53 Results of 3 way analysis of variance (SEN and all schools – over time) for LAMP scales score Behaviour

Total by Behaviour	Universal		School Action		School action plus		St		total	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Scr 1	3.13	4.17	12.84	6.16	15.15	7.00	19.17	5.27	4.41	5.79
Scr 2	1.83	3.00	9.32	5.87	11.75	7.35	15.50	7.74	2.87	4.69
Total children	362		19		20		6		407	

Table 54 Results of within +between factor analysis of interactions (school and SEN over time), for LAMP scales score Behaviour

Time	ss	df	Ms	F	sig	Partial Eta squared (effect size)
time * school	208.99	1.00	208.99	36.65	0.00	0.09
time * SEN Level	12.79	2.00	6.40	1.12	0.33	0.01
time * school * SEN Level	60.85	3.00	20.28	3.56	0.01	0.03
Between						
School	213.33	2.00	106.66	4.43	0.01	0.02
SEN Level	6478.24	3.00	2159.41	89.69	0.00	0.41
school * SEN Level	315.25	6.00	52.54	2.18	0.04	0.03

The Anova analysis shows significant main effects for time by school (p<0.01), and time by school by SEN level (p<0.05) school by SEN level at (p<0.01). This means that there are overall lower scores at S2 than S1 and for SEN levels and schools to have significantly different mean scores. The graph in figure 21 illustrates these patterns below.

Figure 21 Results of analysis of interactions (school and SEN over time), for LAMP scales score Behaviour

	x Universal	x School Action	x School action plus	x St	x total
■ Scr 1	3.13	12.84	15.15	19.17	4.41
■ Scr 2	1.83	9.32	11.75	15.50	2.87
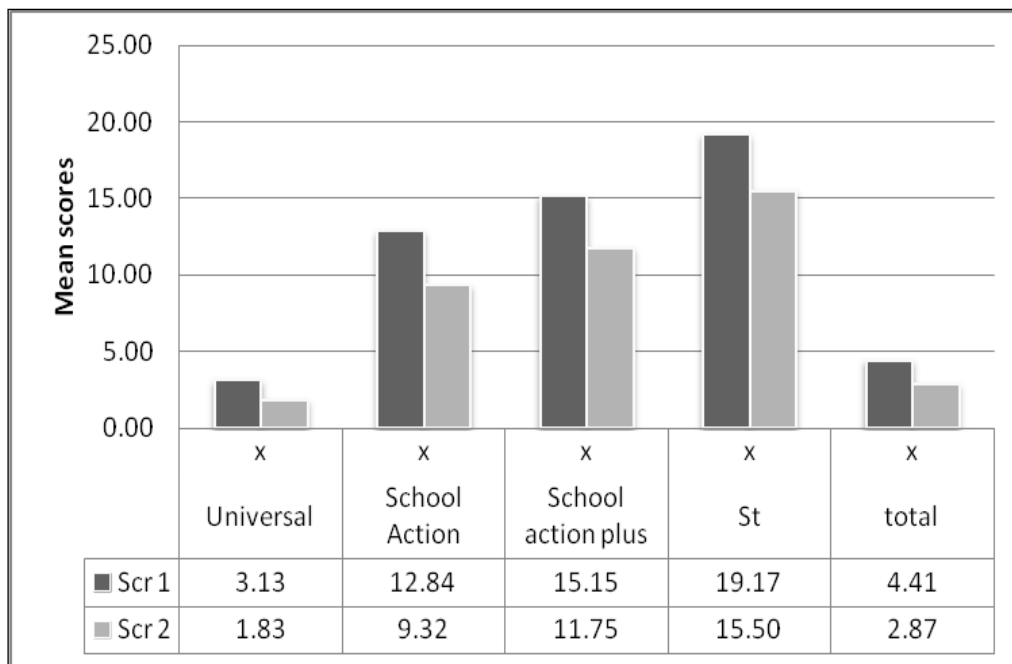
LAMP scale score Social Skills

Table 55 Results of 3 way analysis of variance (SEN and all schools – over time) for LAMP scales score - Social Skills

	Universal		School Action		School action plus		St		total	
Total by Social Skills	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Scr 1	1.51	2.47	6.47	4.19	10.35	5.79	13.50	5.13	2.35	3.81
Scr 2	0.82	1.78	5.74	4.87	6.65	5.45	13.17	5.08	1.52	3.19
Total children	362		19		20		6		407	

Table 56 Results of within + between factor analysis of interactions (school and SEN over time), for LAMP scales score Social Skills

Within	Ss	df	Ms	F	sig	Partial Eta squared (effect size)
Time	47.89	1.00	47.89	16.77	0.00	0.04
time * SEN Level	3.15	2.00	1.57	0.55	0.58	0.00
time * school * SEN Level	42.51	3.00	14.17	4.96	0.00	0.04
time * school * SEN Level	28.23	6.00	4.70	1.65	0.13	0.02
Between						
School	218.68	2.00	109.34	11.63	0.00	0.06
SEN Level	2708.06	3.00	902.69	95.98	0.00	0.42
school * SEN Level	104.38	6.00	17.40	1.85	0.09	0.03

The Anova analysis shows significant main effects for time, school and SEN level, (p<0.01), and school by SEN level (p<0.01). This means that there are overall lower scores at S2 than S1 and for SEN levels and schools to have significantly different mean scores. The graph in figure 22 illustrates these patterns below.

Figure 22 Results of factor analysis of interactions (school and SEN over time), for LAMP scales score Social Skills

	X Universal	X School Action	X School action plus	X St	X total
■ Scr 1	1.51	6.47	10.35	13.50	2.35
■ Scr 2	0.82	5.74	6.65	13.17	1.52
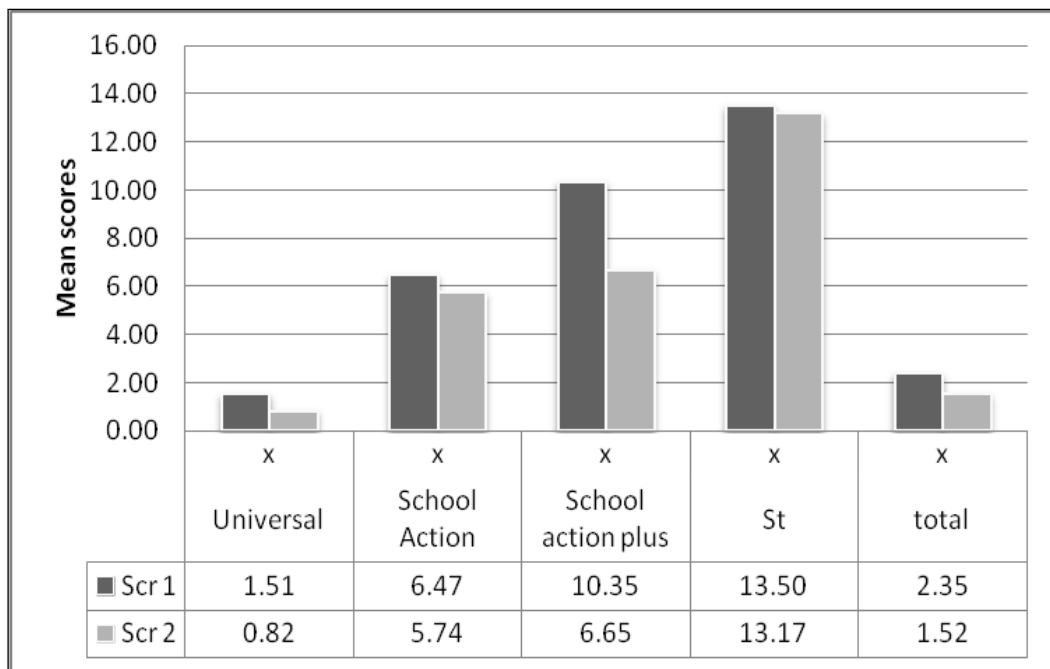
RQ 6: What is the incidence of language difficulties based on analysis by whether identified as having SLCN (on the SEN register)?

An analysis was made of the data for children who were on different areas of the SLCN code of practice. The Universal category was added to indicate that a child was not on School Action, School Action Plus or in receipt of a Statement.

Table 57 Results of within +between factor analysis (Slcn on SEN register all schools – over time) for LAMP scale Total and ERBS

Within	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Time	5623.48	1.00	5623.48	61.13	0.00	0.20
time * school	279.16	2.00	139.58	1.52	0.22	0.01
time * SLCN on SEN	203.09	1.00	203.09	2.21	0.14	0.01
time * school * SLCN on SEN	1592.03	2.00	796.01	8.65	0.00	0.07
Between						
School	37024.51	2.00	18512.26	32.02	0.00	0.21
SLCN on SEN	29343.05	1.00	29343.05	50.75	0.00	0.17
school * SLCN on SEN	12636.30	2.00	6318.15	10.93	0.00	0.08

The Anova analysis shows significant main effects for time, and school and for SLCN/SEN status (p<0.01). This means that there are overall lower scores at S2 than S1 and for SLCN/SEN status and schools to have significantly different mean scores. There is also a significant main effect within time and school and slcn/sen status (p<0.01) indicating that although there had been a decrease in mean scores these varied in schools and in SLCN/SEN levels. There is also a main interaction effect between time and school and SLCN/SEN status.

249

Analysis of the 4 scales (ERBS).

LAMP scale Expressive

Table 58 Results of 3 way analysis of variance (Slcn on SEN register all schools – over time) for LAMP scale Expressive

Expressive	Cedar Yes X	Cedar Yes Sd	Cedar No X	Cedar No Sd	Cedar Total x	Cedar Total Sd	Oak Yes x	Oak Yes Sd	Oak No x	Oak No Sd	Oak Total x	Oak Total Sd	Beech Yes x	Beech Yes Sd	Beech No x	Beech No Sd	Beech Total x	Beech Total Sd	Total Yes x	Total Yes Sd	Total No x	Total No Sd	Total Total x	Total Total Sd
Scr 1	20.00	11.77	11.13	7.60	12.53	8.92	14.56	6.87	3.08	5.23	4.70	6.77	6.10	8.65	6.05	7.29	6.06	7.48	14.08	10.20	6.04	7.29	7.31	8.33
Scr 2	17.17	9.39	6.02	7.31	7.78	8.64	8.94	6.28	2.50	4.63	3.41	5.36	4.00	7.89	4.18	6.19	4.14	6.47	10.18	9.05	3.86	6.02	4.86	6.96
total children	12		64		76		18		110		128		10		40		50		40		214		254	

Table 59 Results of within +between factor analysis of (Slcn on SEN register all schools – over time) for LAMP scale Expressive

Within	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Time	568.24	1.00	568.24	49.79	0.00	0.17
time * school	35.15	2.00	17.57	1.54	0.22	0.01
time * SLCN on SEN	15.37	1.00	15.37	1.35	0.25	0.01
time * school * SLCN on SEN	174.30	2.00	87.15	7.64	0.00	0.06
Between						
School	3012.94	2.00	1506.47	20.46	0.00	0.14
SLCN on SEN	2477.95	1.00	2477.95	33.65	0.00	0.12
school * SLCN on SEN	1099.20	2.00	549.60	7.46	0.00	0.06

The Anova analysis shows significant main effects for time,(p<0.01) and a 2 way effect for school by SLCN on SEN This means that there are overall lower scores at S2 than S1 and for SLCN/SEN status and schools to have significantly different mean scores. There is also a significant main effect within time and school and SLCN/SEN status (p<0.01) indicating that although there had been a decrease in mean scores these varied in schools and in SLCN/SEN levels.

Figure 23 Results of within +between factor analysis of (SLCN on SEN register all schools – over time) for LAMP scale Expressive

| | Cedar | | | Oak | | | Beech | | | Total | | |
	x yes	x No	x Total	x yes	x No	x Total	x yes	x No	x Total	x yes	x No	x Total
Scr 1	20.00	11.13	12.53	14.56	3.08	4.70	6.10	6.05	6.06	14.08	6.04	7.31
Scr 2	17.17	6.02	7.78	8.94	2.50	3.41	4.00	4.18	4.14	10.18	3.86	4.86

LAMP scale Receptive

Table 60 Results of 3 way analysis of variance (SLCN on SEN register all schools – over time) for LAMP scale Receptive

Receptive	Cedar						Oak						Beech						Total					
	yes		No		Total		yes		No		Total		Yes		No		Total		yes		No		Total	
	X	Sd	X	Sd	x	Sd	x	Sd	x	Sd	x	Sd	x	Sd	x	Sd	x	Sd	x	Sd	x	Sd	x	Sd
Scr 1	22.17	9.74	10.45	7.44	12.30	8.88	12.89	6.84	2.44	4.70	3.91	6.21	7.20	8.20	7.68	7.64	7.58	7.67	14.25	9.78	5.81	7.17	7.14	8.21
Scr 2	17.75	9.80	6.75	8.53	8.49	9.57	6.83	4.88	1.20	3.25	1.99	4.02	5.20	7.41	4.95	7.76	5.00	7.62	9.70	8.89	3.56	6.65	4.53	7.38
total children	12		64		76		18		110		128		10		40		50		40		214		254	

Table 61 Results of within +between factor analysis of (SLCN on SEN register all schools – over time) for LAMP scale Receptive

Within	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Time	568.24	1.00	568.24	49.79	0.00	0.17
time * school	35.15	2.00	17.57	1.54	0.22	0.01
time * SLCN on SEN	15.37	1.00	15.37	1.35	0.25	0.01
time * school * SLCN on SEN	174.30	2.00	87.15	7.64	0.00	0.06
Between						
School	3012.94	2.00	1506.47	20.46	0.00	0.14
SLCN on SEN	2477.95	1.00	2477.95	33.65	0.00	0.12
school * SLCN on SEN	1099.20	2.00	549.60	7.46	0.00	0.06

The Anova analysis shows significant main effects for time, and school and for SLCN/SEN status (p<0.01). This means that there are overall lower scores at S2 than S1 and for SLCN/SEN status and schools to have significantly different mean scores. There is also a significant main effect within time and school and slcn/sen status (p<0.01) indicating that although there had been a decrease in mean scores these varied in schools and in SLCN/SEN levels (p<0.01). There is also a main interaction effect between time and school and SLCN/SEN status. The graph in figure 24 illustrates these patterns below.

Figure 24 Results of within +between factor analysis of (SLCN on SEN register all schools – over time) for LAMP scale Receptive

	Cedar			Oak			Beech			Total		
	x yes	x No	x Total	x yes	x No	x Total	x yes	x No	x Total	x yes	x No	x Total
Scr 1	22.17	10.45	12.30	12.89	2.44	3.91	7.20	7.68	7.58	14.25	5.81	7.14
Scr 2	17.75	6.75	8.49	6.83	1.20	1.99	5.20	4.95	5.00	9.70	3.56	4.53

255
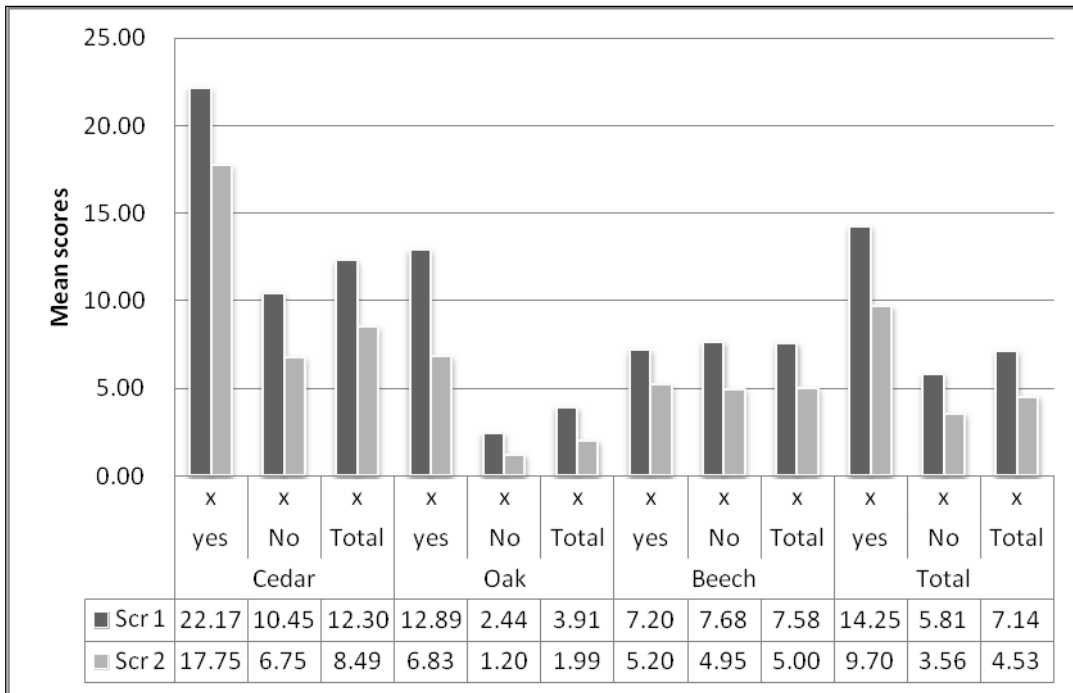
LAMP scale Behaviour

Table 62 Results of 3 way analysis of variance (SLCN on SEN register all schools – over time) for LAMP scale Behaviour

	Cedar						Oak						Beech						Total					
	Yes		No		Total		Yes		No		Total		Yes		No		Total		Yes		No		Total	
Behaviour	X	Sd	X	Sd	x	Sd	x	Sd	x	Sd	x	Sd	x	Sd	x	Sd	x	Sd	x	Sd	x	Sd	x	Sd
Scr 1	22.17	9.74	10.45	7.44	12.30	8.88	12.89	6.84	2.44	4.70	3.91	6.21	7.20	8.20	7.68	7.64	7.58	7.67	14.25	9.78	5.81	7.17	7.14	8.21
Scr 2	17.75	9.80	6.75	8.53	8.49	9.57	6.83	4.88	1.20	3.25	1.99	4.02	5.20	7.41	4.95	7.76	5.00	7.62	9.70	8.89	3.56	6.65	4.53	7.38
total children	12		64		76		18		110		128		10		40		50		40		214		254	

Table 63 Results of within +between factor analysis of (SLCN on SEN register all schools – over time) for LAMP scale Behaviour

Within	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Time	702.50	1.00	702.50	53.76	0.00	0.18
time * school	27.61	2.00	13.81	1.06	0.35	0.01
time * SLCN on SEN	40.04	1.00	40.04	3.06	0.08	0.01
time * school * SLCN on SEN	98.38	2.00	49.19	3.76	0.02	0.03
Between						
School	3898.68	2.00	1949.34	27.75	0.00	0.18
SLCN on SEN	2577.89	1.00	2577.89	36.70	0.00	0.13
school * SLCN on SEN	1226.05	2.00	613.02	8.73	0.00	0.07

The Anova analysis shows significant main effects for time, and school and for SLCN/SEN status (p<0.01). This means that there are overall lower scores at S2 than S1 and for SLCN/SEN status and schools to have significantly different mean scores. There is also a significant main effect within time and school and slcn/sen status (p<0.01) indicating that although there had been a decrease in mean scores these varied in schools and in SLCN/SEN levels. There is also a main interaction effect between school and SLCN/SEN status (p<0.01).

Figure 25 Results of factor analysis of (SLCN on SEN register all schools – over time) for LAMP scale, Behaviour

257

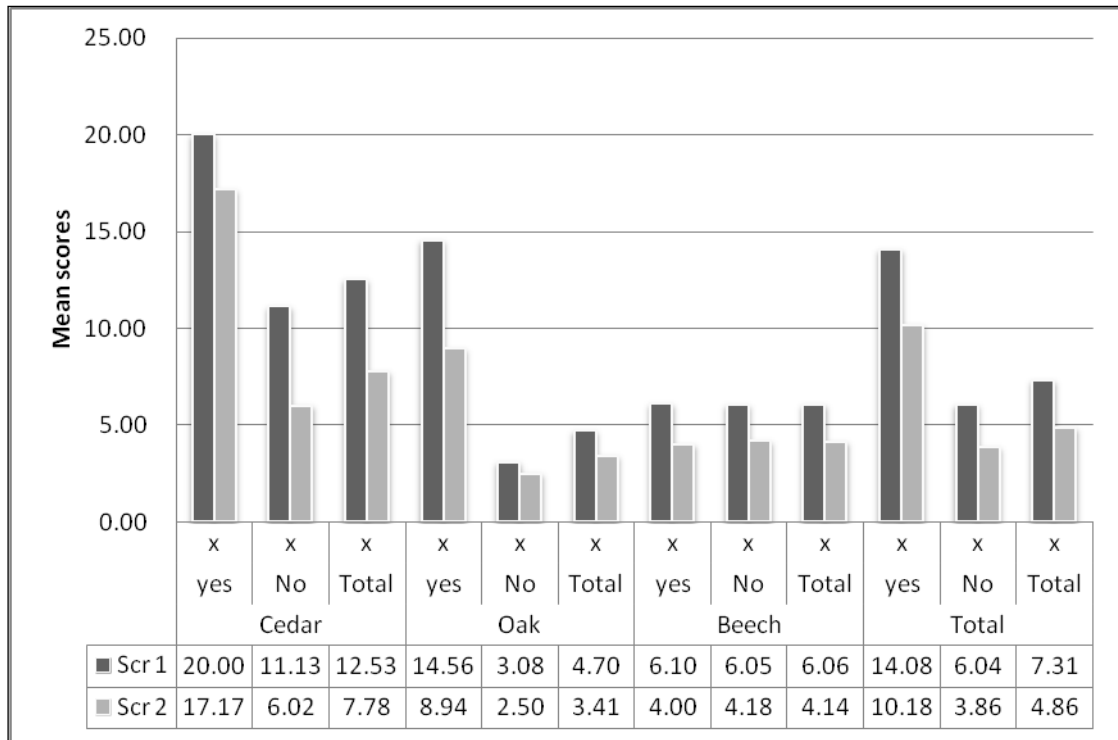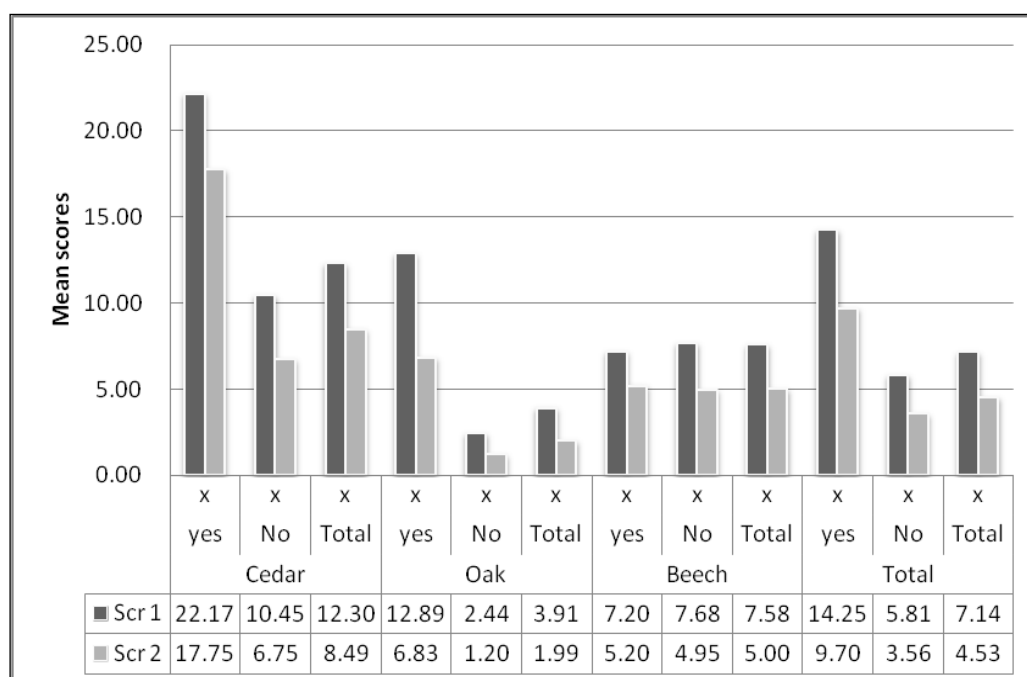*Table 64 Results of 3 way analysis of variance (Slcn on SEN register all schools – over time) for LAMP scale Social Skills*

| | Cedar | | | | | | Oak | | | | | | Beech | | | | | | Total | | | | | |
| | Yes | | No | | Total | | Yes | | No | | Total | | Yes | | No | | Total | | Yes | | No | | Total | |
Social Skills	X	Sd	X	Sd	x	Sd	x	Sd	x	Sd	x	Sd	x	Sd	x	Sd	x	Sd	x	Sd	x	Sd	x	Sd
Scr 1	10.17	6.42	4.23	4.28	5.17	5.12	5.72	3.21	0.35	1.05	1.11	2.41	2.50	3.92	2.65	3.39	2.62	3.46	6.25	5.30	1.94	3.33	2.62	4.01
Scr 2	10.33	5.99	2.53	3.48	3.76	4.86	3.33	2.38	0.20	0.92	0.64	1.63	1.50	3.72	1.83	2.85	1.76	3.01	4.98	5.38	1.20	2.57	1.80	3.45
Total children	12		64		76		18		110		128		10		40		50		40		214		254	

Table 65 Results of within + between factor analysis of (SLCN on SEN register all schools – over time) for LAMP scale, Social Skills.

Within	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Time	60.41	1.00	60.41	17.97	0.00	0.07
time * school	3.41	2.00	1.71	0.51	0.60	0.00
time * slcn on sen	0.50	1.00	0.50	0.15	0.70	0.00
time * school * slcn on sen	52.06	2.00	26.03	7.74	0.00	0.06
Between						
School	1153.13	2.00	576.56	41.54	0.00	0.25
slcn on sen	820.35	1.00	820.35	59.10	0.00	0.19
school * slcn on sen	455.32	2.00	227.66	16.40	0.00	0.12

The Anova analysis shows significant main effects for time, and school and for SLCN/SEN status (p<0.01). This means that there are overall lower scores at S2 than S1 and for SLCN/SEN status and schools to have significantly different mean scores. There is also a significant main effect within time and school and slcn/sen status (p<0.01) indicating that although there had been a decrease in mean scores these varied in schools and in SLCN/SEN levels. There is also a main interaction effect between school and SLCN/SEN status (p<0.01) which indicate that the scores had dropped. The graph in figure 26 illustrates these patterns.

259

Figure 26 Results of within +between factor analysis of (SLCN on SEN register all schools – over time) for LAMP scale Social Skills.

	x yes	x No	x Total	x yes	x No	x Total	x yes	x No	x Total	x yes	x No	x Total
	Cedar			Oak			Beech			Total		
■ Scr 1	10.17	4.23	5.17	5.72	0.35	1.11	2.5	2.65	2.62	6.25	1.94	2.62
■ Scr 2	10.33	2.53	3.76	3.33	0.2	0.64	1.5	1.83	1.76	4.98	1.2	1.8
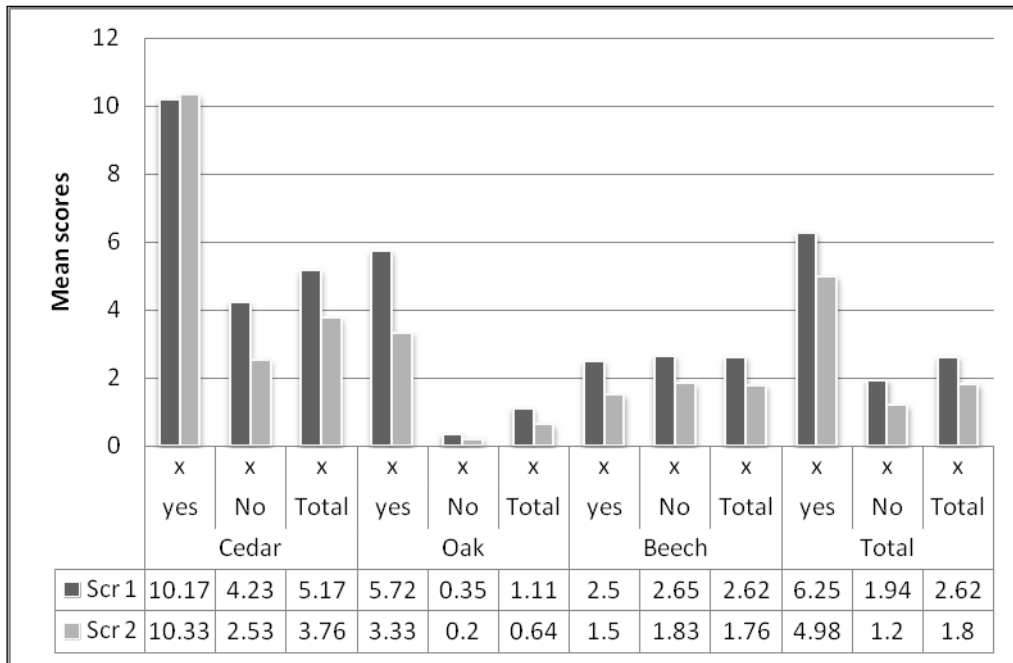
RQ 7: What is the incidence of language difficulties based on analysis by speaking and listening levels?

An analysis was made of LAMP scores with speaking and listening levels where they were provided by the schools. Speaking and listening levels are recorded in many schools and although we did not have this for every child there was a sufficient body of results with which to make some comparisons.

<u>LAMP total scale</u>

Table 66 Results of within +between factor analysis of interactions (Sp/l and all schools – over time) for LAMP Total of 4 scales

Within	ss	df	Ms	F	sig	Partial Eta squared (effect size)
Time	2840.84	1.00	2840.84	35.12	0.00	0.09
time * school	406.93	2.00	203.46	2.52	0.08	0.01
time * speaking and listening level	1332.57	8.00	166.57	2.06	0.04	0.04
time * school * speaking and listening level	2399.23	8.00	299.90	3.71	0.00	0.07
Between						
School	12648.02	2.00	6324.01	12.03	0.00	0.06
speaking and listening level	41830.66	8.00	5228.83	9.95	0.00	0.18
school * speaking and listening level	26999.20	8.00	3374.90	6.42	0.00	0.12

The analysis of the 4 scales (ERBS).

LAMP scale Expressive

Table 67 Results of 3 way analysis of variance (Sp/l and all schools – over time) for LAMP scale - Expressive

N = 389	level 0		level 1		level 2		level 3		level 4		level 5		level 6		level 7		level 8		Total	
	X	Sd	x	sd	x	sd	x	sd	x	sd	x	Sd	x	sd	x	sd	x	sd	x	sd
S1	32.33	3.51	8.25	9.85	7.61	7.54	7.10	7.36	2.89	4.17	1.15	2.72	1.00	1.33	3.62	4.99	0.67	1.63	6.27	7.83
S2	22.67	9.07	9.01	11.63	5.71	7.43	4.93	6.09	1.91	3.23	0.65	1.67	3.90	4.82	0.46	0.52	0.17	0.41	4.93	7.78
Total	3		75		92		100		64		26		10		13		6		389	

The table header spans "Expressive by speaking and listening levels".

Table 68 Results of within +between factor analysis of interactions (Sp/l and all schools – over time) for LAMP scale Expressive

Within	Ss	df	Ms	F	sig	Partial Eta squared (effect size)
Time	266.41	1.00	266.41	16.48	0.00	0.04
time * school	77.23	2.00	38.61	2.39	0.09	0.01
time * speaking and listening level	247.01	8.00	30.88	1.91	0.06	0.04
time * school * speaking and listening level	469.41	8.00	58.68	3.63	0.00	0.07
Between						
School	1484.24	2.00	742.12	10.49	0.00	0.05
speaking and listening level	5757.68	8.00	719.71	10.17	0.00	0.18
school * speaking and listening level	3191.75	8.00	398.97	5.64	0.00	0.11

The Anova analysis shows significant main effects for time and for school and for speaking and listening levels (p<0.01), and time by speaking and listening levels (p<0.05). This means that there are overall lower scores at S2 than S1 and for speaking and listening levels and schools to have significantly different mean scores. There is also a significant main interaction between time and school and speaking and listening levels (p<0.01) indicating that although there had been decrease in mean scores these varied in schools and in speaking and listening levels. The graph in figure 27 illustrates these patterns.

Figure 27 Results of within between factor analysis of interactions (Sp/l and all schools – over time) for LAMP scale Expressive

	x level 0	x level 1	x level 2	x level 3	x level 4	x level 5	x level 6	x level 7	x level 8	x Total
screen 1	32.33	8.25	7.61	7.10	2.89	1.15	1.00	3.62	0.67	6.27
screen 2	22.67	9.01	5.71	4.93	1.91	0.65	3.90	0.46	0.17	4.93
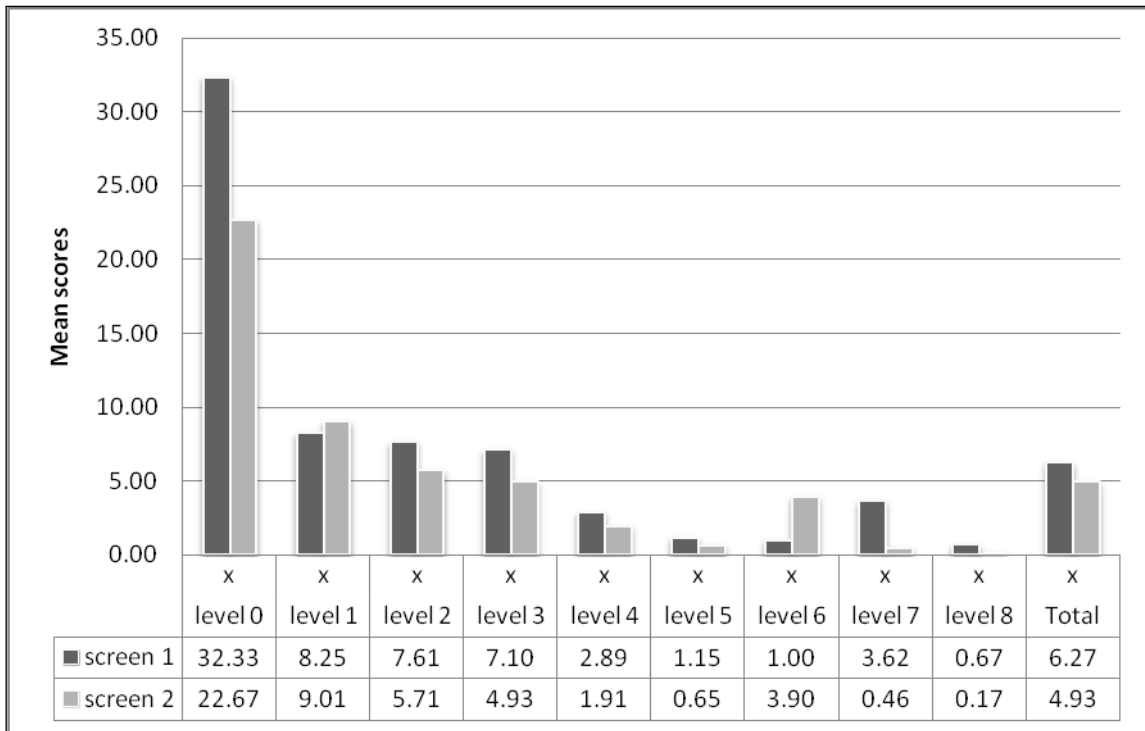
LAMP scale score Receptive

Table 69 Results of 3 way analysis of variance (Sp/l and all schools – over time) for LAMP scale - Receptive

N = 389	Receptive by speaking and listening levels																		
	level 0		level 1		level 2		level 3		level 4		level 5		level 6		level 7		level 8		Total	
	X	Sd	x	sd	x	sd	x	sd	x	sd	x	Sd	x	sd	x	sd	x	sd	x	sd
S1	22.67	8.02	7.83	9.67	7.73	7.99	6.28	6.63	2.64	3.64	1.00	2.38	1.50	2.12	1.85	2.70	0.00	0.00	5.73	7.47
S2	19.00	5.20	7.01	10.15	5.35	7.45	3.28	4.57	1.19	2.81	0.19	0.98	1.20	1.40	0.38	0.51	0.00	0.00	3.86	6.84
Total	3		75		92		100		64		26		10		13		6		389	

Table 70 Results of within between factor analysis of interactions (Sp/l and all schools – over time) for LAMP scale Receptive

Within	ss	df	Ms	F	sig	Partial Eta squared (effect size)
Time	266.41	1.00	266.41	16.48	0.00	0.04
time * school	77.23	2.00	38.61	2.39	0.09	0.01
time * speaking and listening level	247.01	8.00	30.88	1.91	0.06	0.04
time * school * speaking and listening level	469.41	8.00	58.68	3.63	0.00	0.07
Between						
School	1484.24	2.00	742.12	10.49	0.00	0.05
speaking and listening level	5757.68	8.00	719.71	10.17	0.00	0.18
school * speaking and listening level	3191.75	8.00	398.97	5.64	0.00	0.11

The Anova analysis shows significant main effects for time and for school and for speaking and listening levels (p<0.01), and time by speaking and listening levels (p<0.05). This means that there are overall lower scores at S2 than S1 and for speaking and listening levels and schools to have significantly different mean scores. There is also a significant main interaction between time and school and speaking and listening levels (p<0.01) indicating that although there had been decrease in mean scores these varied in schools and in speaking and listening levels. The graph in figure 28 illustrates these patterns.

Figure 28 Results of within +between factor analysis of interactions (Sp/l and all schools – over time) for LAMP scale Receptive

	x level 0	x level 1	x level 2	x level 3	x level 4	x level 5	x level 6	x level 7	x level 8	x Total
screen 1	22.67	7.83	7.73	6.28	2.64	1.00	1.50	1.85	0.00	5.73
screen 2	19.00	7.01	5.35	3.28	1.19	0.19	1.20	0.38	0.00	3.86

267
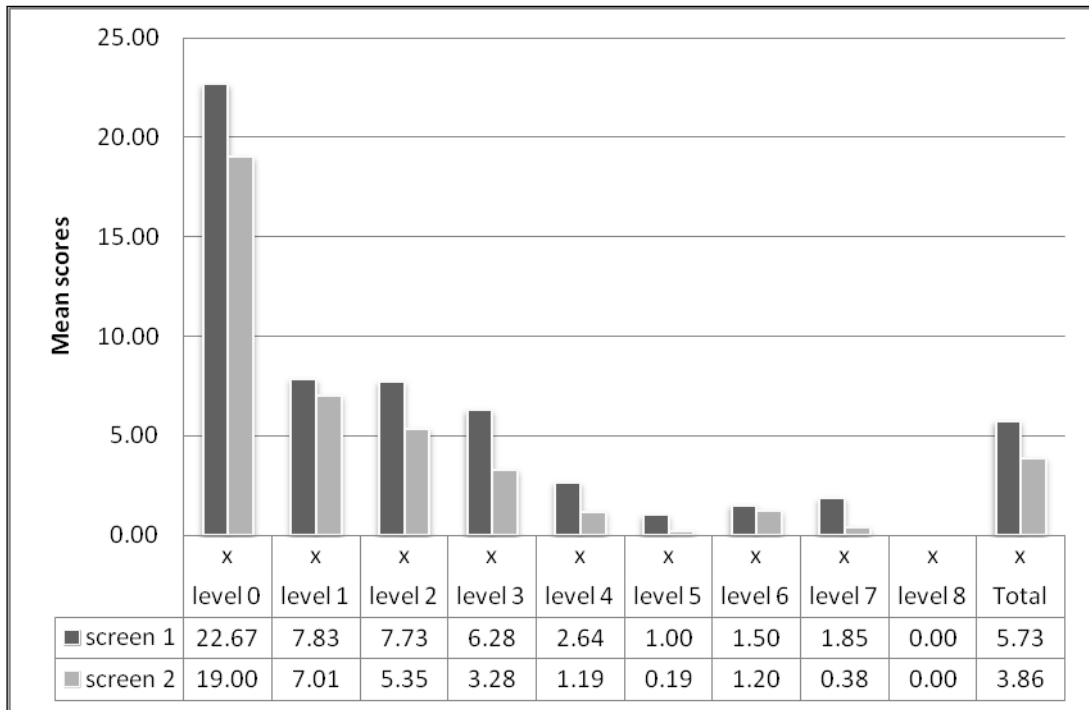
LAMP scale score Behaviour

Table 71 Results of 3 way analysis of variance (Sp/l and all schools – over time) for LAMP scale - Behaviour

	Behaviour by speaking and listening levels																			
N = 389	level 0		level 1		level 2		level 3		level 4		level 5		level 6		level 7		level 8		Total	
	X	Sd	x	sd	x	sd	x	sd	x	sd	x	sd	x	sd	x	sd	x	sd	x	sd
S1	18.67	5.13	5.49	6.71	4.91	5.43	4.43	5.07	1.97	3.31	0.58	1.47	1.40	2.22	1.31	1.32	0.33	0.82	3.95	5.36
S2	13.33	7.23	3.68	5.24	3.53	4.74	2.77	3.51	0.95	2.70	0.12	0.43	1.00	1.63	0.77	1.17	0.17	0.41	2.58	4.21
Total	3		75		92		100		64		26		10		13		6		389	

Table 72 Results of within +between factor analysis of interactions (Sp/l and all schools – over time) for LAMP scale Behaviour

Within	ss	df	Ms	F	sig	Partial Eta squared (effect size)
Time	142.52	1.00	142.52	29.42	0.00	0.07
Time * school	15.25	2.00	7.63	1.57	0.21	0.01
Time * speech and listening level	95.22	8.00	11.90	2.46	0.01	0.05
Time * school * speech and listening level	172.93	8.00	21.62	4.46	0.00	0.09
Between						
School	301.08	2.00	150.54	4.94	0.01	0.03
Speech and listening level	1966.51	8.00	245.81	8.06	0.00	0.15
School * speech and listening level	1120.99	8.00	140.12	4.59	0.00	0.09

The Anova analysis shows significant main effects for time and for speaking and listening levels ($p < 0.01$), and for school ($p < 0.05$), and time by speaking and listening levels ($p < 0.05$). This means that there are overall lower scores at S2 than S1 and for speaking and listening levels and schools to have significantly different mean scores. There is also a significant main interaction between time and school and behaviour by speaking and listening levels ($p < 0.05$), indicating that although there had been decrease in mean scores these varied in schools and in behaviour by speaking and listening levels. The graph in figure 29 illustrates these patterns.

Figure 29 Results of within +between factor analysis of interactions (Sp/l and all schools – over time) for LAMP scale Behaviour

	x level 0	x level 1	x level 2	x level 3	x level 4	x level 5	x level 6	x level 7	x level 8	x Total
screen 1	18.67	5.49	4.91	4.43	1.97	0.58	1.40	1.31	0.33	3.95
screen 2	13.33	3.68	3.53	2.77	0.95	0.12	1.00	0.77	0.17	2.58
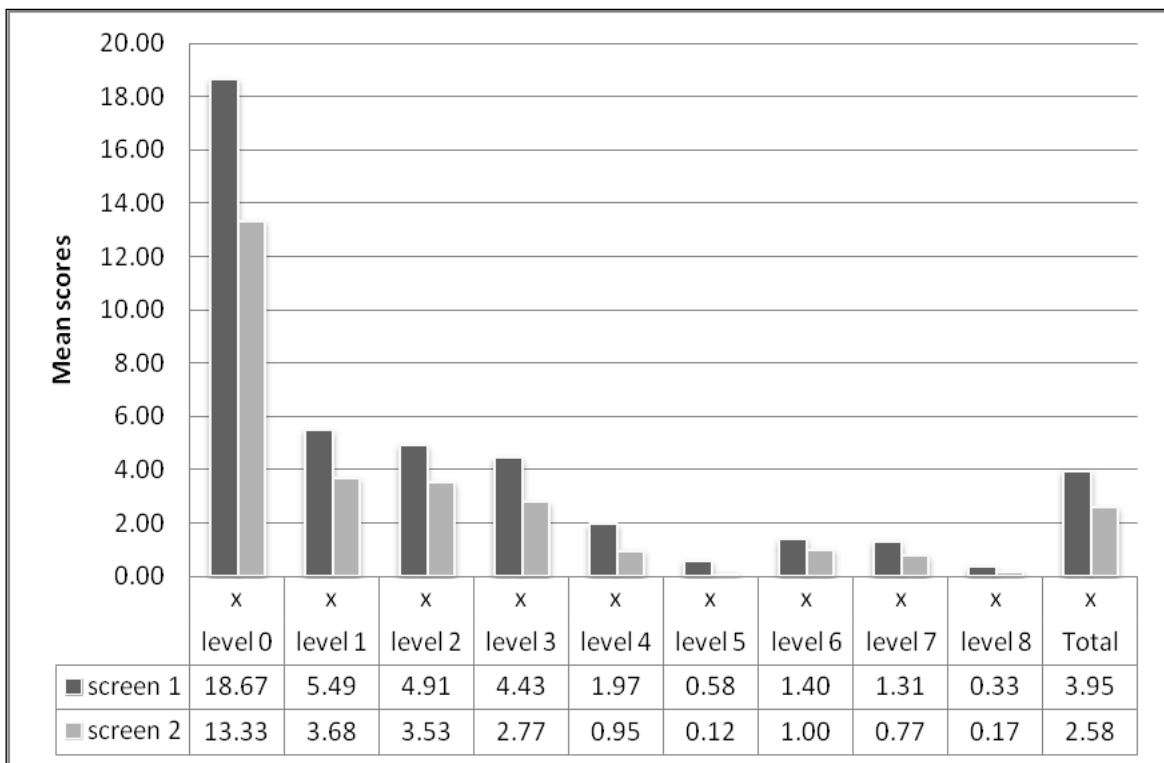
LAMP scale score Social Skills

Table 73 Results of 3 way analysis of variance (Sp/l and all schools – over time) for LAMP scale Social Skills

N = 389	level 0		level 1		level 2		level 3		level 4		level 5		level 6		level 7		level 8		Total	
Social Skills by speaking and listening levels																				
	X	sd	x	sd	x	sd	x	sd	x	sd	x	sd	x	sd	x	sd	x	sd	x	sd
S1	9.00	1.73	3.04	4.88	2.75	3.74	2.21	3.33	0.80	1.64	0.04	0.20	1.00	1.25	0.85	0.80	0.33	0.82	2.07	3.54
S2	0.00	0.00	1.99	4.15	2.21	3.74	1.34	2.11	0.50	1.58	0.00	0.00	0.70	1.34	0.54	0.97	0.00	0.00	1.37	2.96
Total	3		75		92		100		64		26		10		13		6		389	

Table 74 Results of within +between factor analysis of interactions (Sp/l and all schools – over time) for LAMP scale Social Skills

Within	ss	df	Ms	F	sig	Partial Eta squared (effect size)
Time	103.99	1.00	103.99	46.80	0.00	0.11
time * school	8.33	2.00	4.16	1.87	0.15	0.01
time * speaking and listening level	113.90	8.00	14.24	6.41	0.00	0.12
time * school * speaking and listening level	38.26	8.00	4.78	2.15	0.03	0.04
Between						
School	253.73	2.00	126.87	8.75	0.00	0.05
speaking and listening level	519.83	8.00	64.98	4.48	0.00	0.09
school * speaking and listening level	623.92	8.00	77.99	5.38	0.00	0.10

The Anova analysis shows significant main effects for time, and school and for speaking and listening levels (p<0.01), and time by speaking and listening levels (p<0.01). This means that there are overall lower scores at S2 than S1 and for speaking and listening levels and schools to have significantly different mean scores. There is also a significant main interaction between school and speaking and listening levels (p<0.01) indicating that although there had been decrease in mean scores these varied in schools and in speaking and listening levels. The graph in figure 30 illustrates these patterns.

Figure 30 Results of within +between factor analysis of interactions (Sp/l and all schools – over time) for LAMP scale Social Skills

	X level 0	X level 1	X level 2	X level 3	X level 4	X level 5	X level 6	X level 7	X level 8	X Total
screen 1	9.00	3.04	2.75	2.21	0.80	0.04	1.00	0.85	0.33	2.07
screen 2	0.00	1.99	2.21	1.34	0.50	0.00	0.70	0.54	0.00	1.37
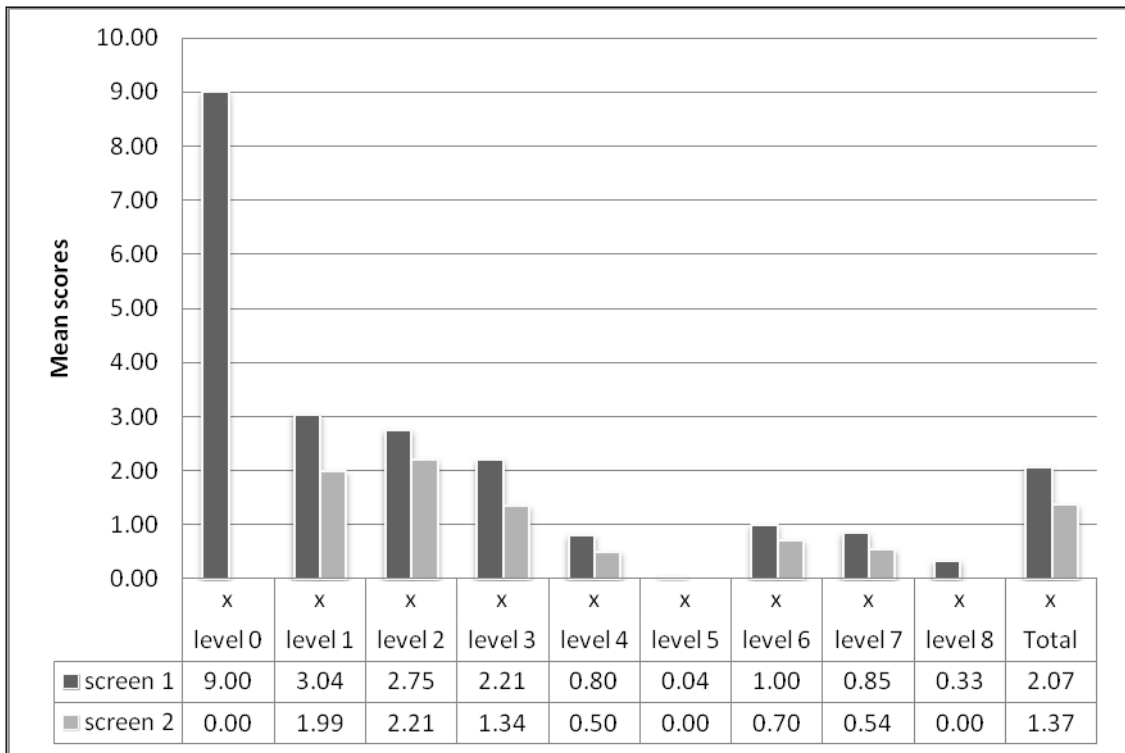
RQ 8: Analysis by English as an additional language (EAL).

An analysis was made of the date pertaining to children for whom English was an additional language.

Total Lamp Scale Scores

Analysis of made of levels of teacher concern for the total LAMP screen for children with EAL. See figure14 in chapter 5 Findings.

RQ 9: The relationships found between language scores on the LAMP screen and the school designation of high or low deprivation status?

This analysis concerned the relationship between teacher concern levels on the 4 areas of the LAMP screen and the socio-economic designation of the school as indicated by the Multiple Deprivation Index (MDI) as explained in Chapter 5 Findings. After the first inspection of the data in terms of changes in percentages the data was analysed in a series of repeated measures Manova using the statistical package - SPSS. For the following analysis the original raw data was used. The Mean, Standard Deviation (SD) and the levels of significance of the interactions within the data were calculated as shown on the tables below relating to RQs 9 to 14.

Table 75 Data Matrix shows the reduction in concern score from S1 to S2 screening for the high/low SES schools in relation to MDI (Multiple Deprivation Index), SEN levels, absence rates and expected progress in English.

School	Overall LAMP mean for *total scores* of concern S1 and 2				Range in individual teacher mean between classes within schools S2	Reduction LAMP mean S1 to S2 Overall LAMP mean for *Total scores* of concern	Free school meals %			Multiple deprivation index score Raise Nationally2010/ 0.24	Stability Raise online National 86%	SEN identification % National 2009 is 21%	Absence England 4.4%	% making expected progress in English
	Mean score S1	Sd S1	Mean score S2	Sd S2			Compared to fsm % The City 19.1%	Compared to fsm % The area 12.96%	Compared fsm % nationally 17.44%					
Cedar	38.62	Sd 27.83	25.63	SD 27.32	Mean 10 - 53.50	12.99 larger	7.89%/ Low	Low	Low	0.12	70.2	18.7% High	4.7%	No figs
Willow	34.92	Sd 29.9			Mean 10-41.8		31.62% High	High	High	0.37	76.1%	5.8% Low	5.8%	53%
Beech	23.35	Sd 25.96	19.71	25.02	Mean 3 - 60.73	3.64 smaller	34.00% High	High	High	0.37	74%	18.2% High	6.2%	71%
Oak	11.65	Sd 16.41	6.92	SD 11.36	Mean 0.17 - 20.57	4.73 smaller	3.68% low	Low	low	0.11	92.3	1.6% Low	3.4%	71%

275

Table 75 above shows the reduction in concern score from S1 to S2 screening for the high/low SES schools in relation to MDI (Multiple Deprivation Index), SEN levels and absence rates among pupils. The data for S2 screening was available from 4 schools S1 but 3 schools only for S2.

Beech had a high MDI and similar percentage of FSM to Willow, and 0.4% more absences but 7% of the children in Beech made expected progress in English which is comparable with Oak which also had 71% of children in this category compared with Willow's figure of 53%.

Beech was high in SEN identification and comparable with Cedar at >18%, Willow's was unexpectedly low at 5.8% Oak was in a similar locality to Cedar and had a comparable MDI but had 1.6% SEN identification compared with Cedar's less than 18%.

The most evident difference between the indices for Cedar, Oak, Beech and Willow is the stability figure. At 70.2% the stability percentage of Cedar is the lowest of the 4 schools and is >20% lower than Oak despite being within the same locality.

Statistical analysis of the LAMP total means between S1 and S2

The levels of significance of the interactions for all factors calculated for the areas of comparison for each RQ are shown on the table below. If level of significance is not entered as $(p<0.05)$ it should be read as being at the $(p<0.01)$ level.

Table 76 Summary analysis of all anovas for all factors in the study

	Exp	Rec	Behaviour	Soc skills
Time	sig	sig	sig	Sig
School	sig	sig	sig	Sig
time x school	sig	sig	sig	Sig
Gender	sig	sig	sig	Sig
time x gender	not sig	not sig	not sig	not sig
time x gender x school	not sig	sig (0.05)	not sig	sig (0.05)
school x gender	sig	sig (0.05)	sig (0.05)	sig (0.05)
year group	sig	sig	sig	Sig
time x year group	sig	sig	sig	Sig
time x school x year group	sig	sig	sig	Sig
school x year group	sig	sig	sig	sig (0.05)
sen code	sig (0.05)	sig	sig	Sig
time x sen code	sig (0.05)	sig	sig (0.05)	not sig
time x school x sen code	not sig	not sig	not sig	Sig
school x sen code	sig	not sig	sig (0.05)	not sig
free school meals (fsm)	not sig	not sig	not sig	not sig
time x fsm	not sig	not sig	not sig	not sig
time x school x fsm	not sig	not sig	not sig	not sig
school x fsm	not sig	not sig	not sig	not sig
speaking and listening levels (sll)	sig	sig	sig	Sig
time x sll	not sig	not sig	sig (0.05)	Sig
time x school x sll	sig	sig	sig	sig (0.05)
school x sll	sig	sig	sig	Sig
recorded slcn on the sen register (slcn/sen)	sig	sig	sig	Sig
time x slcn/sen	not sig	not sig	not sig	not sig
time x school x slcn/sen	sig	sig	sig (0.05)	Sig
school x slcn/sen	sig	sig	sig	Sig

Total LAMP screen

Table 77 results of analyses of within + between factors and interactions (school over time) for LAMP <u>total</u>

Within	ss	df	Ms	F	sig	Partial Eta squared (effect size)
time	8323.10	1.00	8323.10	88.40	0.00	0.18
time x school	2326.59	2.00	1163.30	12.35	0.00	0.06
Between						
school	66374.84	2.00	33187.42	45.24	0.00	0.18

The Anova analysis shows significant main effects for time and school, and time by school. This means that there are overall lower scores at S2 than S1 and for schools to have significantly different mean scores. There is also an interaction effect between time and school significant (p<0.01) showing that though scores decrease from S1 to S2, the decrease is much larger for Cedar than the other schools.

The analysis of the 4 LAMP scales

<u>Lamp Scale Expressive</u>

Table 78 Results of 2 way analysis of variance (school by time): LAMP scale Expressive

	Cedar		Oak		Beech		Total	
N=409	ẋ	Sd	ẋ	Sd	ẋ	Sd	ẋ	Sd
S1	12.53	8.92	4.34	6.19	7.64	9.27	6.68	8.19
S2	7.78	8.64	2.80	4.87	8.00	10.75	5.01	7.86
Total per school	10.15		3.57		7.82			
Overall Total							5.84	

(Anova: <u>Time:</u> F=35.62,df=1.00, p=0.08. sig, p<0.01. <u>Time x school</u>: F=15.76, df=2.00, p=0.07. sig, p<0.01. <u>School between</u>: F=31.50, df=2.00, p=0.13.sig, p<0.01).

278

Figure 31 Graph of results of 2 way analysis of variance (school by time) LAMP scale Expressive
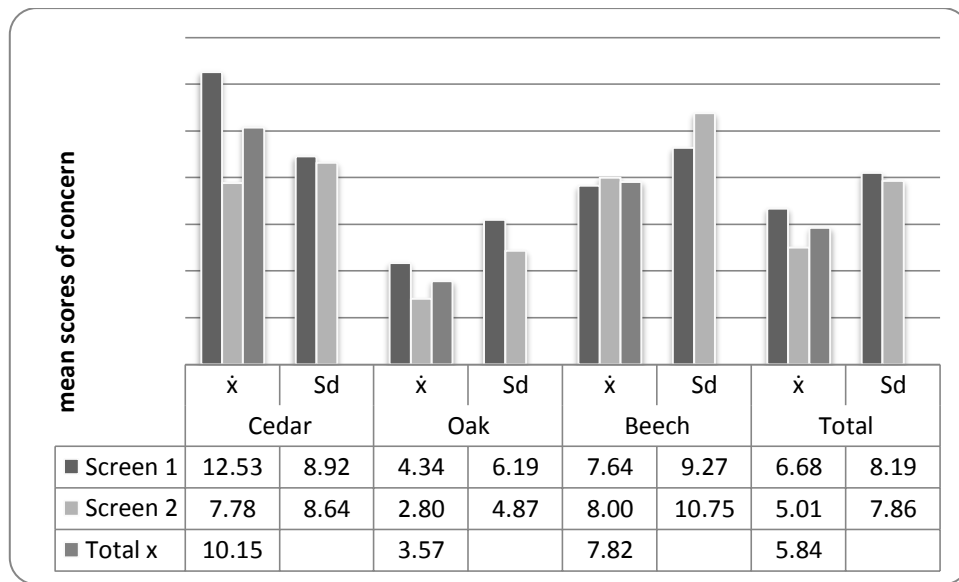
	Cedar		Oak		Beech		Total	
	ẋ	Sd	ẋ	Sd	ẋ	Sd	ẋ	Sd
■ Screen 1	12.53	8.92	4.34	6.19	7.64	9.27	6.68	8.19
■ Screen 2	7.78	8.64	2.80	4.87	8.00	10.75	5.01	7.86
■ Total x	10.15		3.57		7.82		5.84	

Again the Anova analysis shows significant main effects for time and school, and time by school. This means that there are overall lower scores at S2 than S1 for Expressive and for schools to have higher and lower scores. There is also an interaction effect between time and school significant (p<0.01) showing that though scores decrease from S1 to S2, the decrease is much larger for Cedar than the other schools.

LAMP scale Receptive

Table 79 Results of 2 way analysis of variance (school by time) Receptive LAMP scale.

	Cedar		Oak		Beech		Total		Total N=409
	ẋ	Sd	ẋ	Sd	ẋ	Sd	ẋ	Sd	
S1	12.30	8.88	3.50	5.50	7.52	8.55	6.13	7.81	
S2	8.49	9.57	1.81	3.59	6.37	9.07	4.17	7.22	
Total per school	10.39		2.65		6.95				
Overall Total							5.15		

(Anova: <u>Time:</u> F=60.08, df=1.00, p=0.13.sig, p<0.01, <u>Time x school:</u> F=6.34, df=2.00, p=0.03.sig, p<0.01. <u>School between:</u> F=47.81, df=2.00, p=0.19.sig, p<0.01).

Figure 32 Graph of results of 2 way analysis of variance (school by time) LAMP scale Receptive.
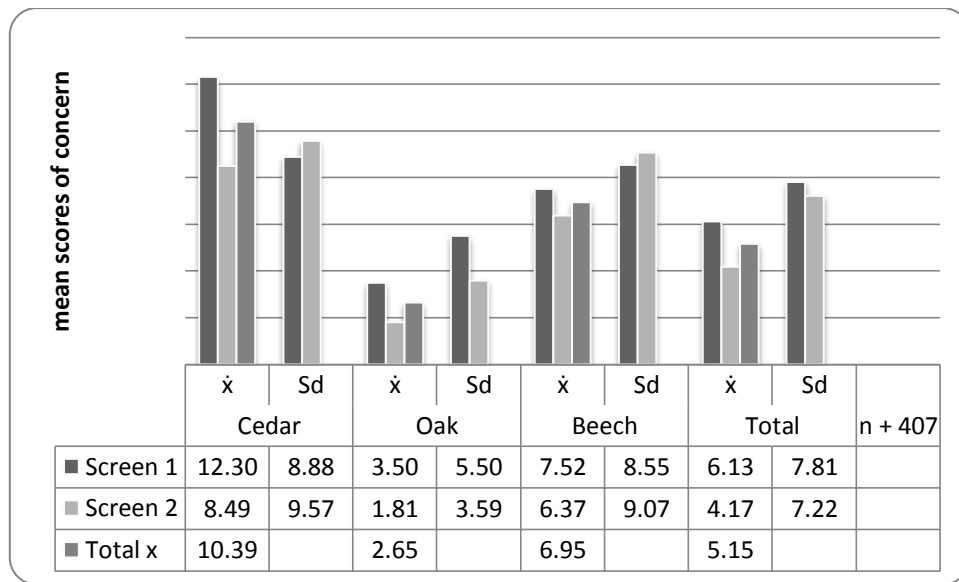
	Cedar ẋ	Cedar Sd	Oak ẋ	Oak Sd	Beech ẋ	Beech Sd	Total ẋ	Total Sd	n + 407
■ Screen 1	12.30	8.88	3.50	5.50	7.52	8.55	6.13	7.81	
■ Screen 2	8.49	9.57	1.81	3.59	6.37	9.07	4.17	7.22	
■ Total x	10.39		2.65		6.95		5.15		

For the Receptive scale the Anova analysis shows significant main effects for time and school, and time by school. This means that there are overall lower scores at S2 than S1 and for schools to have significantly different mean scores. There is also an interaction effect between time and school significant (p<0.01) showing that though scores decrease from S1 to S2, the decrease is much larger again for Cedar than the other 2 schools

LAMP scale Behaviour

Table 80 Results of 2 way analysis of variance (school by time) LAMP scale Behaviour.

	Cedar		Oak		Beech		Total N=409	
Behaviour	ẋ	Sd	ẋ	Sd	ẋ	Sd	ẋ	Sd
S1	8.62	7.12	2.70	4.06	5.16	6.29	4.40	5.78
S2	5.61	6.30	1.61	2.74	3.70	5.69	2.87	4.68
Total per school	7.11		2.15		4.43			
Overall Total							3.63	

(Anova: <u>Time:</u> F=323.93, df=1.00, p=0.44.sig, p<0.01, <u>Time x school:</u> F=9.12, df=2.00, p=0.04. sig, p<0.01. <u>School between:</u> F= 35.38, df=2.00, p=0.15. sig, p<0.01).

	Cedar		Oak		Beech		Total	
	ẋ	Sd	ẋ	Sd	ẋ	Sd	ẋ	Sd
■ Screen 1	8.62	7.12	2.70	4.06	5.16	6.29	4.40	5.78
■ Screen 2	5.61	6.30	1.61	2.74	3.70	5.69	2.87	4.68
■ Total x	7.11		2.15		4.43		3.63	
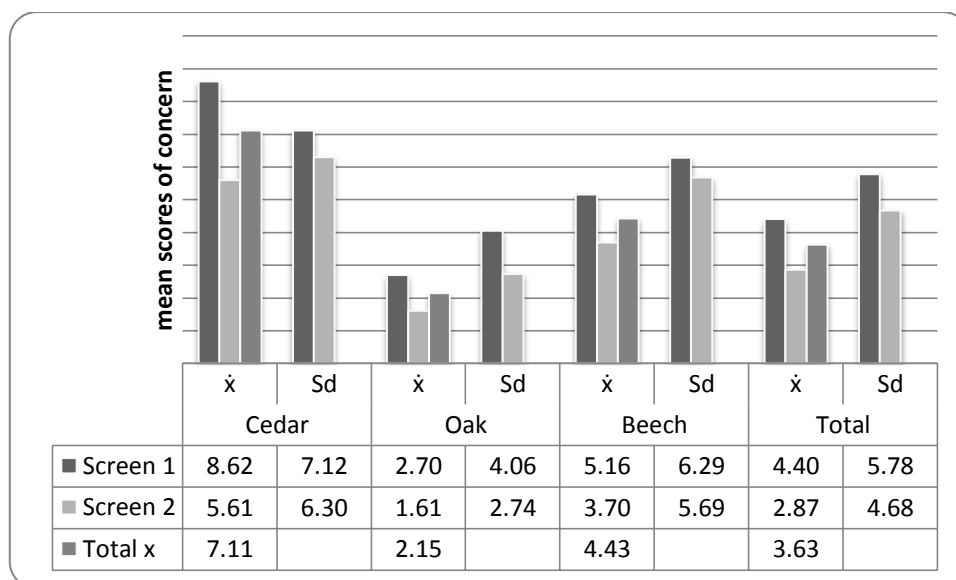
The Anova analysis shows significant effects for time and school, and time by school. Again there are overall lower scores at S2 than S1 and schools have significantly different mean scores. There is also an interaction effect between time and school significant ($p<0.01$) showing that though scores decrease from S1 to S2, the decrease is larger for Cedar than the other schools. The graph below shows this pattern of scores.

<u>LAMP scale Social Skills</u>

Table 81 Results of 2 way analysis of variance (school by time); LAMP scale Social Skills

	Cedar		Oak		Beech		Total 409	
	ẋ	Sd	ẋ	Sd	ẋ	Sd	ẋ	Sd
S1	5.17	5.12	1.10	2.15	3.07	4.29	2.34	3.80
S2	3.76	4.86	0.71	1.55	1.68	3.55	1.52	3.18
Total per school	4.47		0.91		2.38			
Overall Total							1.93	

(Anova: <u>Time:</u> F=61.69, df=1.00, p=0.13. sig, p<0.01 <u>Time x school</u>: F=8.31,df=2.00, p=0.04. sig, p<0.01. <u>School between:</u> F=42.22, df=2.00, p=0.17.sig, p<0.01).

281

Figure 34 Results of 2 way analysis of variance (school by time); LAMP scale Social Skills)
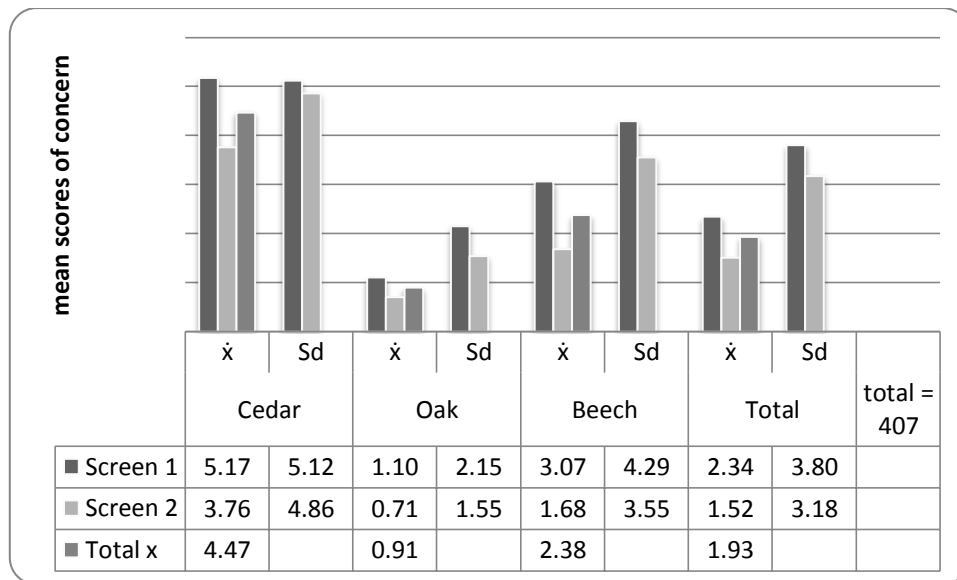
	x̄	Sd	x̄	Sd	x̄	Sd	x̄	Sd	
	Cedar		Oak		Beech		Total		total = 407
■ Screen 1	5.17	5.12	1.10	2.15	3.07	4.29	2.34	3.80	
■ Screen 2	3.76	4.86	0.71	1.55	1.68	3.55	1.52	3.18	
■ Total x	4.47		0.91		2.38		1.93		

The Anova analysis shows significant effects for time and school, and time by school. This means that there are overall lower scores at S2, and for schools to have significantly different mean scores. There is also an interaction effect between time and school significant (p<0.01) showing that though scores decrease from S1 to S2, the decrease again is larger for Cedar than the other schools.

282

RQ 10: What is the incidence of language difficulties based on analysis by children with/without free school meal entitlement (FSM)?

<u>Total Lamp Scales</u>

Results of analysis of LAMP scales Expressive, Receptive, Behaviour and Social Skills for FSM showed decreases in concern scores between S1 and S2.

Table 82 showing the percentage of children with FSM in the 4 schools

Overall average n= 611	Free school meals				
	21.60%				
by school number	Cedar	Oak	Beech	Willow	Total
% of total	7.89%	3.68%	34.00%	31.62%	21.60%
Yes	6	6	34	86	132
No	70	157	66	186	479
Total	76	163	100	272	611

Table 83 Results of within + between factor analysis of interactions and all schools – over time) for LAMP Total of 4 scales ERBS

Within	ss	df	Ms	F	sig	Partial Eta squared (effect size)
time	3253.04	1.00	3253.04	30.33	0.00	0.08
time * school	1506.72	2.00	753.36	7.02	0.00	0.04
time * free school meals	163.94	1.00	163.94	1.53	0.22	0.00
time * school * free school meals	99.46	2.00	49.73	0.46	0.63	0.00
Between						
school	6405.14	2.00	3202.57	4.11	0.02	0.02
free school meals	1811.22	1.00	1811.22	2.32	0.13	0.01
school * free school meals	1670.97	2.00	835.49	1.07	0.34	0.01

Analysis shows a significant effect for time at (p<0.01) and school at (p<0.05) and a 2 way effect for time by school at (p<0.01). Schools varied in the decrease in scores for children with/without fsm from S1 to S2.

<u>LAMP Scale Expressive</u>

Table 84 Results of 2 way analysis of variance (FSM and all schools – over time) Expressive LAMP scale score

Expressive by free school meals	Yes		No		Total	
	Mean	Std. Deviation	Mean	Std. Deviation	Mean	Std. Deviation
Scr 1	10.78	9.86	6.52	7.96	7.10	8.36
Scr 2	9.33	10.54	4.82	7.72	5.43	8.29
Total children	46.00		293.00		339.00	

Table 85 Results of within +between factor analysis of interactions variance (FSM and all schools – over time) Expressive LAMP scale score

Within	ss	df	Ms	F	Sig	Partial Eta squared (effect size)
time	276.26	1.00	276.26	13.45	0.00	0.04
time * school	383.73	2.00	191.87	9.34	0.00	0.05
time * free school meals	28.29	1.00	28.29	1.38	0.24	0.00
time * school * free school meals	15.66	2.00	7.83	0.38	0.68	0.00
Between						
school	526.00	2.00	263.00	2.63	0.07	0.02
free school meals	301.78	1.00	301.78	3.02	0.08	0.01
school * free school meals	215.41	2.00	107.70	1.08	0.34	0.01

In Expressive scale although there are differences in the mean and mean reductions within and between the 3 schools, these do not reach a level of statistical significance in relation to FSM.

284

Figure 35 Graph of results of factor analysis of interactions (FSM and all schools – over time) Expressive LAMP scale score

	Mean	Std. Deviation	Mean	Std. Deviation	Mean	Std. Deviation
	Yes		No		total	
■ Scr 1	10.78	9.86	6.52	7.96	7.10	8.36
■ Scr 2	9.33	10.54	4.82	7.72	5.43	8.29
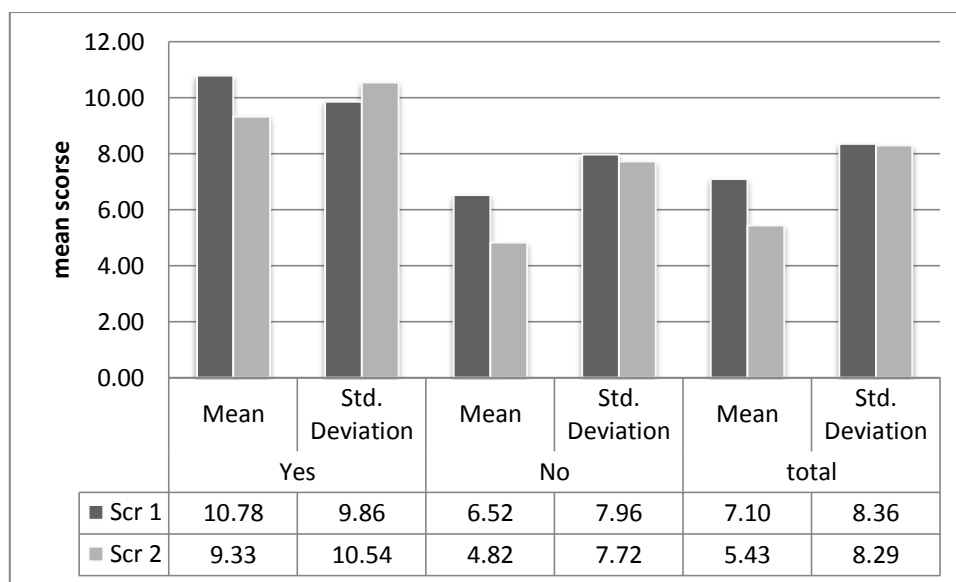
LAMP scale score Receptive

Table 86 results of 3 way analysis of variance (FSM and all schools – over time) Receptive LAMP scale score

Receptive by Free School Meals	Yes		No		Total	
	Mean	Std. Deviation	Mean	Std. Deviation	Mean	Std. Deviation
Scr 1	10.17	9.37	5.96	7.70	6.53	8.06
Scr 2	7.83	9.07	4.03	7.30	4.55	7.66
Total children	46		293		339	

Table 87 results of within +between factor analysis of interactions (FSM and all schools – over time) Receptive LAMP scale score

Within	ss	df	Ms	F	sig	Partial Eta squared (effect size)
time	449.26	1.00	449.26	29.89	0.00	0.08
time * school	263.42	2.00	131.71	8.76	0.00	0.05
time * free school meals	60.06	1.00	60.06	4.00	0.05	0.01
time * school * free school meals	88.72	2.00	44.36	2.95	0.05	0.02
Between						
school	789.98	2.00	394.99	4.56	0.01	0.03
free school meals	249.38	1.00	249.38	2.88	0.09	0.01
school * free school meals	189.94	2.00	94.97	1.10	0.34	0.01

Again in Receptive scale although there are differences in the mean and mean reductions within and between the 3 schools these do not reach a level of statistical significance in relation to FSM.

Figure 36 Graph of results of factor analysis of interactions (FSM and all schools – over time) Receptive LAMP scale score

	Yes		No		total	
	Mean	Std. Deviation	Mean	Std. Deviation	Mean	Std. Deviation
Scr 1	10.17	9.37	5.96	7.70	6.53	8.06
Scr 2	7.83	9.07	4.03	7.30	4.55	7.66
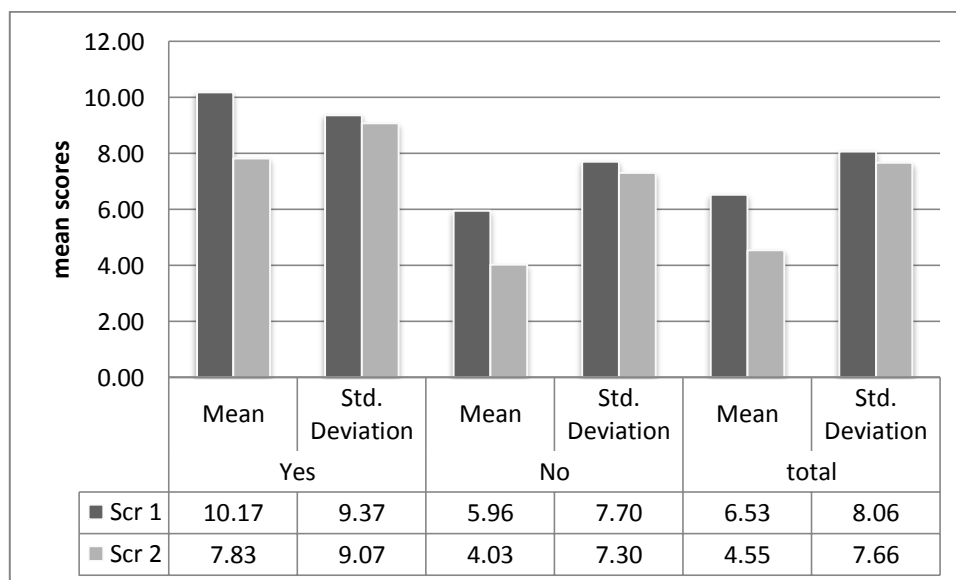
LAMP scale Behaviour

Table 88 results of 3 way analysis of variance (FSM and all schools – over time)
Behaviour LAMP scale score

Behaviour by Free School Meals	Yes		No		Total	
	Mean	Std. Deviation	Mean	Std. Deviation	Mean	Std. Deviation
Scr 1	6.26	5.96	4.35	5.98	4.61	6.00
Scr 2	4.28	5.56	2.75	4.66	2.96	4.81
Total children	46		293		339	

287

Within	ss	df	Ms	F	Sig	Partial Eta squared (effect size)
time	190.53	1.00	190.53	28.34	0.00	0.08
time * school	34.46	2.00	17.23	2.56	0.08	0.02
time * free school meals	2.96	1.00	2.96	0.44	0.51	0.00
time * school * free school meals	0.69	2.00	0.35	0.05	0.95	0.00
Between						
school	284.52	2.00	142.26	3.23	0.04	0.02
free school meals	57.39	1.00	57.39	1.30	0.25	0.00
school * Free School Meals	83.25	2.00	41.63	0.95	0.39	0.01

Again in Behaviour scale although there are differences in the mean and mean reductions within and between the 3 schools these do not reach a level of statistical significance in relation to FSM.

Figure 37 Graph of results of factor analysis of interactions (FSM and all schools – over time) Behaviour LAMP scale score

	Yes		No		total	
	Mean	Std. Deviation	Mean	Std. Deviation	Mean	Std. Deviation
Scr 1	6.26	5.96	4.35	5.98	4.61	6.00
Scr 2	4.28	5.56	2.75	4.66	2.96	4.81
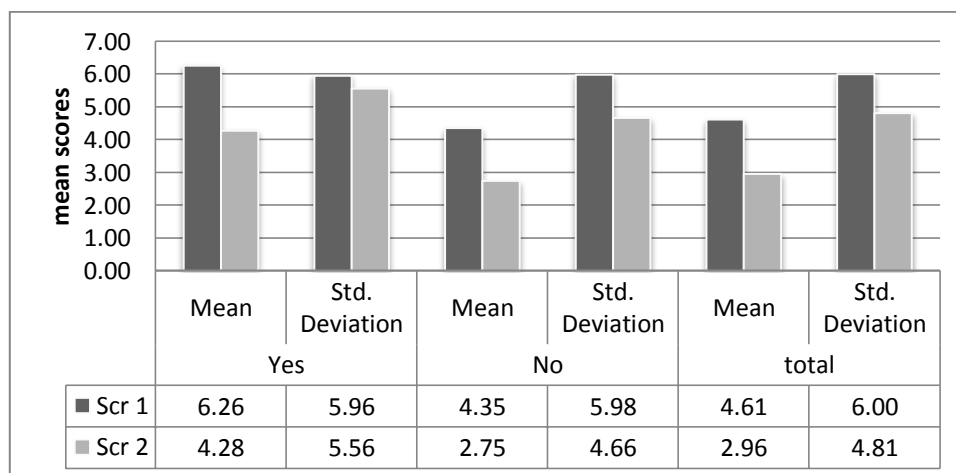
LAMP scale Social Skills

Table 90 Results of 3 way analysis of variance (FSM and all schools – over time) Social Skills LAMP scale score

Social Skills by Free School Meals	Yes		No		Total	
	Mean	Std. Deviation	Mean	Std. Deviation	Mean	Std. Deviation
Screen 1	3.09	3.71	2.43	4.00	2.52	3.96
Screen 2	2.26	3.96	1.54	3.31	1.64	3.41
Total children	46.00		293.00		339.00	

Table 91 Results of within +between factor analysis of interactions (FSM and all schools – over time) Social Skills LAMP scale score

Within	ss	df	Ms	F	sig	Partial Eta squared (effect size)
time	29.53	1.00	29.53	9.30	0.00	0.03
time * school	5.90	2.00	2.95	0.93	0.40	0.01
time * free school meals	4.03	1.00	4.03	1.27	0.26	0.00
time * school * free school meals	16.73	2.00	8.36	2.64	0.07	0.02
Between						
school	186.71	2.00	93.35	4.65	0.01	0.03
free school meals	2.86	1.00	2.86	0.14	0.71	0.00
school * free school meals	20.52	2.00	10.26	0.51	0.60	0.00

Again in Social Skills although there are differences in the mean and mean reductions within and between the 3 schools these do not reach a level of statistical significance in relation to FSM.

RQ 11: What were the experiences and perceptions of teachers regarding the practicality of using the LAMP screen?

Analysis of Teacher Responses to the skills questionnaires 1 and 2 (current and retrospective)

Table 92 Teacher mean self-ratings January, July and retrospective in July

Question	N 18	Jan	Retro	July
1	I am aware of the different aspects of SLCN children may experience	5.24	4.71	6.50
2	I am confident in assessing the language and communication levels of all the children in my class.	4.10	4.36	6.06
3	I am able to make adjustments to remove potential barriers to the children's' language development.	4.72	4.79	6.50
4	I am confident about planning activities for individual children to support language and communication skill development.	4.41	5.00	6.06
5	I am confident in planning group sessions to support language and communication development.	4.28	4.93	6.06
6	I am satisfied with the current level of resources for individual language work.	3.69	4.29	5.25
7	I am satisfied with the current level of resources for group language work.	3.76	4.21	5.25
8	I am confident that the pace of language I model in the class supports children's language development.	5.24	5.00	6.44
9	I feel that using the screen will develop my awareness in identifying SLCN	6.77	4.50	5.50
10	I am confident in communicating to parents the key role they play in supporting their children's' language and communication.	4.79	5.00	5.94

Figure 38 Average of Teacher responses to the questionnaire on confidence/<u>satisfaction</u> levels pre and post screening and intervention
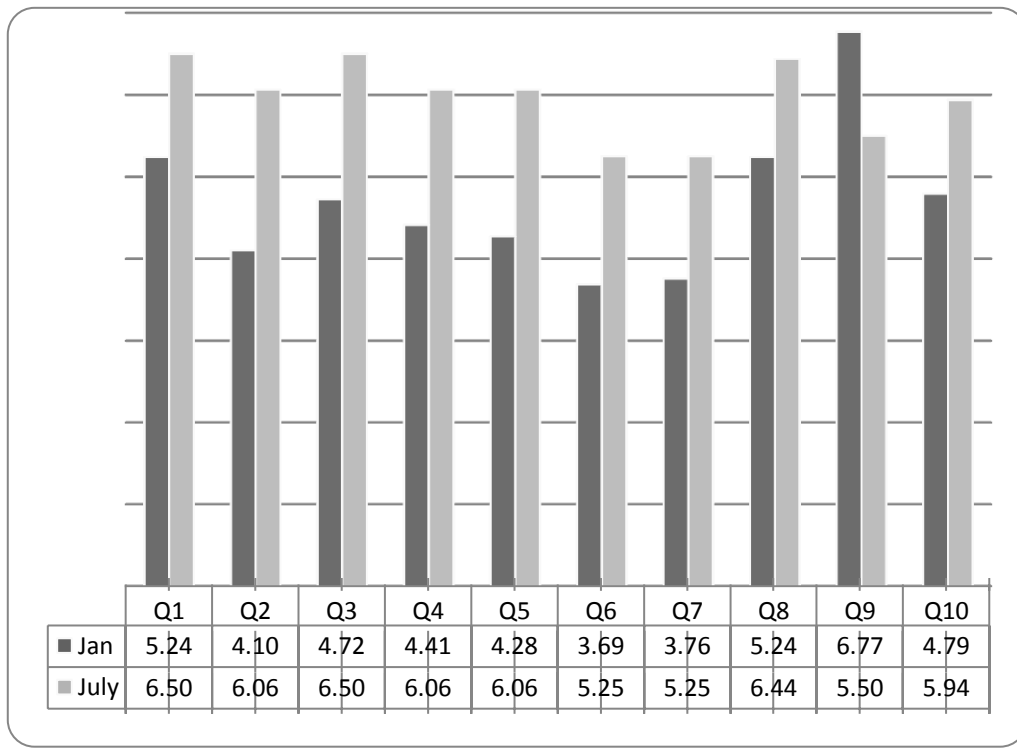
	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
■ Jan	5.24	4.10	4.72	4.41	4.28	3.69	3.76	5.24	6.77	4.79
■ July	6.50	6.06	6.50	6.06	6.06	5.25	5.25	6.44	5.50	5.94

RQ 12: How did the teachers evaluate the screen and its impact on their awareness, skills and confidence in the identification and support of pupils with speech and language difficulties?

Figure 39 shows that the mean response for questions 1 to 8 and question 10 indicate increased teacher's self ratings related to awareness, skills and confidence. Question 9 shows a decline.

Figure 39 Average of Teacher responses to the questionnaire on confidence/satisfaction levels pre-screening and retrospective view of levels taken at end of project
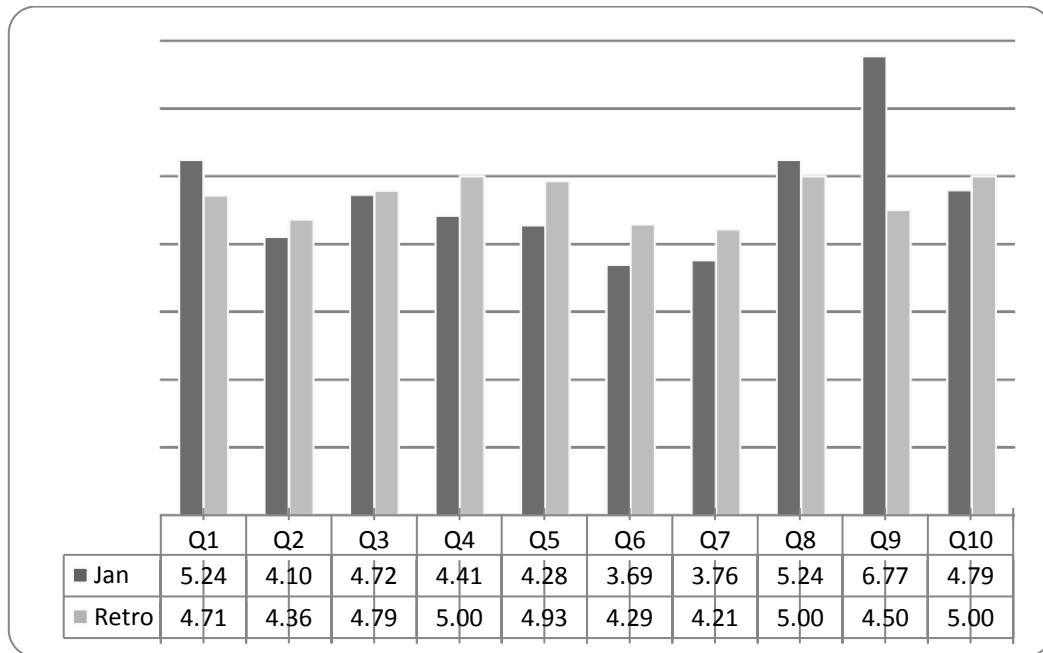
	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
■ Jan	5.24	4.10	4.72	4.41	4.28	3.69	3.76	5.24	6.77	4.79
■ Retro	4.71	4.36	4.79	5.00	4.93	4.29	4.21	5.00	4.50	5.00

RQ 13: To what extent did the teachers report any changes in their practice as a result of using the LAMP screen?

Questions 2, 3 and 5 were related to practice and all three questions showed a positive increase indicating self-perceived changes in teachers' practice. For questions 2, 3, 4, 5, 6, 7 and 10 the judgement was that the initial rating had been slightly too low. For questions 1, 8, and 9 it was thought retrospectively by teachers that their initial self-rating of confidence had been too high. This was markedly so with question 9.

The patterns discussed in the graphs above are brought together in the graph below.

Figure 40 Average of Teacher responses to the questionnaire on confidence/satisfaction levels pre-screening, alongside retrospective view and final view at the end of project

	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
■ Jan	5.24	4.10	4.72	4.41	4.28	3.69	3.76	5.24	6.77	4.79
■ Retro	4.71	4.36	4.79	5.00	4.93	4.29	4.21	5.00	4.50	5.00
■ July	6.50	6.06	6.50	6.06	6.06	5.25	5.25	6.44	5.50	5.94
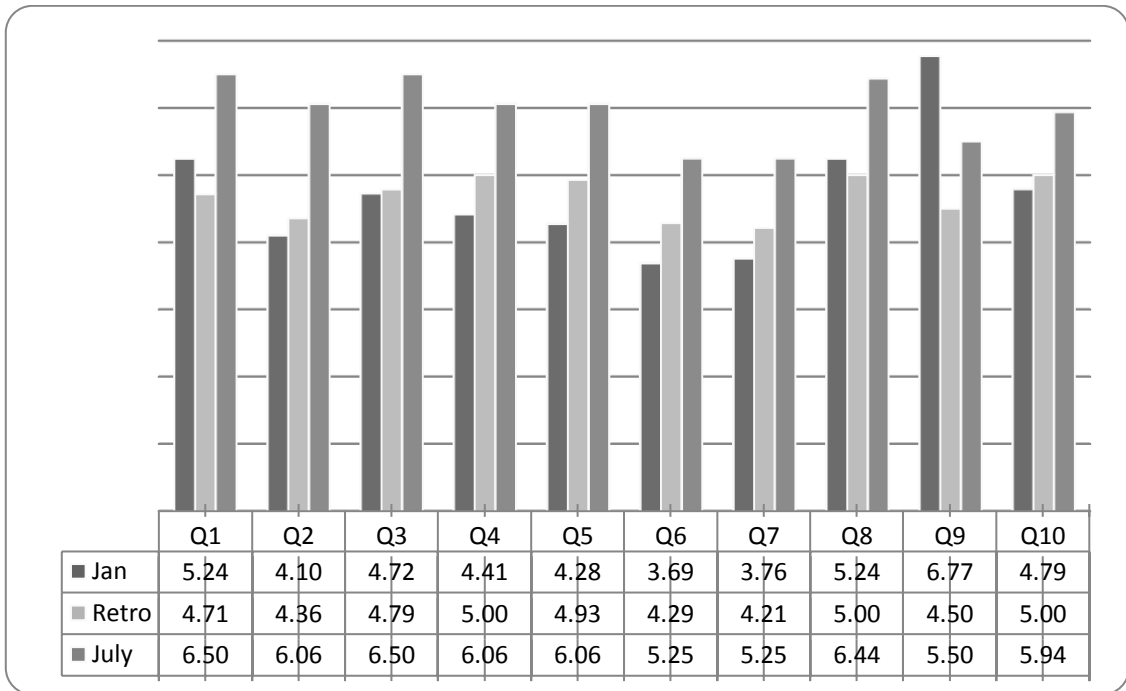
Focus group data to support RQ 12 and RQ 13

Table 93 Qualitative data matrix of themes from Focus group discussions with teachers and SMT in 3 schools

Broad theme	Sub-themes	2nd level themes	Illustrative excerpts (In Appendix 11)
1.Pre-study support	*considerable input with impact evidence excerpt from HT (but only 1 example)*		*a*
2.Barriers to identification	difficulty in deciding on nature of difficulties		
		variability in talking/language use	f
		is it a language or another issue?	a, b, c, g
	lack of specialist knowledge by some teachers		d
	need for more whole staff review/learning		e
3.Timing of the study	not ideal timing due to unforeseen demands		a
	staff changes mid-year changes		b
4.Mechanics to filling in the screen	straightforward		a, d, n
	needed thinking out		e, i
		different ways of completing the screen	b, c, j, k, l, m
		takes time to complete:	d, e, f, g
		2nd screen took less time	h
5.Talking about moderation	found input sufficient		a, b, c, d
	some need for more guidance on what the terms describing frequency means		h, i
	Need for investment of time for discussion on levels between teachers		e, f, g
		Found ways of checking	b, c, d, e
6.How did teachers make decisions on scoring?	relied on existing level of awareness		a, b, d, e, h, i
	increased reflection/checking on new LAMP information		c, f,
		stayed with the chosen method	g, j
	screen format affected the process of marking	+ electronic or paper format	j

7. Reasons given for changes in scores of concern for children	increased scores due to changes in teacher perception		a, g, i
		teacher expectations change:	b, d, e, m
		seeing the LAMP screen helps teachers to make more accurate judgements:	f, j, k
		teachers more aware of how language based difficulties look	h, k
	language based difficulties become more apparent over time:		c
8. Changes to teacher awareness of the nature of language needs	increased awareness reported by teachers		f, g, j
		raised awareness due to descriptions of language problems on the screen	a, h, i, k
		checking expectations in light of screen results	b, d, e, h
9. Changes to Teacher confidence in identifying language needs	Previous lack of teachers specialist knowledge:		a
		many areas to identify	b
	confidence in judgements increased		e, f, g, h
		reassured by the end results	c, i
	more confidence in recognising SLCN issues but not about resolving them:		n
10. Evidence of changes to teachers' practice	practice has changed:		a, b, f, l
		more involvement of outside agencies	g, h
	planning was enabled:		c, d
	more time needed to be able to tell if practice has changed		e
	increased reflection:.		g, h, j, k, l, m
		links between language and behaviour noted:	a
11. Evidence of whole-school motivation/ forward planning	LAMP encouraged increased collaboration and planning together as a staff		a, b, g
		capacity issues	c, f, g
		role of TAs considered	e, h
		LAMP quantified need	a
		programmes to be introduced	i
12. Home related factors	perception of parents regarding role of school:		a

	focused staff on language issues and increased understanding		a, c
13.Advantages of using the LAMP screen		focused staff on individual child's needs	c
		quantified language need	e
		informed IEPs	b
		found to be an effective tool	d
14.Continued use of the LAMP screen	Positive about future use		a
		staff valued it and have planned LAMP in for next year's entry	c
		yes but some modification to the process	c d
		yes but support packages needed	b

RQ 14: What level of internal reliability was established for the LAMP screen?

Internal consistency and reliability was assessed using Cronbach's Alpha. The results indicated that the questions on the LAMP screen clustered coherently and this being so we could be confident that they form a reliable scale.

Table 94 Cronbach's Alpha showing internal consistency levels for the 4 scales of the LAMP screen

Scale	N of items	Cronbach Alpha S1 (N = 676)	Cronbach Alpha S2 (N = 419)
Expressive	12	0.96	0.93
Receptive	12	0.95	0.95
Behaviour	10	0.92	0.88
Social Skills	7	0.92	0.96

Values are between 0.88 and 0.96 for the 4 LAMP scales Expressive, Receptive, Behaviour, and Social Skills indicating that ratings on the LAMP items cluster coherently and thus can be considered to provide satisfactory levels of internal consistency.

RQ 15: How reliable and consistent was the LAMP screening tool for use over a period of 5 months in this study?

15a. in terms of the relative position of pupils' functioning?

The LAMP screen was administered twice with a 2 week delay. The correlation coefficient of each of the 41 questions in the LAMP on the test re-test screen is tabled below on table 95.

Table 95 Correlation coefficient for each of the 41 questions in LAMP screen on test-retest

(RTC = Retest correlation)

Expressive Language Skills (outgoing)	RTC	Receptive	RTC	Behaviour related to slcn	RTC	Social Skills	RTC
A. Having ideas and deciding what to say	0.51	A. Looking at speakers	0.62	A. Attending to instructions	0.72	**A.** Maintaining appropriate eye contact - *too much, too little*	0.73
B. Choosing vocabulary words	0.68	B. Listening and attending to talk in class	0.92	B. Maintaining self-directed work or play	0.70	**B.** Initiating non verbal communication with others	.80
C. Remembering words you feel they should know	0.78	C. Retaining auditory information	0.82	C. Initiating verbal communication with others	0.60	**C.** Maintaining a conversation with others	0.84
D. Choosing appropriate sentence structure/grammar	0.87	D. Understanding individual works – *semantics*	0.76	D. Engaging in symbolic play or activity eg. role-play, drama, puppets, creative writing	0.66	**D.** Keeping to a joint topic of conversation	0.75
E. Selecting the sounds – *Phonological awareness*	0.74	E. Understanding literal meaning of sentence – *comprehension*	0.66	E. Taking part in situations where talking is involves e.g. limited use of language in co-operative play and group activities, passing on circle time	0.60	**E.** Understanding/remembering rules	0.88
F. Sequencing the sounds	0.89	F. Understanding implied meaning/humour of sentence	0.82	F. Concentrating in interactive talk based sessions e.g. fidgets, talks	0.75	**F.** Following rules	0.71

Expressive Language Skills (outgoing)	RTC	Receptive	RTC	Behaviour related to slcn	RTC	Social Skills	RTC
				inappropriately, hinders others			
G.Speaking fluently e.g. hesitation repetitions	0.62	G.Understanding age appropriate concepts explained verbally	0.73	G. Using language and uses physical communication instead when language would be more appropriate e.g. tapping adult's arm, pointing to direct the adult' gaze	0.42*	*G.* Showing care and concern (empathy)	0.76
H.Speaking appropriately keeping to topics – *Pragmatics*	0.62	H.Processing and responding to talk quickly	0.78	H. Developing relationships with adults	0.50		
I. Conveying meaning without use of gestures	.64	I. Following instructions without visual support e.g. *gesture, modelling the activity*	0.76	I. Developing relationships with peers	0.74		
J. Using language for different functions e.g. *ask, explain, reason, describe*	0.64	J. Responding to part of a spoken instruction e.g. *loses the beginning or end of it*	0.60	J. Speaking out and is shy and over spoken	0.71		
K.Using language for thinking/planning	0.72	K.Responding appropriately to question words e.g. *what, where,*	0.68				

Expressive Language Skills (outgoing)	RTC	Receptive	RTC	Behaviour related to slcn	RTC	Social Skills	RTC
		who when (why and how for older children)					
L. Self monitoring/being aware of mistakes	0.67	L. Answering "how do you know" questions from personal experience *saw, (and for older children; I hears, I was told*	0.65				
Expressive language skills (overall)	0.83	Receptive Language Skills (incoming) (overall)	0.91	Behaviour related to slcn (overall)	0.77	Social Skills (overall)	0.86
Correlation is significant for all the above at 0.01 level (2-tailed)							
RTC = Re-test correlation coefficient							

Despite some variation in scoring individual questions, over the sample of 36 children the overall correlation between the screenings 2 weeks apart is highly significant at the p<0.01 level (2-tailed).

Table 96 Spearman's rho correlation co-efficient; for the LAMP scales and the mean correlation co-efficient for the screen, LAMP scales

Spearman's rho test retest N=36	S2
Expressive correlation co-efficient	0.83
Receptive correlation co-efficient	0.91
Behavioural correlation co-efficient	0.77
Social Skills correlation co-efficient	0.86
Mean correlation co-efficient	0.84

Correlation between the ratings on screens S1 and S2 was significant at the p<0.01 level (2-tailed), (mean rs=0.84, P<0.01). Despite some variation in ratings for individual questions there was a strong, positive correlation for all 4 scales, Expressive, Receptive, Behaviour, and Social Skills between the first and the second trial. Correlation being found to be significant at the p<0.01 level (2-tailed), the LAMP screening tool was judged to be a sufficiently robust instrument in terms of test-retest reliability for the purposes of the current study.

15b. How reliable was the screening tool in terms of changes in functioning levels?

To ascertain the reliability of the LAMP screening tool over the 5 month period of the study the levels of concern as recorded by the teachers in each school were examined for comparability. It was apparent that between S1 and S2 there had been a change of some significance in teachers' recording of concerns. Table 97 below shows the comparison of 27 individual teacher mean ratings of scores of concern from S1 to S2 for their classes.

Table 97 Differences between all 27 teacher's individual mean scores S1 to S2 in the 4 schools.

School	Teacher code	N children	S1			S2			Diff S1 to S2
			Mean	sd	teacher difference from school total mean S1	Mean	Sd	teacher difference from school total mean S2	
Cedar	1	18	42.22	22.34	3.60	23.33	25.09	-2.30	-18.89
Cedar	2	8	49.38	26.85	10.76	20.00	28.50	-5.63	-29.38
Cedar	3	19	34.11	28.16	-4.51	16.16	20.40	-9.47	-17.95
Cedar	4	5	25.00	19.33	-13.62	10.00	11.77	-15.63	-15.00
Cedar	5	14	44.71	32.54	6.09	53.50	30.55	27.87	8.79
Cedar	6	12	31.75	32.28	-6.87	21.83	21.53	-3.80	-9.92
Oak	7	15	8.53	4.69	-3.12	4.47	3.83	-2.45	-4.06
Oak	8	18	5.39	8.44	-6.26	0.17	0.38	-6.75	-5.22
Oak	9	27	5.96	5.29	-5.69	4.15	4.61	-2.77	-1.81
Oak	10	22	3.32	5.88	-8.33	3.32	5.88	-3.60	0.00
Oak	11	20	9.45	14.29	-2.20	8.18	13.99	1.26	-1.27
Oak	12	24	17.77	19.07	6.12	9.18	15.13	2.26	-8.59
Oak	13	22	14.23	15.43	2.58	11.14	12.57	4.22	-3.09
Oak	14	14	37.29	15.08	25.64	20.57	11.29	13.65	-16.72
Oak	15	25	12.36	20.31	0.71	6.24	12.13	-0.68	-6.12
Oak	16	24	11.96	20.46	0.31	7.75	12.39	0.83	-4.21
Oak	17	21	10.14	17.70	-1.51	4.48	11.52	-2.44	-5.66
Beech	18	11	46.36	38.03	15.73	60.73	5.22	41.02	+14.37
Beech	19	12	14.54	11.13	-8.81	7.92	4.99	-11.79	-6.62
Beech	20	8	18.13	10.68	-5.22	3.00	3.59	-16.71	-15.13
Beech	21	10	13.90	9.95	-9.45	8.90	9.22	-10.81	-5.00
Beech	22	8	12.17	15.73	-11.18	14.50	20.42	-5.21	+2.33
Beech	23	13	29.07	25.57	5.72	19.07	21.61	-0.64	-10.00
Beech	24	7	16.71	25.18	-6.64	14.29	23.32	-5.42	-2.42
Beech	25	5	41.20	33.20	17.85	42.20	33.86	22.49	+1.00
Beech	26	11	23.73	29.76	0.38	18.00	24.74	-1.71	-5.73
Beech	27	16	19.44	27.84	-3.91	15.25	28.38	-4.46	-4.19
Overall teacher Totals	-	409	19.55	23.81		13.56	20.62		

There was an overall decrease in the teachers' total mean concern score ratings.There had been changes in the pattern of scoring by individual teachers at S2 screening in relation for all 4 scales on the LAMP screen. Of the 27 teachers in the 3 schools, 23 recorded a lower level of mean concern for their

class on the second screening. A teacher at Oak school recorded no change and after due consideration this data was noted but discounted in the analysis.

Figure 41 Graph showing the amount of decline in teacher's mean score of class level of difficulty over 3 schools from S1 to S2 in comparison with the mean of the 3 schools taken together.
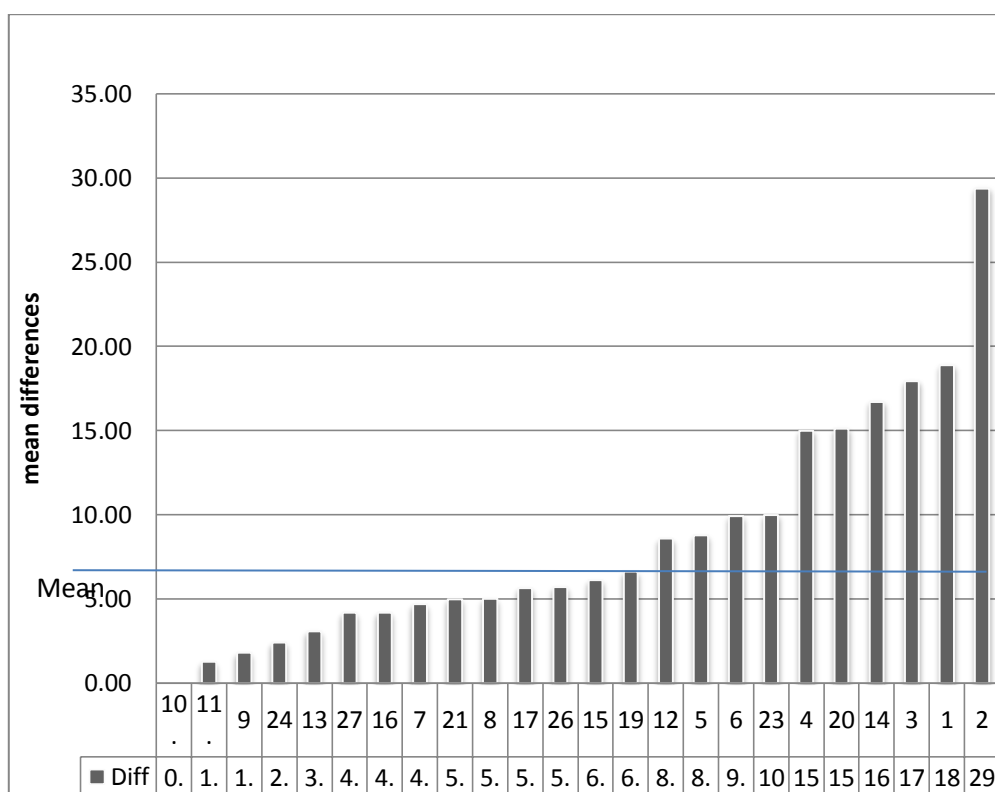
For Oak, 9 out of the 11 teacher's scores were well below the collective mean score, 1 was just above the collective mean, and 1 teacher, 14, was well above the collective mean. All of Cedar's scores were above the collective mean. Teacher 2, at Cedar, had the highest amount of difference in concern score at 29.38. For Beech out of 10 teachers 5 scores were well below the collective mean.

Inspection of the individual data for patterns of reduction

The scoring data of the teacher with the largest reduction in scores was chosen as an exemplar and was inspected to identify any anomalies. Table 98 below provides a sample of the marking of scores of concern on the teacher 2 in Cedar who had the largest reduction in scores of concern in S2 of 29-38 across all 4 LAMP scales.

Table 98 A sample of the marking of scores of concern on the Expressive scale for teacher with largest reduction in LAMP screen scores of concern (-29.38) across 4 LAMP scales

Expressive Scale Question	S1	S2	Diff S2 - S1
1	1	0	-1
2	1	0	-1
3	1	0	-1
4	1	0	-1
5	1	0	-1
6	1	0	-1
7	1	0	-1
8	1	0	-1
9	1	0	-1
10	1	1	0
11	1	1	0
12	1	1	0
Total score	12	3	-9

Nb. This decrease of 12 in the overall concern score was on 1 scale, Expressive.

This pattern suggested a pattern of reasoned professional judgement by the teacher based on observed child performance rather than being suggestive of large unexplained swings when the teacher was marking the screen.

An example of a Crosstabs analysis of changes in ratings S1 and S2 on the Receptive scale of the LAMP screen

An example from the Receptive scale crosstabs was chosen as an exemplar to again illustrate the shift in teacher ratings of concern from S1 to S2.

Table 99 Crosstabs showing changes to percentages of the number of times these frequencies, never, sometimes, frequently, constantly are found overall S1 to S2; LAMP Receptive scale.

			S2 Receptive				Total
			Never	Sometimes	Frequently	Constantly	
S1 Receptive	Never	Count	281	14	2	0	297
		% within S1 Receptive	94.6%	4.7%	0.7%	0.0%	100.0%
	Sometimes	Count	43	27	8	1	79
		% within S1 Receptive	54.4%	34.2%	10.1%	1.3%	100.0%
	Frequently	Count	5	12	7	1	25
		% within S1 Receptive	20.0%	48.0%	28.0%	4.0%	100.0%
	Constantly	Count	3	0	3	2	8
		% within S1 Receptive	37.5%	0.0%	37.5%	25.0%	100.0%
Total		Count	332	53	20	4	409
		% within S1 Receptive A	81.2%	13.0%	4.9%	1.0%	100.0%

This crosstabs analysis illustrates the kind of changes found in teacher rating levels of an individual LAMP scale from S1 to S2. This analysis of the Receptive scale shows that for 95% of the time *never* ratings at S1 remained as *never* at S2 but only 34% of *sometimes* ratings at screen1 remained as *sometimes* at S2.

54% of *sometimes* concern scores at S1 decreased to *nevers at S2*, while 11% of *sometimes* concern scores became more frequent with just over 1% moving into constantly. None of the *never* scores S1 moved to constantly ratings S2.

Only 28% of *frequently* ratings at S1 remained as *frequently* at S2; 68% of *frequently* ratings reduced to *sometimes* or *never* ratings at S2 and only 4% became *constant* concerns.

Only 25% of *constantly* ratings at S1 remained so at S2, all became *less frequent* at S2, with 37.5% moving into *sometimes* scores and 37.5% into *never* score.

The observed pattern of scoring shows how the *sometimes*, *frequently* and *constantly* ratings reduced from S1 to S2.

RQ 16: What would be the factor structure of the LAMP screening tool?

Although Cronbach Alphas showed internal reliability, it was important to also see the pattern of inter-relationship between all the statements on the LAMP screen. A factor analysis was made with varimax rotation of the data. For S1 4 schools showed 4 factors with Eigen values above 0.4 using SPSS.

Table 100 Showing how LAMP questions for scales load onto the 4 components in the Factor Analysis Varimax Rotation (statements loading >0.4 in bold)

Rotated Component Matrix[a]				
	Component			
	1	2	3	4
Expressive A	**0.75**	0.33	0.13	0.26
Expressive B	**0.79**	0.30	0.11	0.30
Expressive C	**0.75**	0.20	0.19	0.33
Expressive D	**0.80**	0.22	0.20	0.24
S1Expressive E	**0.79**	0.29	0.16	0.16
S1Expressive F	**0.75**	0.34	0.21	0.15
S1Expressive G	**0.66**	0.37	0.16	0.24
S1Expressive H	**0.54**	0.27	**0.58**	0.16
S1Expressive I	**0.57**	0.20	**0.40**	-0.15
S1Expressive J	**0.70**	0.34	0.33	0.24
S1Expressive K	**0.58**	0.17	0.23	0.24
S1Expressive L	**0.69**	0.20	**0.41**	0.25
S1Receptive A	0.20	**0.55**	**0.49**	0.13
S1Receptive B	0.34	0.24	**0.69**	0.24
S1Receptive C	**0.49**	0.13	**0.49**	**0.41**
S1Receptive D	**0.61**	0.13	0.34	**0.51**
S1Receptive E	**0.55**	**0.40**	0.27	**0.44**
S1Receptive F	**0.43**	0.38	0.26	**0.56**
S1Receptive G	**0.53**	0.26	0.32	**0.60**
S1Receptive H	0.39	0.34	0.39	**0.57**
S1Receptive I	**0.41**	0.37	0.33	**0.61**
S1Receptive J	**0.51**	0.22	**0.44**	**0.53**
S1Receptive K	**0.54**	0.31	0.38	**0.51**
S1Receptive L	0.24	0.22	0.19	**0.42**
S1SocialSkills A	0.18	**0.66**	**0.48**	0.25
S1SocialSkills B	0.21	**0.72**	0.26	0.29
S1SocialSkills C	0.32	**0.73**	0.30	0.27
S1SocialSkills D	0.39	**0.49**	**0.50**	0.28
S1SocialSkills E	0.25	0.28	**0.78**	0.17
S1SocialSkills F	0.09	0.14	**0.84**	0.16

Rotated Component Matrix[a]				
	Component			
	1	2	3	4
S1SocialSkill G	0.04	**0.42**	**0.65**	0.15
S1Behaviour A	0.27	0.19	**0.74**	0.38
S1Behaviour B	0.28	0.32	**0.65**	0.32
S1Behaviour C	0.32	**0.77**	0.23	0.24
S1Behaviour D	0.30	**0.73**	0.22	0.24
S1Behaviour E	0.38	**0.71**	0.26	0.18
S1Behaviour F	0.29	0.19	**0.67**	0.18
S1Behaviour G	**0.42**	**0.44**	**0.44**	0.11
S1Behaviour H	0.23	**0.71**	0.37	0.03
S1Behaviour I	0.22	**0.67**	**0.48**	0.05
S1Behaviour J	0.37	**0.66**	-0.11	0.14
Variance explained (%)	23.7	**18.3**	18.3	10.4

Figures in bold represent loadings on factors above 0.40

The first factor was associated with the largest amount of variance explained, 23.7%. This factor had all the expressive statements loading, but also about 2/3rds of receptive statements. This factor therefore represents a mixed expressive-receptive factor. The next 2 factors, which each explained about 18% of variance, mostly loaded the social skills and behaviour statements. In some cases the same statement loaded on both factors, in other statements they loaded on different statements. Both these factors represent aspects of language use that is related to social skills and behaviour. The 4th factor with the lowest degree of explained variance (10%) only loaded receptive statements. These receptive statements did not load any more highly on the first or the 4th factor. However, this 4th factor is the only one with a clearer interpretation as representing one area of the LAMP design.

In conclusion this overall pattern of loadings indicates that there are no clear factors that distinguish between the 4 kinds of LAMP items. However this pattern of loadings is consistent with interconnections between these aspects of speech and language functioning proposed in the Communication Chain (Elks and McLachlan 2000) upon which the LAMP screen was predicated.

307

RQ 17: How valid is the LAMP screen data in relation to an established parents' measure of speech and language functioning?

The levels of concern indicated for each child by teachers on the LAMP were compared with levels of parent/carer concern for that child on the GCC (General Communicative Competence level) of the Children's Communication Checklist (Bishop, 2003).

Pearson's Correlation (Pearson's coefficient) indicated a moderate to low correlation of -0.49 which was significant at the p<0.05 level (2-tailed). Table 28 below shows this moderate correlation between GCC and LAMP concern scores

Table 101 Correlation between LAMP total score and GCC

Correlations		GCC	
GCC	Pearson Correlation	1	-.49*
	Sig. (2-tailed)		.015
	N		24

Key: High LAMP shows high concern / Low GCC shows high concern

* r = - 0.49 p<.02, n = 24 Correlation is significant at the 0.05 level (2-tailed).

To find where the 2 measures converged or diverged I then took the Bishop (2003) GCC score at the 20th centile classified that as the cut off point for a low score. I took the 20th centile on the LAMP as the cut off point for a low score. High concern for LAMP produces a high score. High concern for GCC produces a low score.

Table 102 Showing where LAMP and GCC percentile scores are convergent or Esping-discrepant for individual children.

Number		GCC	GCC Centile	LAMP Centile S1	>46 =20%ile	LAMP total	Are they EAL	Is Hearing difficulty	Difficulty written literacy	SEN
14	TH	Invalid		51		16	N	N	N	U
27	JRD	Invalid		36		9	N	N	N	U
17	IB	114	95+	42		11	N	N	N	U
11	EL	111	95+	61		24	N	N	N	U
26	SL	106	95+	66		30	N	N	Y	U
25	AC	102	89	23		3	N	N	N	U
7	GG	100	86	32	sa	7	N	N	N	U
21	IB	96	79	13		0	N	N	N	U
12	JH	84	53	34		8	N	N	N	U
6	RG	76	42	98	*	96	N	N	Y	SA
5	SJ	73	36	30		6	N	N	N	
3	JM	72	33	42		11	N	N	N	U
24	AB	65	21	32		7	N	N	N	U
2	LB	64	20*	51		16	Y	N	N	U
4	RL	61	16*	80	*	46	Y	N	N	
18	YD	58	14*	60		23	N	N	N	U
16	DLG	57	13*	62		25		N	Y	U
1	MW	56	12*	51		16	N	N	Y	
13	LRF	52	9*	83	*	50	N	N	Y	U
19	JHH	49	7*	55		19	N	N	N	SA
20	MC	49	7*	6		0	N	N	N	U
15	EN	44	5*	60		23	N	N	Y	U
8	KR	19	1*	99	*	112	N	N	Y	STATE

This is the top 20% of scores cut off for high LAMP scores = top 20% with problems * to indicate the 3 children identified at 20% cut off.

* to indicate the 3 children identified at 20% cut off.

The scores were found to be matched in the case of 17 out of the 21 children whose profiles were compared.

Next the level of overall comparison was made in percentage terms.

Table 103 Identification of overall concern based on 20%ile cut off for GCC (low) and LAMP (top)

		LAMP		
		Concern	No concern	total
GCC	Concern	3	3	6
	No concern	1	14	15
	Total	4	17	21

17/21 or 81% of those identified or not identified by LAMP were also identified or not identified by GCC

¾ or 75% of those identified by LAMP also identified by GCC.

14/17 or 82% of those with no concerns by LAMP also had no concerns by GCC. Overall, this meant that teachers and parents were likely to be observing the same difficulties that presented in both environments thus increasing the likelihood that teacher's and/or parent's observations were valid. These findings supported the validity of the LAMP screening tool results.

Appendix 11 Presentation of Focus group themes.

1) Pre research study support in school (SLCN)

Over and above the literacy support in the schools this was highlighted by the Head of Beech:

a. *'We put a lot of interventions in and we do put a huge amount of interventions in and the CLLD project etc. has had a phenomenal impact on the children'* (BHead).

2) Barriers to the process of identification of SLCN: teacher skills, timing and capacity

A newly qualified teacher reported that he had found it difficult initially to decide on the exact nature of a child's difficulties. He was not sure what he was looking for –

a. '*Were children ignoring me? Was it a selective hearing difficulty, or was a child not engaging in a lesson by choice or did they actually have an issue'* (WNQT)?
b. '*It was difficult as not sure what I was looking for – children ignoring me/selected hearing/ difficulty in engaging in lesson/ choosing not to engage in lesson or do they actually have a language issue – had to double check if SLCN issue or not when they were engaged in lesson/teaching/class dynamics*' (WNQT).

Uncertainty was expressed by the Reception teacher as to whether a child was attention seeking as in the Reception class pupils were quite new so unknown to her.

c. *'Not sure of area (of difficulties) or whether attention-seeking child rather than SLCN'* (WExp).

This teacher used the strategy of double checking to see if speech, language and communication difficulties were an issue with previous teachers or whether they were not engaged in lesson/teaching/class dynamic by choice. An experienced SENCO expressed the view that some teachers felt that this was an area of skill that they were unsure of:

d. '*There is a lack of specialist knowledge in this area by some teachers'* (CSE).

Capacity was discussed as an issue:

e. '*I think our barriers were we needed to do more whole staff time. All primary framework is disappearing as you know and I think that isn't conducive to staff embracing new things because the work that had been done suddenly disappears and is no longer being valued and no longer being worked on so they're saying we've done all this work and now it's just going so what was the point in it. That is always going to be a tricky thing and I think everything has almost been tarnished by those changes, which is a bit difficult. Need for joined up thinking in school- Yes and why that developmental section was important for future developments, how they linked together. I think they (staff)do know it it's just seeing it within that context and the sort of speaking and listening and in particular the LAMP screening it's making those connections and I think that's what where we didn't give quite enough time to that from our point of view, we would have been better to have looked a little more at making those connections – I think they saw it as an important area but we didn't do enough joined up thinking and sharing each other's ideas, so that's something for me to take on board'* (BHead).

f. '*Variability of some children in mood and performance'* (BHead).

g. '*How much of it is linked to how the parents see us? I also know I have a number of pupils who are told not to say anything when they're at school. They're not quite sure where to draw the line at that. It's a bit of an isolated issue and you know there aren't many of them again but you know there are some like that and are afraid to say too much in case it causes problems at home'* (BHead).

3) Timing of the study

'*Maybe it wasn't an ideal timing for us –but then you never know '*(BHead).

'*When we took the project on we didn't know we were going to have a year like that because as far as we were concerned N would stay SENCO until the end of the year' (BHead).*

4) Mechanics to filling in the screen

a. '*No problems'* (WSE).

b. '*In the first screen some teachers asked to use paper copy first but by second screen most used Excel'* (WSE).

c. *'Made quick snap judgement – compared children to each other –went through one question and assessed each child'* (WNQT).

The NQT and the Foundation teacher described the process as

d. '*Straight forward*' (WNQT).
e. *'Disadvantage – time taken to complete - seemed massive task initially'* (WNQT).
f. *'S1 took 1 ½ - 2 hours (had to get head around question, think what you've seen)'* (WNQT).
g. *'S1 took 4 hours* (WExp).
h. *'Second screen took about an hour'* (WExp).
i. *'If forgotten what you did in the first screen the second was not explanatory. It was assumed that in the 2nd you knew what do'*.
j. *'Would have used individual children as benchmarks and 1 question at a time'* (WSE).
k. *'I tended to work on ability groups of children and work through each child'* (WNQT).
l. '*Also might be easier to work on one area at a time using electronic screen whereas on paper you would work through the 4 sections'* (CSE).
m. *'We sat in the ICT suite doing it and the staff just sat and talked and shared'*.

The second teacher added the caveat that it was:

n. '*Straightforward provided you read DIFFICULTY WITH at the top'* (WExp).

This was an important point in the school training sessions as several people did misunderstand the instructions and begin to complete the screen as if I was asking if the child had strengths in each area. In the session this was quickly rectified and the correct procedure of recording the child's difficulties in each area was achieved.

5) Talking about moderation

Moderation between scores and between teachers in and between schools had been part of the design. The researcher offered a session to each school where the same instructions regarding scoring and completing the screen were given. The session was taken up by 4 of the schools. In Willow the SENCO said that they would run the session on the instructions provided to ensure that it was comparable as far as possible. Some teachers felt that more input on

313

moderation was needed. However this appeared to some extent to be dependent upon the experience and confidence of the teacher.

A newly qualified teacher in Willow indicated a need for more guidance:

An experienced Foundation teacher and a SENCO were happy with the levels:

a. '*Found the input sufficient'* (WExp).
b. *'Happy to make comparative judgement of known children– didn't have moderation issue because I looked at SLCN for the cohort but LAMP flagged up diagnostic areas of SLCN previously unknown'* (WExp).

This teacher also found ways to check the validity of her LAMP scoring:

c. *'I found it useful to talk to TA – so a form of moderation of assessment (*WExp).
d. *– another moderation found by accident was that LAMP assessment backed up foundation scores for profiles (SSP score)–apart from one new child I did not know too well'* (WExp).
e. *Foundation teachers would sit together and work but it also may well be that particularly at the beginning of the year that year 3 teachers talked to the year 2 teachers –that there was some sort of cross year groups because I think that's important and a little bit of moderation (BHead).*

Beech fed back the following discussion on moderation:

f. *'Initially because we didn't understand the process very well they completed the screen for everyone in their class and then we didn't get parental permission for all of them so we had to take some of the children out. So we may actually be quicker also they are more au fait with what the screen is all about. I think it will be easier. I mean we spent a lot of time discussing it as we like to be thorough, and a lot of time saying is it this or is it that: shall we give them this level or that level? And there was moderation of things and talking amongst year groups so it did take longer to do than perhaps it needed to do. Because it was new to us we wanted to do it that way, fairly thorough (BHead).*
g. *Yes and I think from that point of view it was a lot of time and a lot of effort but once they'd actually done it they could see the benefit of it. So I think it's one of those things where investment of that time is a useful thing to do'* (BHead).
h. *'I would have liked more guidance on <u>sometimes</u>. Does sometimes mean once a lesson/once a day etc.* (WNQT).

i.   *'I would comment on the distinction between scoring 2 (sometimes) and 3 (frequently) is a 25% jump. Also would like guidance for moderation of levels between teachers'* (WNQT).

6) How did teachers make decisions on scoring?

a.   '*Benchmarking - picking the worst or best with children then comparing'* (WExp).

b.   '*Knowing child so by week 6 had made lots of observations on children so knew them better (*Foundation*)'* (WNQT).

This teacher used the strategy of double checking to see if speech, language and communication difficulties were an issue with previous teachers.

c.   '*I had to double check if SLCN issue or not when they were engaged in lesson/teaching/class dynamics*' (WNQT).

d.   *'We relied mostly on what we thought of as gut instinct when we did the first screen* (CSE).

e.   *'We had to give more thought about it and that was more difficult so we had to go with a natural response. Quite often it balanced it up and was the same as the gut reaction'* (CSE).

f.   *'We spent a lot of time discussing it we like to be thorough, and a lot of time saying is it this is it that, shall we give them this level or that level, and there was moderation of things and talking amongst year groups so it did take longer to do than perhaps it needed to do. Because it was new to us we wanted to do it that way, fairly thorough'* (BHead).

g.   *Once we found a way of doing it we stayed with it* (CHead).

h.   Thoughts and ideas. *'It was sometimes amongst year groups teachers so the 2 Foundation teachers would sit together and work but it also may well be that particularly at the beginning of the year that year 3 teachers talked to the year 2 teachers –that there was some sort of cross year groups because I think that's important and a little bit of moderation: And I went around and spoke to most of them because again I think facets of a child are seen by different people and I think from the point of view of using different staff members so meal time assistants, teaching assistants particularly teaching assistants – I became involved because a lot of the children do come and talk to me voluntarily and I'm out on the playground a lot so I do manage to speak to them then. They often speak in a very different way when they're in those Social Skills situations. In the end they just went for the one they felt gut reaction was the best fit...sometimes in fact I know from some of them they left it, they couldn't decide on a score and they left it and came back to it because they wanted to reflect on it further'* (BHead).

315

i. '*We relied mostly on what we thought of as gut instinct when we did the first screen. We had to give more thought about it and that was more difficult so we had to go with a natural response. Quite often it balanced it up and was the same as the gut reaction*' (CSE).
j. '*Also might be easier to work on one area at a time using electronic screen whereas on paper you would work through the 4 sections*' (CSE).

7) Reasons given for changes in scores of concern for children

Changes in scoring were seen in both directions with some scores of concern decreasing from S1 to S2 and some scores of concern increasing. No one interviewed in the study attributed a reduction in concerns directly to changes in children's language skills although the NQT noted changes in a child's performance in class after he had seen his problems differently. Increased teacher awareness of the nature of language difficulties was most often put forward as a reason for potential changes in scoring.

A Head and an experienced Foundation Teacher gave their thoughts on possible reasons for scores of concern increasing for some children.

a. '*This was based on thinking that when teachers observed children more closely for language difficulties, they were more likely to see them by the time of the second screening. Prior to this it may not be so apparent*' (CHead).
b. '*By the end expectations of children are different than at beginning (foundation) – so that does reflect a bit in your scoring (WExp).*
c. *probably more children showed more difficulties at second screen because maybe those difficulties are more apparent the more they speak* (WExp).
d. *The expectations of teacher change*' (WExp).

A SENCO agreed with this view:

e. '*Agreed it's what level you expect them to be at and if they don't actually reach that level. Knowing the expected level makes a difference, so if children do not reach that level it's more apparent*' (WSE).

The screening raised the effect of increased awareness as a factor in changing concern levels recorded from S1 to S2:

f. '*Change, positive change, that's fine, great but not expecting that because what can also happen is you can find that it stays the same or*

316

has gone a little bit backwards now that could indicate that staff are actually much more aware. I certainly felt that I had more awareness of what a language type difficulty looked like after using the screen (WNQT).

g. '*It depends on how reflective you are as a practitioner thinking I might have some impact in this actually rather than just the pupils themselves'* (CSE).

A contribution from a Head chimed with this as an explanation:

h. '*I think also because you're focused in on those children so you may actually be able to understand difficulties far more. Because once you've done the first screen it hasn't meant that every child has had something done. Those children where there were difficulties have maybe had work done with them so it may be that you have a better understanding of a particular element that you didn't have before. It was best guess before whereas now you've got more real evidence to back it up'* (BHead).

i. '*Funnily enough that's one of the questions the staff have been asking me well what happens if they've gone backwards over the year and I've said exactly that to them well that just shows you're more aware of things and this is a more accurate judgement than the one at the beginning of the whole thing'* (BHead).

Another factor raised was that of changes in teacher perceptions affected by the mood of the class on particular days.

j. '*So I think timing of when you fill it in, and if you'd just had a bad day, and maybe just building in some time to just go back to it and have a look at it because if you've just had a bad day with a child then receptive language may score very low because you know that it's very coloured by how they've been during that day and maybe 5 or 6 times out of 7 they'll be okay'* (WNQT).

k. '*I think they (staff) do know it it's just seeing it within that context and the sort of speaking and listening and in particular the LAMP screening it's making those connections'* (BHead).

l. '*Not sure' (*CHead).

m. '*By the end expectations of children are different than at the beginning/ so that does reflect a bit in your scoring* (WExp).

8) Changes to teacher awareness of the nature of language needs

a. *I found some things informed the thinking in my head about that child, and informed my decision making as I went along. Things like the descriptions of a particular language problem'* (WExp).

b. '*We have a lot of children who are high functioning with Autism and some who are just for want of a better word just a little different. They are high*

317

attainers but may be not very good at being team players. The receptive language particularly was low because they shut themselves off' (BHead).

c. *Probably more children showed more difficulties at the 2nd screen because maybe those difficulties are more apparent the more they speak. Expectations of teacher changes'* (WExp).

d. *'It's not what level you expect them to be at and if they don't reach it you need to find out the reasons behind it. The screen helped me to look at language levels to see if that was part of the problem'* (WNQT).

e. *'The first (screen) helped my confidence because it was diagnostic'* (WNQT).

f. *I can see where possible issues might lie already'* (WExp).

g. *'A bit more aware and confident in identifying language related issues'* (WExp).

h. *We found looking at the areas quite thought-provoking. It heightened awareness'* (CSE).

i. *Staff are more aware of the possibility of behavioural difficulties being linked to a language skill problem. Practice has changed slightly'* (CSE).

j. *'I would put time in to do S1 because it is a very valuable thing to do – make you really think about the child. The final one was quicker'* (WExp).

k. *but LAMP flagged up areas of SLCN previously unknown (WSE).*

9) Changes to Teacher confidence in identifying language needs

The research literature highlights the lack of confidence teachers feel in identifying language difficulties. This was reflected to some extent in the teacher responses to the self-perception questionnaire. One barrier to completing the screen initially was teacher time and lack of confidence regarding what a language and communication difficulty or its impact looked like:

a. *There's a lack of specialist knowledge in this area for many teachers so for example usually we would call in the CIT (Communication Interaction Team) for advice and support'* (BHead). *'*

b. *Identifying areas can be drawn out as there are so many little areas* (BHead).

However, teachers came to believe in the face of the evidence that their knowledge was better than they had at first thought:

c. *'We relied mostly on what we thought of as gut instinct when we did the first screen. We had to give more thought about it and that was more difficult so we had to go with a natural response. Quite often it balanced it up and was the same as the gut reaction'* (CSE).
d. *'Not sure'* (CHead).

An experienced Foundation Teacher found that her confidence in this area had increased.

e. *'Advantage - made me reflect in a different way about children also because LAMP backed up SSP it made me feel quite confident in my decisions'* (WExp).

A newly qualified teacher reported the following insight:

f. *'More awareness – more confidence at looking at issues and recognising them – not more confident about resolving issues but more confident about finding out what it is'* (WNQT).
g. *'I think you are more confident in doing the second one'* (WNQT).
h. *'Increased my confidence in identifying areas of language that were a problem for the child'* (WExp).
i. *Those children where there were difficulties have maybe had work done with them so it may be that you have a better understanding of a particular element that you didn't have before'* (BHead).

10) Evidence of changes to teachers' practice

a. *'Staff are more aware of the possibility of behavioural difficulties being linked to a language skill problem. Practice has changed slightly'* (CSE).
b. *My strategy with one boy changed as I had thought his difficulties were behavioural but he scored so high on the receptive part of the screen I changed my mind and began to think about how I could help his understanding. I thought more about verbal information I was giving the class. He did begin to concentrate more* (WNQT).
c. *'Maybe in future I can use that (LAMP) information as much as I can to plan support'* (WNQT).
d. *'There are real possibilities as to how to use it'* (CSE).
e. *'Too early to tell'* (CHead).
f. *'Minor changes to class seating children with language issues facing teacher (not back to teacher) raised my awareness of observing issues'* (WNQT).
g. *'They (teachers) have altered things (scores on the LAMP screen) as we have gone along and we have also got speech and language therapists to come and work with children'* (BHead).

319

h. *'So that is the next key question really about how has using the screen impacted on people's practice? You mentioned foundation people have looked to ensure there are opportunities to explore those areas of the curriculum that they've needed to so when they've seen the screen – 'Oh I need to do more of this in whatever SEAL or more of this in drama work or whatever so it's been impacting in terms of that sort of work and also I need to make sure that the T/A does some of this with this child or that children have individual support as I say with (name), she's made sure that that Foundation curriculum has enabled children to make the progress and also has brought in children support from other areas so for example we had things like speech and language and communication and interaction team or maybe put a child with a learning mentor because they're finding something tricky , maybe involve an outside agency and to enable them to have some extra support in there. But I think it's difficult to actually separate it out and say this is specifically because of the screen it's specifically because of the project and not because of all the other, because it's part of a package we offer so it's difficult to tease out that it's specifically because of the project – so the project is one link in the chain' (BHead).*

i. *LAMP helped our plans for the next step as a whole school – raised the awareness of need (WSE).*

j. *'It depends on how reflective you are as a practitioner thinking I might have some impact in this actually rather than just the pupils themselves' (CSE).*

k. *'Could see the benefit of whole child approach as I had to look back through and see the whole child result' (WNQT).*

l. *'I found some things like the descriptions of a particular language problem informed the thinking in my head about that child and informed my decision making as I went along' (WExp).*

m. *'Advantage – I think more about children in class and where any issues might lie. Using LAMP gives a reason to take the time to stop and think about – reflect on children' (WNQT).*

n. *'Some teachers said - increased confidence in identifying areas and more awareness – more confidence at looking at issues and recognising them – not more confident about resolving issues but more confident about finding out what it is and I think for some because of how many different things they have going on they feel as if they've not done it enough justice – so I think it's a very mixed bag really. That may not be the answer that you wanted – I think it reflects the whole cross section really- on the whole I think people have found it useful – but I think as part of the evaluation as I said to you we know we should have spent more time on it – we've not really spent enough time. They are very good at admitting when they know that they maybe need more support*

with something – that's good that's part of the journey we've taken as a school and it's the ethos of the school' (BHead).

    o. '*Staff changes so that's difficult- quantified support provision, teachers already talked about it – data can be viewed at different levels whole school to year group to class to individual pupils – T/A's been identified through a skills audit to run support Focus groups next year so changed that level a bit'.*(WSE)

11) Evidence of whole-school motivation/forward planning

    a. *'The advantages were that we were all looking more at the children's language skills and interactions and lack of them'* (CSE).

    b. *'LAMP helped our plans for the next step as a whole school – raised the awareness of need – base line is low on entry so LAMP quantifies whether the issue is a barrier and raises awareness of areas of need and need of provision to be built in as language has an impact on everything else for children do in school. LAMP demonstrated quantity of need'* (WSE).

    c. *'Capacity of time taken to assess needs to be built /planned into school'* (WSE).

    d. *'We sat in the ICT suite doing it and the staff just sat and talked and shared thoughts and ideas. It was sometimes amongst year groups teachers so the 2 Foundation teachers would sit together and work but it also may well be that particularly at the beginning of the year that year 3 teachers talked to the year 2 teachers –that there was some sort of cross year groups because I think that's important and a little bit of moderation'(BHead).*

    e. *'And I went around and spoke to most of them because again I think facets of a child are seen by different people and I think from the point of view of using different staff members so meal time assistants, teaching assistants particularly teaching assistants – I became involved because a lot of the children do come and talk to me voluntarily and I'm out on the playground a lot so I do manage to speak to them then. They often speak in a very different way when they're in those Social Skills situations'* (BHead).

    f. *'I think about our barriers we needed to do more whole staff time, I mean I think again hindsight is a wonderful thing and I think I've been reflecting on how well we've done it and how I would do it differently next time is part of my evaluative work that I do – and maybe building in more times on things like non-pupil days when teachers and teaching assistants can actually work together on it because teaching assistants are at the very front line of it all and I think from that point of view making them more of*

the focus really and perhaps using more of the observational skills that they have to actually complete' (BHead).

g. *They are very good at admitting when they know that they maybe need more support with something – that's good that's part of the journey we've taken as a school and it's the ethos of the school'* (BHead).

h. *TAs are now being identified for each year group. LAMP screen results will help to separate children who are not making progress. LAMP will help with identification in Foundation'* (WSE).

i. *'Also we've got the Spirals now and we're looking at the Spirals for all of the areas as well so I think from that point of view its inspired people. I think that's what was so inspirational really –I don't think the staff had actually realised just how mesmerised they were by puppets, and of course if it's mesmerising adults it certainly will engage children won't it. I think that's where they saw the power in it. But I think people have realised and seen a difference in how the children have moved forward that I think we'd be better at it next year'* (BHead).

j. *If I can identify children and put specific programmes in to support difficulty we will do. That's the next step'* (CHead).

12) Home related factors

a. *'Yes, exactly and how much of it is linked to how the parents see us? I also know I have a number of pupils who are told not to say anything when they're at school. They're not quite sure where to draw the line at that. It's a bit of an isolated issue and you know there aren't many of them again but you know there are some like that and are afraid to say too much in case it causes problems at home'* (BHead).

13) Advantages of using the LAMP screen

a. *'The advantages are (*of LAMP screening) *it's allowed us to focus in on an area – speaking and listening, it tends to be the poor relation in some ways in terms of inset provision and in terms of work that we do as a school to the reading and writing. I think because of APP and because of the primary framework, reading and writing have become such big issues perhaps to the detriment of speaking and listening per-se. Yet we've always seen speaking and listening as so important it underpins absolutely everything in every area of the curriculum and I think from that point of view it's been nice to be able to focus in on it and to make sure we give it the proper amount of time and to recognise the importance of oral language and the impact if it isn't developing for a child. I think everybody does, it's one of those things - oh of course we know speaking and listening is really important but then you don't do anything with it. So by having this it's allowed us to have the time and to put the effort into*

actually making sure we're aware of where the difficulties are and trying to address them and to move forward on it' (BHead).

b. *'initially lots of time, a real thinking process- used paper copy first - looked at each child as a whole – LAMP helped inform IEPs'* (WExp).

c. *'I think it was a lot of time and a lot of effort but once they'd actually done it they could see the benefit of it. So I think it's one of those things where investment of that time is a useful thing to do. We had a few surprises in terms of some of the areas that the children came out not very well in and areas that they came out well in. Were a few of those that some of the staff were saying I would have thought it would have been more in this area than this area, but no real difficulties and I think once they'd actually completed the screen it gave them a new overview of their class.– I think also because you're focused in on those children so you may actually be able to understand difficulties far more because once you've done the first screen it hasn't meant that every child has had something done, those children where there were difficulties have maybe had work done with them so it may be that you have a better understanding of a particular element that you didn't have before'* (BHead).

d. *'Teacher responses indicated that they felt that the lamp screen gave them the most effective tool they had used so far when identifying and supporting SLCN in school'* (BHead).

e. *LAMP demonstrated quantity of need'* (WSE).

14) Continued use of the LAMP screen?

a. *'Yes, and I think once you've actually worked your way through it you know the value of it and you know the impact it could have. I know we haven't done enough on it, we haven't got enough impact out of it. We could have done more so that if we're going to do it I want to do it in a better way'* (BHead).

b. *'A bit more time perhaps opportunity to get the staff together on what they could do to support children. We need a more detailed package of support for when a child needs help'* (CHead).

c. *'More notice and time built in to allow completion – this year's S1 and 2 will be used in September 2010 for the children moving class/year groups as a starting point'* (CSE).

d. *'Would like to have last times data next to it and hide if want to'* (WNQT).

Table 104 Key abbreviations used in Focus groups

Key to abbreviations	
CSE	Cedar SENCO
CHead	Cedar Head Teacher
WExp	Willow – experienced foundation teacher
WSE	Willow - SENCO
WNQT	Willow – newly qualified teacher
BHead	Beech Head Teacher

Appendix 12: Spreadsheet of results S1 example for Cedar School

Personal details of the children have been removed (initials and dates of birth)

Appendix 13 LAMP Pilot description and model from which LAMP was drawn

The initial LAMP pilot was conducted in an inner city school with low SES. Every child for whom parental permission had been given was screened by the teaching staff twice in an academic year by teachers using the LAMP screen. The data from the screening was then analysed and used to guide input to the schools provision map in a coherent way. Within the Pilot study the school was given training in the use of Spirals Language Development, small group work sessions (Nash 2002: 2004: 2011) as an intervention.

At the end of the 2 year period the screen was found to make the following contribution to practice and the LAMP was deemed by the management of the school to be effective in helping teachers to identify pupils with speech, language, and communication difficulties in their classes.

- LAMP screening identified levels and patterns of speech language and communication need at an individual, group, class, and whole school level and enabled planning for provision.

- Using the LAMP screening twice times each school year had an upskilling effect upon the teacher's awareness, confidence, and skills in identifying and supporting SLCN across the school. Teachers expressed themselves as more aware of areas of difficulties children with SLCN could experience and more confident in choosing intervention strategies to support the children with these needs.

- There was a positive impact on the children's skills base. This was, I learned, supported through the use of the Spirals language support (Nash, 2002). The value of the screen appeared to lie in identifying children for inclusion in the groups at just the right level of need.

- ▪ Confidence in the screening process was evidenced by continued use of the screening process that continues currently as part of the school's evaluation system.

- ▪ Conversations in the staffroom changed during the pilot study period. The Head reported that teachers were using more analytic descriptions relating to children's language needs rather than emotive terms of concern.

Theoretical model upon which the LAMP screen is based.

It had been essential to ensure that the LAMP language screening tool was based on a theoretical model that reflected key areas of language and communication linked by research to effective language function in the classroom. From the 1970's, models of language development have sought to represent the dynamic interactional nature of language. Linguistic models such as Bloom and Lahey's (1978) were helpful in identifying key language skills and in providing explanations as to how these key skills interrelate. The 3 key areas described in their model were:

- **'Form'**: or the ability to put together a grammatical sentence.

- **'Content'**: use of appropriate vocabulary and concepts*.

- **'Use'**: making use of language in a variety of different ways, such as for greeting, describing, arguing. This would also include subtle communication such as the use of body language, facial expression, tone of voice and non-literal language as well as knowing how to take turns in talking.

The first of the 2 sections of the LAMP screen deal with what Bloom and Lahey call 'form' and 'content', but LAMP further separates into 'outgoing' and 'incoming' language calling it expressive language and receptive language. The last 2 link to the category of use in the Bloom and Lahey model. The third section of the LAMP screen explores behaviours related to language such as

listening and attention. The 4th section looks at the use of language skills in social situations.

In the construction of the LAMP as a dynamic screening tool I next took heed of the well-respected work of Elks and McLachlan (2003). Their ELKLAN model makes a clear distinction between the skills needed for understanding language and those required for expression. The model provides an overview of language processing which includes, attention, listening and memory.

The ELKLAN model proposes a 'Communication Chain' of language related skills. This chaining reflects the dynamic and inter related nature of linguistic communication processes and allows for the potential to predict particular effects of any difficulty dependent on where a child's communicative competency is breaking down. If, for example the child has difficulty in their speech, we can predict an impact upon their expressive language skills, but it will not necessarily follow that comprehension will be affected, although there may be some social skills difficulties if the child becomes too self-conscious of their speech to talk freely with others. Conversely if the primary difficulty is identified within the comprehension of individual words, we can predict difficulties for the child when expected to communicate in social contexts but not necessarily in the mechanics of talk. When difficulties are identified in areas of semantics, such as miscomprehension of the meaning of sentences, literal understanding and underlying social meanings, we can predict difficulties within social skills development. Difficulties will also impact on ability to reach academic goals and can affect the child's social based skills including maintaining friendships. Here frustration due to a breakdown in linguistic competency is more likely to affect behaviour through such mediums as acting out or withdrawal (Smith et al, 2007).

<u>Appendix 14 A description of the indicators of economic status used in the study.</u>

RAISE online is a secure web-based system available to schools, Local Authorities, and Ofsted which provides a range of statistics including the socio-economic context and mobility factors. Each school is compared to a national average for primary schools. The Mobility Index shows the stability figures in percentages for classrooms as a function of pupils both leaving and enrolling in the school during the school year. Although this does not provide information directly related to deprivation status it can provide additional information on the nature of the school population and the population mobility factor where there can be impacts on the running of the school.

Mobility of a school population is increasingly linked to the notion of turbulence. Starting at a new school is an unsettling and potentially stressful time for children and their families. This can be particularly so if it is due to family breakdown or school placement issues. A census reported in 2002 (TES Connect, 2002) indicated that more than one million children in the UK had moved in the twelve months previous to the survey. Travellers, refugees, work-related re-locators and armed forces families were the groups cited by local authorities as the most mobile groups. Almost one in ten children were reported to move school each year. Primary-age children were found to be more likely to move school than secondary school pupils.

IDACI stands for the *Income Domain Affecting Children Index.* This is sourced from the Communities and Local Government, Indices of Deprivation 2010. IDACI score is defined as the percentage of children aged below 16 living in income-deprived households in an area and the IDACI rank refers to the given positioning of any area on this ranked system. The lower the IDACI score the higher the levels of deprivation in a postcode area.

The Multiple Deprivation Index (MDI) is drawn from a 2007 qualitative study of deprived areas in English local councils. The index was produced by the Social Disadvantage Research Centre at the University of Oxford and is currently published by the Department for Communities and Local Government (DFE

2010). This takes into account a number of indicators, chosen to cover a range of economic, social, and housing issues, and combines these into a single deprivation score for all areas in England. The data is updated and is used by government departments to assess socio-economic need. The indices are referred to by the DFE and Local Authorities in order to identify areas that would benefit from funding streams for targeted initiatives.

But again I did not assume that pupils in a high SES school were necessarily all from families living in favourable economic circumstances and vice versa. I therefore I looked at free school meal entitlement (fsm) as an indicator of individual pupil circumstances with which to make individual comparisons alongside school levels of language proficiency. Free school meals entitlement (fsm) has been considered as a key indicator of economic status in families and by percentage in school populations. For a child to qualify for a free school meal, their parent/carer must be receiving qualifying benefits as outlined by Government, thus indicating reduced economic circumstances. Fsm contributes information regarding the economic circumstances of individual children and of cohorts of children within each school. However, there is some debate on whether free school meal entitlement is sufficiently closely linked to the dynamics of poverty to serve as a reliable indicator of educational disadvantage. Esping-Andersen (2006) questioned the status of fsm as a reliable indicator. This was on the grounds that there can be rapid changes in families' economic circumstances. There can be under inclusion where families do not claim benefits or have to wait for processes to be complete prior to eligibility. Esping-Anderson concluded that the popularity of the fsm as an indicator lies in its easy availability.

Although there may well be disparities between entitlement and uptake of this benefit such as touched on by Esping-Anderson, fsm is one of the main indicators used by policy makers when devolving school funding and as such was considered to be sufficiently robust as an index to support the selection of schools in the City in varied social contexts for the purposes of this study. It was, however, decided to use fsm data with caution. More recently the report on 'National Statistics on Academic Achievement and Entitlement to Free

School Meals in Wales' (DfE, 2011) found strong links between fsm entitlement and educational disadvantage. I considered that this gave support to my original decision to use fsm as one of the indicators of disadvantage.

SEN figures, school absence levels and progress in English were also considered to have been key descriptors of the school populations.

School population comparisons

In table 105 below, comparisons are provided between each school, each locality and national figures. It gives an overview of the 4 schools deprivation index. Oak and Cedar share a broad area postcode and both had a higher IDACI ranking than Beech and Willow. However Cedar's ranked position in the City for their location was 16,804, considerably lower than Oak's figure of 23,155 indicating higher levels overall of material deprivation in the area from which Cedar school draws despite being in the same broad post code area as Oak.

The IDACI rank for Willow was the lowest. It was in an area ranked 4,233 which is lower than Beech's at 14,823. Thus Willow was in an area that had the highest deprivation score.

Cedar School was sited within one half mile of Oak within the same ward. There were 171 pupils aged rising 5 to eleven years. An Ofsted interim report showed that the school's good performance had been sustained from 2008 (Ofsted, 2010). Oak School had a low deprivation index and lies within a suburban area of the City. There were 315 pupils aged rising 5 to eleven years (Ofsted, 2008). Beech School had a high deprivation index. It had 296 pupils age rising 5 to eleven years (Ofsted, 2008). Willow School had a high deprivation index. There were 317 pupils from rising 5 to eleven years in the main school. In 2010 Ofsted put the school into the category inadequate then into special measures in 2011 (Ofsted, 2011).

Table 105 Matrix of Local Authority and National indices relating to the 4 schools in the study

School	Free school meals %			Multiple deprivation index score Raise online Nationally2010/ 0.24	IDACI Rank by postcode (PC)	Stability Raise online National 86%	SEN identification % National 2009 is 21%	Absence England 4.4%	% making expected progress in English
	Compared to fsm % City	Compared to fsm % South West	Compared fsm % nationally						
	19.1%	12.96%	17.44%						
Cedar	7.89%/ Low	Low	Low	0.12	PC/16804	70.2	18.7% High	4.7%	No figs
Willow	41.0% High	High	High	0.37	PC/4233	76.1%	5.8% Low	5.8%	53%
Beech	34.00% High	High	High	0.37	PC//14823	74%	18.2% High	6.2%	71%
Oak	3.68% low	low	low	0.11	PC//23155	92.3	1.6% low	3.4%	71%

Table 106 4 schools by deprivation index (RAISE Online) and pupil numbers

	Deprivation Index	Potential pupil numbers	Enrolled male	Enrolled female	Unknown	Enrolled total
Cedar School	Low	171	34	41	01	76
Oak School	Low	315	112	119	01	232
Beech School	High	296	51	50	11	101
Willow School	High	317	Gender not stated			267

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