

Title: Interventions for children with speech, language and communication needs: an exploration of current practice

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Abstract

This paper reports a series of interviews with education and health practitioners. The aims were to identify interventions used in practice with children with speech, language and communication needs, to explore explanations for the choice of intervention and to identify the ways that outcomes were measured. Participants (n=61) included educational psychologists, speech and language therapists and education advisory staff. They talked about interventions in terms of published programmes, principles and activities, strategies, resources, training programmes. There was evidence of local adaptation of interventions and wide development of local programmes. The choice of intervention was governed by a desire to meet identified service gaps and with reference to the evidential and/or theoretical basis of the intervention and the practicalities of the intervention. Outcomes were typically measured at the level of the individual rather than a service level. The study provided insight into the range of interventions in current practice, how service managers justify intervention choices and measure outcomes. The data from this study informed a national survey to examine patterns of usage of interventions.

Keywords: intervention, speech language and communication needs, speech and language therapy, education, children

I Introduction

In 2008, the Bercow Review of services for children and young people with speech, language and communication needs (SLCN), called for the establishment of a research programme to “enhance the evidence base and inform delivery of better outcomes for children and young people” (DfES, 2008:10). The UK government of the time responded by commissioning a programme of research (known as the Better Communication Research Programme <http://www.warwick.ac.uk/go/bettercommunication>) to investigate the effectiveness and cost-effectiveness of interventions. The concern was to improve understanding of what interventions work for children and young people with SLCN so that commissioners might develop services that were more effective and cost-effective. A number of projects arose from that programme of work and these are described in Lindsay, Dockrell, Law, Roulstone and Vignoles (2010). One project aimed to identify the research evidence available for interventions currently in use in both education and health services. As a first step it was therefore necessary to identify what interventions were being used with children with SLCN. This paper describes that process.

Previous reviews of services for children with SLCN have focused on the range of provision in terms of educational placements for children and young people with SLCN (Lindsay,

Soloff, Law et al, 2002; Lindsay, Dockrell, Mackie and Letchford, 2005a,b). Studies have also surveyed practitioners' modes of delivery of intervention (e.g. group, direct, indirect) (Fuller, 2010). The latter study focused on the nature and delivery of speech and language therapy within local Sure Start programmes (similar to Head Start programmes in US). Other studies of practice have surveyed speech and language therapist's (SLTs) use of interventions for children with speech problems (McLeod & Baker, 2004; Joffe & Pring, 2008) and receptive language impairment (Law, Campbell, Roulstone, Adams & Boyle, 2007). The two studies of speech interventions focused on interventions already mentioned in the research literature. They also investigated delivery processes such as frequency, and factors influencing the choice of intervention. Both surveys, one in the UK and one in Australia, concluded that individual SLTs favour particular interventions, although some that are mentioned in the literature, were rarely used in practice. Joffe & Pring (2008) also found that SLTs typically combined interventions.

In contrast to these previous surveys, Law et al (2007) started with an open question about interventions in use. They asked SLTs to identify a child from their caseload with receptive language impairment and to outline three activities they had recently used with

that child, giving practical reasons and explicit rationales for their choice. Participants' descriptions of interventions fell into two categories, focusing on skills acquisition and metacognitive skills. About one third of the explanations of intervention choices related to the underlying deficit such as processing limitations. The rest were described as 'theories of therapy' where there is no direct reference to an underlying deficit and the focus was more on the aims of the intervention.

These previous studies have focused on interventions for specific groups of children. In contrast, the aim of the study described here was to gain an understanding of interventions used across the full range of SLCN. Furthermore, the focus was on the interventions used by services as a whole rather than the practice of individual practitioners.

1 Defining intervention

Since we planned to identify interventions inductively from the reports of service managers and team leaders, it was useful to investigate how interventions had been described in the literature. However, this was not quite so straightforward since there

were a variety of definitions. At its broadest, an intervention is viewed as an action or technique or activity or procedure (or indeed combinations of these) that reflect a shared aim to bring about an improvement, or prevent a negative outcome, related to a child's speech, language and communication skills; this can also include the modification of factors that are barriers or facilitators to change and the modification of an environment to facilitate communication development (Bunning, 2004; Dockrell and Messer 1999; Dollaghan, 2007; Law, Boyle, Harris, Harkness and Nye, 1998). For example, Law et al (1998:iii-iv) define intervention as "an explicit application of therapeutic/educational techniques intended to modify an individual's performance in a designated area associated with communication". Words such as treatment, therapy, intervention, and remediation are used interchangeably although they carry slightly different connotations, some more medically oriented than others.

McCauley & Fey (2006) present a model of intervention that identifies components that, they suggest, should be made explicit in the development or description of an intervention. The model covers the goals of intervention, the goal attack strategies, procedures, dosage, who delivers the intervention and the context in which it is delivered

as well as the monitoring and assessment processes to be used. In an analysis of therapies used in acquired aphasia, Byng and Black (1995) identify key components of therapy including the design of the task and how it was explained, the stimuli and materials used, the nature of the interaction between therapist and patient, the feedback and facilitation provided as well as the duration and intensity of intervention.

In the research literature evaluating interventions, the specifics of an intervention have sometimes been lacking. For example, Pickstone, Goldbart, Marshall et al (2009), in a systematic review of interventions that target a child's environment, commented on the variability of detail that is given by research reports. Pawson (2006) criticises the rather sloppy use of the word intervention. He argues that it is used as a catch-all term that conflates various activities such as clinical treatment, a healthcare programme or a training programme that are often quite dissimilar, leading to confusion about what is being described.

Against this confusing background, we set out to identify the interventions currently in use by health and education professionals with children with SLCN. The first stage was a

qualitative study which aimed to gather data from service managers about the interventions being used in their service.

2. Research questions:

The aim of this project was to map the interventions that are used with pupils with SLCN.

In particular we aimed to:

- a) identify the interventions in use with children and young people with SLCN;
- b) explore the underlying rationale for the use of interventions in a particular context (e.g. with a particular group of pupils);
- c) investigate the outcomes that are targeted by these interventions and how they are evaluated at a service level.

II Method

1 Overall design

The research study adopted a qualitative design based on individual and small group interviews. Key personnel from Local Authorities and NHS Trusts with responsibility for provision for children and young people with SLCN were approached regarding their

Comment [MV1]: Would you call these semi-structured interviews? Were there a list of questions used? If so may be useful to have these as an appendix?

Comment [SR2]: Semi-structured would be an appropriate description. As there were two stages of interviews I'm not sure if you would want both interview guides? I will attach both and am happy for either or both to be used

participation in the study. At the time, other projects, commissioned from the governments' Better Communication Action Plan (DCSF, 2008) and known as the Pathfinder projects were starting to examine aspects of joint commissioning. Initial contacts were made through these Pathfinder sites in order to create links between the two programmes of work. Some additional Local Authorities and NHS Trusts who were known through previous research programmes were also approached in order to establish a sample of services that were geographically diverse.

Interviewing followed an iterative process, so that data collected were fed back into successive interviews. All interviews were taped and field notes were taken at the time of the interviews. The tapes were not fully transcribed; instead, on-line analysis of the interviews was carried out using a structured format to collate the answers to each question. Recordings were used to provide clarification and to check for the detail of participants' wording. Service documents were collected in order to provide context about how specific interventions were used within service care pathways.

2 Sample

The sample covered 14 different areas: six rural counties, seven urban and one inner London Local Authority (LA), with a spread around England. Interviews were held with senior managers from ten Educational Psychology Services (EPS) and fourteen National Health Service (NHS) Speech and Language Therapy Services. In ten of the fourteen areas, Speech and Language Therapy Services were in the same locality as the EPS. It was decided to interview managers since they would have an overview of the interventions used in their service; however managers were also encouraged to include their team leaders and relevant associated service managers. Table 1 summarises the interviews that took place and the participants involved in each interview. In total, 61 practitioners were interviewed: 13 Educational Psychologists (EP), 33 Speech and Language Therapists (SLTs), and 15 advisory team managers. The latter had various designations which included references to SLCN, inclusion, sensory services, communication and interaction.

Comment [MV3]: Were these advisory Teacher teams?

Comment [SR4]: yes

3 Procedure

Two phases of interviewing took place. The first phase was piloted with a range of LA and NHS SLT managers and team leaders in one LA. Following revisions, this interview first asked respondents how they defined groups of children with SLCN and how they defined

Comment [MV5]: So was data from pilots used or were these just for the purpose of checking the interview. And then revisions made before interviewing proper commenced

Comment [SR6]: Data from the pilot was used only to inform rrevisions to the interviewing process.

the terms 'Universal', 'Targeted' and 'Specialist' (terms used to describe levels of intervention or services in the Every Child Matters agenda, DfES, 2003). This helped to ensure a common understanding of the groups of children of interest. Respondents were then asked to list all the interventions they used with children with SLCN, listing first of all those targeting communication, then language and lastly speech. They were then asked to describe one intervention from each list in detail. Given the variety of definitions found in the literature, it was anticipated that professionals from differing disciplines would identify and define interventions differently, so we did not wish our questions to contain preconceptions about what would be offered as examples of interventions; the questioning process therefore began with broad open questions and probed for additional detail about their reasons for the use of the intervention and the outcomes used.

The second phase began when the interventions listed by interviewees in phase one had reached saturation, that is no new interventions were being identified. As part of the iterative process, a preliminary analysis of the interventions mentioned in phase 1 had generated three broad categories: programmes, activities and principles or approaches. These lists were shown to interviewees who were asked to identify those used in their

Comment [MV7]: See comment above would it be useful to have the questions in an appendix?

Comment [SR8]: Happy for them to be attached if you consider them to be useful and not too long

service and to add any others not already listed. Within each category, participants were asked to identify frequently used interventions about which they were asked a series of short questions: what age of child would be targeted with such an approach; what the intended outcomes would be; if they evaluated the effectiveness of the intervention at a service level and whether the intervention was used at a universal, targeted or specialist level. Information on which phase of interview was carried out is provided in Table 1.

Interviews were carried out by the first three authors (two speech and language therapists and one educational psychologist), in pairs at first to check for consistency of process and then singly subsequently. Interviews took from 45 minutes to 2 hours and were conducted in the interviewees' work-place in a quiet room.

<Table 1 here>

4 Analysis

Responses for each interview question were initially collated; key categories and concepts were then identified from within each set of responses; responses were then assigned to the categories. The findings below present the emergent categories for each question.

III Results

1. Description and Categorisation of SLCN

Two main interpretations of the meaning of SLCN emerged from the first phase interviews: SLCN as intrinsic to many types of special needs or SLCN as an overarching category with many sub-diagnoses. Generally, participants from education backgrounds described SLCN as intrinsic to many types of special need and did not suggest sub- types.

“It’s hard to think of children we are working with (who have) no need of some kind of communication need.” (educational psychologist)

Descriptions of SLCN were clearly influenced by the Special Education Needs (SEN) Code of Practice used in England (DfEE, 2001). One participant commented:

“..we ask what are the concerns and what are the barriers to access and then what are the interventions....We are driven by Code of Practice definition of SLCN; so would not label a child but look at indications of need” (advisory support team manager)

Comment [MV9]: Can we be more consistent with attributions ?e.g. Section 3 onwards all non SLTs comments are attributed to LA? Should we just have LA here?

Comment [SR10]:

Comment [MV11]: Ditto as above?

In contrast, SLTs tended to categorise children with SLCN into a diagnostic category or type of impairment (e.g. specific language impairment, cleft palate, voice problem, dyspraxia). One exception to this was an SLT service that categorised their children with SLCN into therapeutic need following the Care Aims model (Malcomess, 2005).

Responses to the questions about 'Universal, Targeted and Specialist' in the phase one interviews brought broadly similar answers from all participants, in that there was an acknowledgement of a hierarchy of need and provision; however, education practitioners tended to use the notion of wave one, two and three (as used in the SEN Code of Practice, DfEE, 2001) or tier one, two and three to express this idea. Box 1 shows one SLT practitioner's differentiation which was typical of most.

< Box 1 here >

2. Types of interventions identified

In phase one and phase two interviews, participants described interventions in a variety of ways, irrespective of whether they were talking about interventions for communication, language or speech. Table 2 shows the interventions that participants chose to describe in

phase 1; as can be seen there was little overlap between education participants and SLTs. Education participants generally deferred to their SLT colleagues when offering interventions about speech. In phase 2, similarly, there was little overlap in the choice of interventions described.

<Insert Table 2 >

A total of 158 different interventions were mentioned and from these eight broad groupings of interventions emerged. Descriptions of each category along with examples appear in Table 3.

< Table 3 >

Although some respondents indicated that they used interventions as intended, others indicated that they varied them.

“It's based on PCI (parent-child interaction) and it's our boiling down to some key PCI general principles” (SLT)

Adaptations were being made to suit local purposes.

“When you implement a programme, you can never just take it off the shelf and say ‘that’s absolutely right’, you’re always looking at it, taking feedback from the schools, then developing things that bolster what they see as the gaps.”
(advisory service manager)

Within the interviews there was not always time to probe for detailed explanations of terms that were used.

It was rare that interventions were linked exclusively to any particular level of intervention (that is, universal, targeted, specialist) or to any particular age or diagnostic group, although some interventions were used in a more targeted fashion. For example, the Picture Exchange System (PECS) was reported mostly in the context of children on the autism spectrum and with those with severe and profound learning difficulties.

3. Participants’ rationales

When asked why they had chosen to use a particular intervention, respondents often gave a list of reasons.

“ Because it’s visual.... it fits with the Garrett sentence processing model and uses multi-sensory approach.... not aware of research data to support it, but there’s evidence from (case) notes (to) support its use” (SLT)

Respondents' statements of rationale frequently indicated that the intervention targeted an identified need or gap in services. This included references to the support that the interventions provided for professionals and parents to help ~~them~~their understanding or reduce their levels of anxiety.

"To skill up the pre-school workers in the county to support all children" (SLT)

"It meets the needs of children who can't articulate" (LA)

"We had a significant number of schools with children entering nursery with deficit language skills" (LA)

"It's a tool for schools to use independently to assist children with their social communication" (LA)

Comment [MV12]: Who is LA?

Some made reference to evidence of the intervention's effectiveness. These were either based on personal experience, local evaluations or on research evidence.

"Because it works" (SLT)

"We achieved good results through the evaluation initially" (LA)

"The evidence is that visual approaches help young people to cope" (LA)

"There is a strong evidence base about learning social skills within a group setting where children are able to learn from peers and practice skills with peers" (SLT)

In some cases, there was reference to some underlying theoretical position.

"There's a solid theoretical background explained in the manual" (SLT)

"It's based on the Stackhouse and Wells approach" (SLT)

"It's based on the idea that children learn best within real situations and real experiences that the child has on a day to day basis" (SLT)

Respondents also gave pragmatic reasons, related to efficiency, accessibility and popularity.

“it was a way of seeing more children” (SLT)

“it's fun for children, it's easy to provide visual resources for the sessions and fairly easy for another person to run the sessions.” (SLT)

“it is fun and children like it cause it's easy and they can do it, and there's a nice progression of activities that we can follow.” (LA)

4. Outcome evaluation

Participants were asked how they evaluated children's responses to the intervention. They talked about improving or increasing the children's skills in communication, language and speech as one would expect; they also mentioned the broader aspects of children's social and interaction skills and aspects of psychosocial functioning such as self esteem and behaviour. Participants also reported that they were looking to impact on the child's environment through change in the interactions of significant adults. Appendix 1 shows the outcomes mentioned in relation to examples of interventions identified by participants.

In terms of the methods used in the evaluation of outcomes, participants mostly reported that outcomes were measured for the individual child. Systematic evaluation of an intervention across a service or an authority was rare although some reported that a

particular intervention had been evaluated in a one-off project within their area. Some interventions are associated with evaluation forms which participants reported that they used routinely, for example a questionnaire associated with the Hanen programme. Feedback from parents and teachers regularly played a part in the evaluation of outcomes through questionnaire completion; one group reported that a user group was consulted for feedback. However, the predominant focus of evaluation was on the individual child.

5. Documentation

A wide range of types of documentation were submitted. Some gave guidance on which intervention should be used for specific groups of clients. For example, one SLT service care pathway showed that a child with speech difficulties aged above three years, six months and with good attention would receive a diagnostic screen programme while the same type of child but with poor attention would receive a sound awareness group programme. Some services provided practitioners with a range of interventions to select from using their professional judgement. Other services listed interventions related to the area targeted (e.g. one EPS listed interventions for children where the target was improved attention and listening) or related to universal, targeted or specialist levels of

intervention. Some services focused on the amount of intervention or at what point intervention would be provided for different groups of children. In some cases there was no direct or specific reference to the type of intervention.

Discussion

This study took a qualitative approach in terms of the sampling process, the structure of the interviews and the analytical approach. Sampling was purposive, aiming to gain an understanding of the range of interventions in use with children across the spectrum of need within SLCN. It should not therefore be surprising to see so many different interventions or to see differences in the way that interventions were described. This reflects the diversity of practice that was sampled and the personalisation of responses that is a function of qualitative methods. Structured systems of describing interventions that include the goals, purposes, context and monitoring procedures such as that described by McCauley & Fey (2006) were not routinely used to talk about interventions. This may be a function of the informality of the interview context or it may reflect the

variable way that interventions are described in the literature where there appears to be no consistency or consensus about how interventions are reported.

It was apparent that the intervention labels were used as a shorthand way of referring to an intervention. So the same label could easily be describing different interventions or different labels could be used to refer to similar interventions. Pawson (2006:33) refers to this as “label naivete” and cautions that a label may be used to describe an intervention associated with a particular set of theories, propositions and procedures whereas actual practice may differ from this.

Joffe & Pring (2008) found that SLTs typically combined intervention approaches and note that this is quite different to how they are evaluated in the research context, where the focus is on a single intervention. Similar to Fuller (2010) who noted a high rate of innovation in speech and language therapy approaches in Sure Start, there were many locally developed interventions described in our study. This seemed to be in response to local needs. Although our study did not explore if and how interventions were combined, rationales given by respondents suggest that the development of new intervention

regimes might be through a process of adaptation and combining of interventions to make them fit a perceived service (or individual) need.

Participants frequently made reference to the evidence supporting an intervention in justification of its use. However, in the local development or adaptation of interventions, practice may be moving away from the format that has been evaluated. Thus, even if an intervention has been shown to be effective, we cannot assume that its effectiveness will be similar if applied to a new group of children or with a number of adaptations. In practice, fidelity to the original intention and design of an intervention is difficult to achieve, even where the intervention is relatively straight forward with a strong evidence base. For example, the Lidcombe Programme has convincing evidence from randomised controlled trials (Jones, Onslow, Packman et al, 2005; Lattermann, Euler, and Neuman, 2008) yet, practitioners outside the research context, do not always stick to the basic parameters of the intervention (Rousseau, Packman, Onslow, et al 2002; Shenker, Hayhow, Kingston, and Lawlor, 2005). Pawson (2006:30) observes that “(complex) interventions are embedded in multiple social systems” and as such are subject to “negotiation, leakage, borrowing, resistance, mismatch, adjustment, bloom and fade”

(Pawson, 2006:35) as practitioners try to make the interventions fit local circumstances and work for particular individuals. As a result, interventions are rarely equally effective in every context.

Previous studies have reported varying levels of awareness and use of evidence in practitioners' choice of intervention. McLeod & Baker (2004) found that a very small percentage of their sample (1.1%) referred spontaneously to their use of research literature and indicated that they read journals infrequently. Joffe & Pring found a more positive view of research in their later paper (2008). In this study, practitioners frequently indicated that evidence that an intervention 'works' was part of their rationale for its selection. However, they referred to evidence from their own experience, from local evaluations as well as published research. Furthermore, the level of evidence was only one of the factors that was taken into account when selecting interventions and respondents were clearly balancing practical issues with a process of selecting an intervention to match the needs of the children, perhaps using what Law et al (2007) referred to as 'theories of therapy'.

Although other studies have investigated the assessments and measures currently used by SLTs, they have not investigated the use of outcome measures per se. Respondents in this study specified the outcomes targeted by each intervention. However, none of our respondents indicated that outcomes were being collected at a service level. Given the current political context of outcomes-based commissioning (Department of Health, 2010) whereby services will be commissioned to deliver specified outcomes, it is of concern that services remain unable to demonstrate the outcomes achieved by the various intervention they offer.

1. Limitations of the study

In this small scale study, the aim was to identify the range of interventions in use, so it was not appropriate to look for patterns of usage. Service managers do not necessarily know about all the details of interventions employed by their teams. However, by talking to services managers, we obtained an overview of all the interventions used in the participating services. Current practice is constantly changing and evolving so, as McLeod & Baker (2004) note, the study only provides a snapshot of practice at the time.

2. Conclusions

This component of the Better Communication Research Programme was the preliminary step in a programme of work to explore the evidence basis of current practice. This study provided information about the kinds of categories of interventions that are in use by services. Interventions identified in this study were used in the next stage of the programme of work which carried out a survey to examine the distribution of the interventions and to identify patterns of usage with different age groups and types of SLCN (Roulstone et al., in press). The final stage of this component of the BCRP examines the evidence for the interventions used in current practice (Law et al., in press). Even where there is evidence to support the effectiveness of particular interventions, it is important to bear in mind that those interventions may have been adapted in practice. Therefore evaluations to judge the impact of an intervention locally would be advised.

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References

Bercow, J. (2008) *A review of services for children and young people (0-19) with speech, language and communication needs*. Nottingham: DCSF .

Bunning K (2004) *Speech and language therapy intervention: frameworks and processes*. London: Whurr.

Byng S and Black S (1995) What makes a therapy? Some parameters of therapeutic intervention in aphasia. *European Journal of Disorders of Communication* 30(3): 303-316.

Department for Children Schools and Families (2008) *Better Communication. An Action plan to improve services for children and young people with speech, language and communication needs*. Department for Children, Schools and Families. Crown Copyright.

Department for Education and Employment (2001) *Code of Practice for Special Educational Needs*. London: HM Stationery Office.

Department for Education and Skills (2003) *Every Child Matters*. London: The Stationery Office.

Department of Health. (2010). The NHS Outcomes Framework 2011/12. Crown Copyright.

Dollaghan CA (2007) *The Handbook for evidence-based practice in communication disorders*. London: Paul H Brookes Publishing Co.

Dockrell J and Messer D (1999) *Children's language and communication difficulties: understanding, identification and intervention*. London: Continuum.

Fuller A (2010) Speech and language therapy in Sure Start Local Programmes: a survey-based analysis of practice and innovation. *International Journal of Language and Communication Disorders* 45: 182-203.

Joffe, V. & Pring, T. (2008). Children with phonological problems: a survey of clinical practice. *International Journal of Language and Communication Disorders*. 43(2) 154-164.

Jones M, Onslow M, Packman A, Williams S, Ormond T, Schwarz T, and Gebski V. (2005) Randomised controlled trial of the Lidcombe Programme of early stuttering intervention. *British Medical Journal* 331: 659-661.

Lattermann C, Euler HA and Neumann K (2008) A randomized control trial to investigate the impact of the Lidcombe Program on early stuttering in German-speaking preschoolers. *Journal of Fluency Disorders* 33:52-65.

Law J, Boyle J, Harris F, Harkness A and Nye C (1998) Screening for Speech and Language Delay: A Systematic Review of the Literature, *Health Technology Assessment* 2(9).

Law J, Campbell C, Roulstone S, Adams C, and Boyle J (2007) Mapping practice onto theory: the speech and language practitioner's construction of receptive language impairment. *International Journal of Language and Communication Disorders* 43(3):245-263.

Law, J., Lee, W., Roulstone, S., Wren, Y., Zeng, B. & Lindsay, G. (in press). "What Works" Interventions for children and young people with speech, language and communication needs. DfE Research Report.

Lindsay G, Soloff N, Law J, Band S, Peacey N, Gascoigne M and Radford J (2002) Speech and language therapy services to education in England and Wales. *International Journal of Language and Communication Disorder*, 37(3): 273-288.

Lindsay G, Dockrell JE, Law J, Roulstone S. and Vignoles A (2010) *Better Communication Research Programme: 1st interim report* Research Report DFE-RR070. London: Department for Education.

Lindsay G, Dockrell JE, Mackie C and Letchford B (2005a) The role of specialist provision for children with specific speech and language difficulties in England and Wales: A model for inclusion? *Journal of Research in Special Educational Needs* 5: 88-96.

Lindsay G, Dockrell JE, Mackie C, and Letchford B (2005b) Local education authorities' approaches to provision for children with specific speech and language difficulties in England and Wales. *European Journal of Special Needs Education* 20: 329-345.

Malcomess K (2005) The Care Aims Model. In: Anderson C and van der Gaag, A (eds) *Speech and Language Therapy: Issues in Professional Practice*. London: Whurr.

McCauley RJ and Fey ME (2006) *Treatment of language disorders in children*. London: Paul Brookes Publishing Co.

McLeod, S. and Baker, E., (2004). Current clinical practice for children with speech impairment. In B. E. Murdoch, J. Goozee, B.-M. Whelan and K. Docking (eds), *26th World Congress of the International Association of Logopedics and Phoniatrics*.

Pawson R (2006) *Evidence-based policy: a realist perspective*. London: Sage Publications.

Pickstone C, Goldbart J, Marshall J, Rees A and Roulstone S (2009) A systematic review of environmental interventions to improve child language outcomes for children with or at risk of primary language impairment. *Journal of Research in Special Educational Needs* 9(2): 66-79.

Roulstone, S., Wren., Bakopoulou,, I., Goolad, S. & Lindsay, G. (in press). *Exploring interventions for children and young people with speech, language and communication needs: a study of practice*. DfE Research report.

Rousseau I, Packman A, Onslow M, Dredge R, and Harrison E (2002) Australian speech pathologists¹ use of the Lidcombe Program of early stuttering intervention. *ACQuiring Knowledge in Speech, Language andHearing* 4: 67-71.

Shenker R, Hayhow R, Kingston M, and Lawlor D. (2005) Evaluation of clinician¹s attitudes regarding treatment of stuttering following participation in the Lidcombe Program clinician training workshops. Paper presented at the 7th Oxford Dysfluency Conference, Oxford, UK.

Appendix I Outcomes targeted by intervention packages, activities and approaches.

Outcomes	Intervention packages	Intervention activities	Principles and approaches
A. Communication:			
Social skills	Talkabout, Hanen, BLAST, Talking Partners, Social Use Language Programme, Socially Speaking, Circle of Friends, Social Stories,		
Nonverbal communication	Intensive Interaction, Time to Talk,		
Initiation	Picture Exchange Communication System		
Sharing information	Social Stories		
Inference/verbal reasoning	Language for Thinking		
Attention and listening	Spirals, Talking Partners, BLAST,	barrier games, auditory memory activities, auditory discrimination activities, cued articulation	
Use and understand English (deaf/hearing impaired population)	Cued Speech		
Provide a means of communication			signing, British Sign Language, Alternative and Augmentative Communication, total communication
Parent-child interaction patterns			Parent Child Interaction

B. Language:			
Understanding of language	BLAST, Derbyshire Language Scheme, Visualize and Verbalize,		visual approaches to support language, symbols, chunking, repetition, forced alternatives, reduced distractions, use of key words, providing feedback
Expressive language structure	Becky Shanks Narrative Pack, Colourful Semantics, Socially Speaking, Talking Partners, Hanen, Derbyshire Language Scheme,		language rich environment, modelling, extending, repetition, reducing questions, use of key words, commenting
Range of sentence elements	Colourful Semantics		
Narrative skills	Becky Shanks Narrative Pack		
Vocabulary		narrative therapy, extending, repetition, forced alternatives, use of key words	
Fluency of language production		narratives	
Specificity of language		barrier games	
Concept knowledge		auditory memory activities	use of symbols
Word finding			chunking
Recall of information			use of symbols
C. Speech sound system:			
Intelligibility	Nuffield Dyspraxia Programme		
Phonological awareness		phonological awareness and rhyme awareness activities, minimal pair discrimination	

Metaphonological skills	Metaphon, BLAST,		
Change in speech sound system	Metaphon, Speech Link		
Consistency of speech production	Core Vocabulary		
Oro-motor skills	Bobath		
Speech sounds in isolation	Metaphon,	traditional articulation	
Speech sounds in words and sentences		minimal pair production, minimal pair discrimination, auditory bombardment, traditional articulation	
Identification of speech sounds		cued articulation, auditory discrimination	
Discrimination between similar words		auditory discrimination	
D. Fluency:			
Speak fluently	Lidcombe		
Awareness of fluency	Lidcombe		
E. Other:			
Confidence	PEEP (Peers Early Education Partnership), Socially Speaking, Circle of Friends, Signalong		commenting, visual approaches, visual timetable
Self esteem	PEEP , Socially Speaking, Circle of Friends, Signalong		
Independence	Signalong, TEACCH		providing feedback, waiting for response, reducing questions, task management boards, workstations, use of symbols
Behaviour	Applied Behaviour Analysis,		

	Social Stories, Circle of Friends, TEACCH		
Relationships	Signalong, Circle of Friends, PEEP		
Inclusion	Circle of Friends		
Enjoyment of communication	Lidcombe		
Access to the curriculum	Spirals		chunking, differentiating the curriculum
Opportunities to communicate			creating a language rich environment
Self-monitoring/self-awareness	Lidcombe, Talkabout,	barrier games, increasing awareness of errors, providing feedback	
Parent skill/awareness	Hanen, Spirals, PEEP (Peers Early Education Partnership), Lidcombe,		Parent Child Interaction
Teacher/teaching assistant skill/awareness	Speech Link		
Literacy	Colourful Semantics, PEEP (Peers Early Education Partnership), Hanen, Picture Exchange Communication System, Visualise and Verbalise	phonological awareness activities, cued articulation	
Auditory memory/recall		auditory memory activities	

Box 1. Universal, targeted and specialist – the view of one practitioner

Universal: open and available to all;

Targeted: pupils who have additional needs who need additional intervention that would map onto school action*, targeted provision might involve across school provision;

Specialist: pupils with highest level of need requiring external involvement at a specific level rather than just advisory or modelling; it would involve pupil assessment, diagnosis and then delivering.

*action taken by the school in response to a child's needs that is additional or different to those usually provided within a differentiated curriculum

Table 1 Summary of participant sites interviewed

Urban/rural	Interview phase		Participants		
	SLT service	EP service/ Local Authority	SLT	EP	Other local authority personnel
Rural 1	1	1	3	1	2
Inner London	1	2	4	1	
Rural 2	1	1	3	1	1
Rural 3	1	1	5	1	2
Rural 4	1		3		
Urban 1	1	1	2	2	3
Urban 2	1	1	1	1	1
Rural 5	1	1	2	1	1
Rural 6	1	2	4	1	2
Urban 3		1			1
Urban 4	2	2	1	1	1
Urban 5	2		1		
Urban 6	1	1	3	3	1
Urban 7	1		1		
Total number of participants			33	13	15

Table 2. Interventions selected for detailed descriptions in phase 1 interviews

Service group	Communication	Language	Speech
Education	Elective mutism training Visual timetables Kar2ouche Communicate in print Therapeutic story writing Peer mentoring Talking partners Social Use of Language Programme Communication Opportunity Groups	Early reading programme Language for learning Spirals Development of a DVD Visualise and verbalise Language groups Success for all Specialist groups	Speech link Jolly phonics
SLT	Total communication Chatter matters groups Reluctant speakers Communicative aspects of learning and life Adult child interaction Communication Friendly environments Picture Exchange System Makaton	Parent child interaction Language groups Derbyshire Language Scheme Hanen Building blocks Ready Steady Play groups Colourful semantics The speech and language resource file Listening groups Narrative therapy packs	Nuffield Phonological contrast therapy Lidcombe program Parent workshops to improve phonological skills; early sounds groups Locally developed toolkit Phonological care pathways Traditional phonology intervention

Table 3. Examples of interventions identified by participants

Category of intervention	Explanation of category	Examples
Programmes	a package of activities, arranged in a hierarchical structure, sometimes a published package or reported in a journal	Programme of Phonological Awareness Training, Social Stories, Colourful Semantics, Living Language
Intervention Activities	a discrete activity targeting a specific skill or deficit.	Auditory memory activities, barrier games, narrative therapy,
Principles or Approaches to Intervention	techniques or actions or styles	Extending, forced alternatives, reducing distractions
Service Developed Programmes	Locally developed, sometimes adapted from published programmes, a novel combination of activities, or delivered in a mode particularly suited to local needs.	Talk to your Bump, package for secondary schools, Two-time group
Resources	resource names used as shorthand, sometimes referring to an area of language (eg, narrative) or to an approach (eg, visual approaches).	Becky Shanks narrative packs, Black Sheep Press, Language Master
Training	targeting parents or other practitioners, to skill them to deliver interventions.	Elklan, Early Bird
Models or Theories of Intervention	theories underpinning interventions.	Personal Construct theory, Stackhouse and Wells Psycholinguistic framework
Targets of Intervention	child's speech, language and communication, underpinning cognitive and processing skills or broader psychosocial aspects of interaction.	Improving phonological skills, reducing anxiety about speaking, listening skills