



'What Works': Interventions for children and young people with speech, language and communication needs

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This research report was commissioned before the new UK Government took office on 11 May 2010. As a result the content may not reflect current Government policy and may make reference to the Department for Children, Schools and Families (DCSF) which has now been replaced by the Department for Education (DfE).

The views expressed in this report are the authors' and do not necessarily reflect those of the Department for Education.

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TECHNICAL ANNEX: INTERVENTIONS FOR CHILDREN WITH SPEECH, LANGUAGE AND COMMUNICATION NEEDS

See the separate Technical Annex for the reviews of the interventions for children, with speech, language and communication needs.

EXECUTIVE SUMMARY

Background

The Better Communication Research Programme (BCRP) was commissioned as part of the Better Communication Action Plan¹, the government's response to the Bercow review of services for children and young people with speech, language and communication needs². This recommended a programme of research 'to enhance the evidence base and inform delivery of better outcomes for children and young people' (p.50). This is one of 10 publications reporting the results from individual BCRP projects. These contribute to a series of four thematic reports and the main report on the BCRP overall in which we integrate findings and present implications for practice, research and policy from the BCRP as a whole (see Appendix 1 for full details³).

The *"What Works?" Interventions for children and young people with speech, language and communication needs* project was one part of the BCRP.

Parents and professionals want the best for children with speech, language and communication needs (SLCN). For this reason it is important that we find out what are the most useful ways of helping the children reach their communication potential. This report from the Better Communication Research Programme draws together the relevant evidence about the effectiveness of such interventions. We asked experienced practitioners what they most commonly use for children with SLCN⁴, examined the research literature and drew both strands together to summarise the best evidence. To help commissioners, practitioners and parents make their own judgements about the strength of the evidence for a given programme in their own contexts we also provide a framework for those wishing to assess new interventions as they are developed.

¹ https://www.education.gov.uk/publications/eOrderingDownload/Better_Communication.pdf

² Bercow, J. (2008). *The Bercow Report: A review of services for children and young people (0-19) with speech, language and communication needs*. Nottingham: DCSF.
<https://www.education.gov.uk/publications/eOrderingDownload/Bercow-Report.pdf>

³ Reports are accessible through the DfE's research site
<http://www.education.gov.uk/researchandstatistics/research>

⁴ Roulstone, S., Wren, Y., Bakopoulou, I., Goodlad, S., & Lindsay, G. (2012). *Exploring interventions for children and young people with speech, language and communication needs: A study of practice*. London: DfE.

Key findings

- We identified 57 interventions either currently in use or published in the research literature. We also identified three other interventions which we have called “Up and coming” because they are under development and there is insufficient evidence to judge their value.
- Of the 57 that we have identified 3 (5%) were found to have the strong level of evidence, 32 (56%) had moderate evidence and 22 (39%) had indicative evidence.
- Most interventions focus on work with preschool and primary school children, although I CAN secondary talk and the ELCISS programme in the up and coming section are notable exceptions.
- Seventeen (30%) of the interventions were specifically relevant for improving a child’s speech, 22 (39%) targeted language, and the remainder were aimed at a combination of speech, language, communication, and complex needs.

Detailed findings

- The interventions described are broadly classified into three levels, reflecting the way that services are currently delivered in the UK: These are referred to as “universal”, “targeted” and “specialist” (also known as Wave 1, Wave 2 and Wave 3).
 - Universal is generic and available to all children,
 - Targeted is used for the provision of services to specific subgroups of children who have been identified as being in need and who the services anticipate will respond to the intervention concerned.
 - Specialist is reserved for children whose speech, language or communication need has persisted despite earlier intervention and support or who need specialist approaches to address their SLCN.
- Of the interventions five were wave 1 interventions, 13 were clearly wave 2 and 16 wave 3.
- The remainder we considered likely to be used across waves, adapted to meet the needs of individual children.
- There is a sound emerging evidence base with relative strengths in some areas. There have been too few large scale intervention studies to draw firm conclusions about how services should be delivered but there is plenty of positive evidence about individual techniques. There are many areas where larger effectiveness studies would be warranted.

Implications

A number of strong messages have emerged as we have developed this resource.

1. There are many examples of individual interventions developed by well informed and highly committed practitioners but relatively few intervention studies. Where such studies are undertaken they tend to be relatively small scale and this can make it difficult to generalise from one context to another. There is a need for well designed comparisons of existing interventions especially in relation to their impact on the child's performance in school. These studies should be large enough to give confidence that the results will hold in different populations.
2. The fact that the evidence is not especially strong in some areas does not mean those interventions are ineffective or lack practical value. It simply means that we don't know enough yet. It is important that those developing new interventions seek to evaluate them carefully and share the results with the practitioners who use them and with those who develop services for children with SLCN.
3. To assist in this process it would be helpful to develop a key set of outcomes to increase the comparability of studies.
4. It would be helpful to see evaluations of interventions developed within the context of existing service provision. Results of even well conducted intervention studies which are conducted under "optimal" circumstances may be difficult to translate into more general practice unless it is clear how they should be implemented. This requires *efficacy* trials to examine whether an interventions can work in "optimal" conditions and *effectiveness* studies to examine whether the intervention will work under normal service delivery conditions
5. Workforce development across health, education and voluntary sectors is key to delivery of most interventions. This will affect their adoption and implementation, their impact on children and young people and ultimately their sustainability.
6. There will always be a place for new interventions developed in response to the specific needs of children with SLCN or to new theoretical developments but these must be carefully developed and evaluated.

Next steps

The Communication Trust, which brings together over 40 voluntary and community sector organisations with expertise in children's speech, language and communication, will be disseminating this report widely as part of its work. The Trust will, as part of a consultation it is carrying out over 2012-2013, be seeking views on the interventions in the report and seeking to identify more interventions as they develop. This will ultimately further enhance

the evidence base available for those working with children with SLCN. An online tool to support this process and to house the content of this report will be launched later in 2012 by the Trust. Further information will be found at The Communication Trust's website

<http://www.thecommunicationtrust.org.uk/>

1. BACKGROUND

The Better Communication Research Programme (BCRP) was commissioned as part of the Better Communication Action Plan⁵, the government's response to the Bercow review of services for children and young people with speech, language and communication needs⁶. This had recommended a programme of research 'to enhance the evidence base and inform delivery of better outcomes for children and young people' (p.50). This is one of 10 publications reporting the results from individual BCRP projects. These contribute to a series of four thematic reports and the main report on the BCRP overall in which we integrate findings and present implications for practice, research and policy from the BCRP as a whole (see Appendix 1 for full details⁷).

Key to the development of evidence based interventions⁸ for children with speech, language and communication needs (SLCN) is an awareness of what are already being used. It is then a matter of establishing the available evidence – what works for whom and where? We also need to know which interventions are for use by specialists (speech and language therapists, educational psychologists and the like) and which can be readily introduced to schools, and early years provision for use by early years or school staff, with all children or with specific groups of children with particular difficulties. This resource draws together the evidence in what we hope is an accessible format for practitioners, parents and policy makers. A glossary of key terms is provided at the end of the report.

⁵ https://www.education.gov.uk/publications/eOrderingDownload/Better_Communication.pdf

⁶ Bercow, J. (2008). *The Bercow Report: A review of services for children and young people (0-19) with speech, language and communication needs*. Nottingham: DCSF.
<https://www.education.gov.uk/publications/eOrderingDownload/Bercow-Report.pdf>

⁷ Reports are accessible through the DfE's research site
<http://www.education.gov.uk/researchandstatistics/research>

⁸ Throughout this document we have used the term "intervention" to refer to a set of activities designed to improve a child's speech and language needs which is above and beyond what is commonly available for that child.

2. WHAT WE HAVE DONE

One theme of the Better Communication Research Programme (BCRP) was identifying the “best evidence” for oral language programmes. To do this we have used four sources. We examined the intervention literature related to children with primary speech and language difficulties. Specifically we looked for interventions identified from randomised controlled trials included in the most recent version of the relevant Cochrane Review of interventions for children with speech or language delay/disorder⁹. We have surveyed speech and language therapists in England and Wales and simply asked them what programmes they commonly use. The data from this survey has been reported in greater detail in a separate BCRP report². We also asked the Communication Trust¹⁰ to tell us about oral language interventions which are currently in use in schools in England and Wales. Finally, we checked the list we had produced with an eminent educational psychologist who made additional suggestions.

We have then grouped the interventions into this What Works for SLCN document. The intention is that this will be developed into a web based resource by the Communication Trust and sustained thereafter as a website for use by schools, parents, speech and language therapists, and others. The “what works” website will be in a pilot phase for its first year. During this time, we will consult with professional groups and practitioners to ensure the website meets their needs. In addition, we will work to add further examples of interventions which meet the necessary evidence criteria. The intention is that the website will be an interactive resource that practitioners use to identify evidence based interventions that will support their practice. There will be a mechanism for people to comment or make suggestions in relation to both the content and the format in the first year. Following this pilot period, the website will be launched in its final iteration, with the aim that we can add new interventions or evidence as they become available.

⁹ Law J, Garrett Z, & Nye C. (2003). Speech and language therapy interventions for children with primary speech and language delay or disorder (Cochrane Review). In: *Reviews* 2003, Issue 3. Art. No.: CD004110. DOI: 10.1002/14651858.CD004110

¹⁰ The Communication Trust is funded by the Department for Education and other funders and was founded by BT, AFASIC, the Council for Disabled Children and I CAN. I CAN is hosting the Trust. The purpose of the Trust is to raise awareness of the importance of speech, language and communication across the children’s workforce and enable practitioners to access the best training and expertise to support all children’s communication needs. <http://www.thecommunicationtrust.org.uk/>

It is important to stress that we are not including interventions explicitly targeting literacy because these have already been covered elsewhere¹¹. Yet a number of the interventions include aspects of speech or language, for example phonological awareness, which would also be included in literacy interventions. There are also successful and well evidenced literacy interventions that include an oral language component. We have included interventions designed for use with children who are autistic or who have complex needs in so far as they focussed on the communication aspects of the child's needs. We have excluded interventions developed in languages other than English on the grounds that they would be unlikely to readily translate to the UK context, but have included interventions developed in the US, Australia and Canada.

In describing the interventions we have opted not to provide a single metric for the interventions, such as the ratio gain advocated by Gregg in his review of literacy interventions⁴, primarily because the interventions described here cover a wide range of different types of behavioural intervention at different ages with different outcomes and the use of a single metric could suggest, incorrectly in our view, that they are directly comparable. Finally, we have not directly considered the issue of dosage and how much of a given intervention should be recommended. This is a complex issue and one that is rarely if ever addressed in the descriptions and even evaluation of the interventions. Practitioners commonly make "rule of thumb" recommendations which have little direct evidence. This issue is dealt with in greater detail in a BCRP "thematic report"¹².

In addition to the interventions which are in the separate Technical Annex, we have added two further sections to this document. In the first we ask the top ten questions which we need to answer when considering the implementation of a new intervention. In the second we go beyond the individual intervention programmes, approaches and techniques (the Hanen Early Language Parenting Programme, the Lidcombe programme for children who stammer etc.) to suggest that we need to consider these in an integrated fashion across services, linking different levels of intervention to cover the whole population. As an example of this approach we have included a case study of work carried out in a single authority in

¹¹ Brookes, G (2007). London. *What works for pupils with literacy difficulties? The effectiveness of intervention schemes*. Sheffield: Department for Education.

<https://www.education.gov.uk/publications/standard/publicationDetail/Page1/RR380>

¹² Law, J., Beecham, J. & Lindsay, G. (2012). *Effectiveness, costing and cost effectiveness of interventions for children and young people with speech, language and communication needs*. London: DfE.

northern England which does just this. In the process of being evaluated, this approach has, we feel, many benefits for those delivering education and speech and language therapy services to children with SLCN. Although evaluated within its own terms, it is sufficiently flexible for other local authorities, school clusters, and speech and language therapy services to group together to choose which specific interventions they consider would be most appropriate to include; and both develop and evaluate them as a whole, rather as single entities.

3. WHAT WE HAVE FOUND

A variety of terms are used in the literature to describe the activities reported here. Interventions represent specific activities designed to enhance oral language or other skills. These would conventionally be over and above what the child would otherwise receive in routine classroom activities. A programme is a term used to describe a formalised intervention which is drawn up in such a way that it has key distinctive features which can be replicated.

The interventions described are broadly classified into three levels, reflecting the way that services are currently delivered in the UK. In education these are referred to as “universal”, “targeted” and “specialist” (also known as ‘waves’). Universal is generic and available to all children, Targeted is used for the provision of services to specific subgroups of children who have been identified as being in need and who the services anticipate will respond to the intervention concerned. Specialist is reserved for children whose speech, language or communication need has persisted despite earlier intervention and support or who need specialist approaches to address their SLCN.

We identified 57 interventions either currently in use in England or published in the research literature. We also identified two other interventions which we have called “up and coming” because they are under development and there is insufficient evidence to judge their value. Of those that we have identified 3 (5%) were found to have the strong level of evidence, 32 (56%) had moderate evidence and 22 (39%) had indicative evidence. Most interventions focus on work with preschool and primary school children, although I CAN secondary talk and the ELCISS programme in the up and coming section are notable exceptions. Seventeen (30%) of the interventions were specifically relevant for improving a child’s speech. Twenty two (39%) targeted language, and the remainder were aimed at a combination of speech, language, communication, and complex needs.

Five of the interventions were Universal interventions, 13 were clearly Targeted and 16 Specialist. The remainder we considered likely to be used across levels, adapted to meet the needs of individual children.

It is important to recognise that any such document is necessarily a snapshot of what is available in current use at a given point. Inevitably the use of interventions will wax and wane, new activities, approaches and programmes coming in as old ones fade from use or are dropped by publishers. Thus some, like Living Language (Locke 1985), have been in use

for many years and continue to be cited by practitioners even though the materials are out of print or superseded by new programmes such as Teaching Talking (Locke & Beech 2005). As new interventions are introduced there is often, although not always, a considerable period of time before they are evaluated. This obviously may give a potential advantage in evidence terms to those that have been around for longer.

A number of interventions were identified by speech and language therapists in the survey for which we were not able to find any evidence. These are not included in the present report but they can be found in another BCRP report².

We have developed a template to help examine each intervention in a consistent manner. In each case we provide a brief description of the intervention, its aims and objectives, the recommended method of delivery, what form it comes in, for example, a manual, specific materials etc. and the level of evidence that we could find for its effectiveness. These various categories are subdivided as follows:-

Description, aims and objectives includes

- the provenance of the intervention programme
- its aims and target age group,
- key publications associated with the intervention

Delivery includes

- how it is intended to be delivered
- where it is delivered
- who delivers it

Level of evidence

This is the extent to which there are data available to support a specific intervention. Such data need to be publicly available in the published literature or on websites. We have designated three levels as follows

- **Strong** – this includes at least one positive systematic review plus subsequent trials as available
- **Moderate** this would include single randomised controlled studies or quasi-experimental studies
- **Indicative** - this means good face validity but limited research evidence ie. case studies or 'before and after' studies).

It is important to note that we are aiming here to establish that the intervention had a direct effect on the children concerned. We are not primarily interested in whether practitioners

expressed satisfaction with it or like the materials. We have also included references about the intervention and relevant evaluations in the public domain. We have not included evidence from studies which have used generic approaches, called for example “speech and language therapy”, unless it was possible to extract specifics about the intervention itself.

To make the resource easy to navigate we have added a simple set of descriptors on the front page of each programme as follows:-

Target group

- Speech
- Language
- Communication
- Complex needs

We have kept these as generic as possible at this stage to allow the reader to draw comparisons between programmes and approaches in the same category.

Age range

- Pre-school
- Primary School
- Secondary School

We recognise that the programmes, approaches and techniques may be used across different age groups but here we have identified the age range which the authors have specified for their interventions.

Focus of intervention

The different types of intervention offered to children with SLCN are described differently in health and education. These are laid out with brief explanations in Table 1 below.

Table 1. Descriptive framework for levels of service delivery¹³

Terminology used in health services	Type of intervention	Level of need
Universal	Everyday practice in settings and classrooms that develops communication skills	All children
Targeted	Small group additional intervention or 1-1 help from a trained volunteer	Just below age-related expectations- in SLCN terms, language delay usually as a result of social factors
Targeted	Individualised and frequent intervention with a teaching assistant trained and supported by SLT	Struggling- in SLCN terms, has moderate speech, language or communication difficulties , or has SLCN associated with another type of SEN such as moderate or severe learning difficulties
Specialist	Intensive intervention on an individual basis with an SLT , as part of team around the child approach	Highest level of difficulty Child has persistent speech, language or communication difficulties

We consider these to be reasonably self-explanatory although it should be recognised that those developing the interventions do not necessarily describe their programmes in these terms and the reader is left to infer aspects of the method of service delivery, for example whether it is a Targeted or Specialist intervention. Similarly a programme may have been developed to use by specialist educators, for example milieu teaching/therapy, but there is no reason why it could not be used by well supported teachers in mainstream classes. It is also the case that an intervention developed for use with preschool children just starting to speak could equally well be used with much older children at a similar language level, perhaps with general developmental difficulties. For head teachers looking to commission services, guidance from specialists, such as speech and language therapists would be

¹³ With thanks to Jean Gross and Marie Gascoigne (personal communication)

useful to determine which approaches or combination of approaches would best suit the needs of their pupils.

Delivered by

- Specialist (speech and language therapist, psychologist, specialist teacher)
- Classroom teacher
- Teaching/speech and language therapy assistant

These distinctions are sensitive to the context in which they are delivered and there is limited evidence around which interventions are most cost effective¹⁴. However, we know from some of the literature that the better supported the assistant, the more cost effective the approach. See for example the Strathclyde Language Intervention Programme (#47), and the Oral Language Programme and the Phonology with Reading (P + R) (#39) programmes, which have both attempted to address this issue directly.

Format

- Manual
- Approach
- Technique

Published and accessible **manual**. This allows the practitioner to identify both the need in the child concerned and corresponding activities aimed at reducing that need. We have included computer programmes in this category where appropriate.

Approach described in the literature but no manual available

Specific **technique** which could be part of a wider intervention or the focus of the intervention itself

On a practical level, the intervention needs to be well described so that others wishing to use it have enough information to carry it out as intended, although we need to bear in mind that it may be difficult to replicate intervention studies without paying very careful attention to the context.

¹⁴ Law, J, Zeng, B. Lindsay, G. & Beecham, J. (2011). The cost-effectiveness of interventions for children with Speech Language and Communication Needs (SLCN): A review using the Drummond and Jefferson (1996) "Referee's Checklist" *The International Journal of Language and Communication Disorders*.47, 1-11.

Evidence rating

And, finally, we report the evidence rating as described above. It is important to distinguish between the level of the evidence and whether an intervention can be said to work or not. These are not necessarily the same thing. While one might wish the best evaluated interventions to be the ones that are recommended because they are most effective, the reality can be quite different. For example, the better quality the evaluation and thus the higher the evidence rating, the more difficult it is to make such a recommendation. So there can be strong evidence that one intervention should not be adopted – negative evidence – just as there can be weak evidence that a second intervention should be considered. So care should be taken not to assume that good evidence is necessarily equated with a useful intervention and vice versa. The obvious example here are the computerised interventions which held much promise and have been evaluated in a variety of circumstances but have not been shown to be effective in promoting oral language skills.

Having reviewed the various interventions identified, there were some which we considered may have been developed to a sufficient level to be made available to those working in the field. However, on closer scrutiny it was not possible to decide about inclusion because, while we knew that evaluations were underway, too little evidence was available to enable us to make a judgement about their value. We have put these in an “up and coming” category and would hope that these would be more formally evaluated in the years to come. Similarly there are examples such as Language 4 Learning, a recent programme currently being trialled in Melbourne, Australia, where the results of the study will feed into the evidence base and potentially the What Works for SLCN resource as they become available.

It is important to recognise that the brief outlines provided in the separate Technical Annex are snapshots taken at the time that the present document was put together. We would anticipate that the pattern of evidence will change over time, with more evidence becoming available for some interventions; and also some interventions becoming more widely used, others less so.

3.1 Ten criteria to help evaluate interventions

To support services and professionals in making evidence based decisions we have identified ten critical factors for commissioners and practitioners to consider when looking at new interventions or when developing their own. Obviously services will decide what weight to put on each factor but critically important is that they are all considered before those providing services decide to change current practice by introducing a new intervention. We have tried to use these criteria for all the interventions included below where the information is available and we will continue to use these criteria to decide whether new resources should be added to the website, both to ensure they are robust enough to be included and to ensure a systematic and transparent approach to additional content.

1. Does the intervention have reasonable theoretical underpinning given the current state of knowledge in the relevant area?
2. Does the intervention have good face validity – does it make sense, is it easy to follow etc.?
3. Is the intervention “manualised“, or presented in such a way that it would be possible for a service to adopt it without adaptation?
4. Is the intervention feasible in the sense that it could be introduced within budget, given available resources and materials and time available?
5. Is there formal training involved and a procedure to be followed or is it principally a set of materials to be freely used?
6. Has the intervention been formally evaluated and if so how? We commonly use six levels of intervention evidence as follows:
 - a. Well conducted systematic reviews of randomised controlled trials
 - b. Individual well conducted randomised controlled trials
 - c. Quasi-experimental studies with matched groups receiving and not receiving the intervention in question
 - d. Experimental single subject designs which demonstrate effective change in individual children relative to a “control” or untreated period.

- e. “Before and after studies” – do the children show progress over time relative to the standard score of a specific language or related measure? In other words it is possible to see change relative to what we know about the children’s development anyway.
- f. Descriptive studies. These describe the intervention but provide no data which would allow the reader to make a judgement as to whether the intervention should or should not be introduced.

Note that these map on the three levels of evidence described above.

Key to the evaluation is the design of the study and the choice of outcome. Many of the studies that we have described use a very wide range of different standardised speech and language measures. It would be helpful if similar measures were used to allow comparison and if greater use was made of educational outcomes so that the interventions in question can readily map across from the clinical/health context to the school context. For example, where a comparable study has included a specific assessment of language or social communication skills the same measures could be used by others carrying out their own evaluation making it possible to compare the results.

It would also be helpful if the measures used included outcomes considered to be of value by parents and children, an issue picked up in the associated BCRP technical report on ‘The Preferred Outcomes of Children with SLCN and their parents’¹⁵. It would also be useful to know how much the children progressed relative to both their peers in the study and to other children in other studies or in the population as a whole. So, for example, if most children in an intervention for a particular kind of difficulty improve by six months over a three months period is this true for children receiving an intervention in which I am interested?

7. Who developed the intervention and is it commercially available?

Evaluations are commonly separated into first generation and second generation studies. In the former the person who developed the intervention then evaluates it. In the latter another group adopts the intervention, evaluating it independently. When

¹⁵ Roulstone, S., Coad, J., Ayre, A., Hambley, H., & Lindsay, G. (2012). *The preferred outcomes of children with speech, language and communication needs and their parents*. London: DfE.

examining any intervention the second approach is preferable over the first because it would be considered more objective. It is commonly assumed that studies carried out by the teams that developed them tend to obtain better results than second generation studies.

8. Has it been shown that it is possible to assess “treatment fidelity” – that is, the capacity of those who use the programme to stick to what is expected in the manual? There is always a tension between adopting a well developed intervention and following the guidance in the manuals as opposed to tailoring a given intervention to the individual and the population which a teacher or therapist is primarily concerned. Again experience reported in greater detail in the BCRP technical report ‘Implementing Interventions’² tells us that both teachers and therapists are very creative in the use of programmes and freely adapt them to the needs of the children. This is, of course, the nature of the type of flexible approach that many children with SLCN need but it can raise concerns about whether it is possible to generalise the interpretation from the original development work. Many interventions are, of course, flexible in the way that they are presented but care has to be taken that in adapting an intervention the programme is not greatly changed, for example by reducing the recommended time children receive it.
9. Do we know how children were allocated to the intervention and control groups? If we don’t is there likely to have been a bias which may affect the results? So, if one group comes from one classroom and one from another, do we know that the intakes for the respective classes are the same and that the teachers and support staff are effectively the same?
10. Do we know what happened to all the children who started in a study? Did those who start all complete the intervention? Who dropped out and why?

There are all sorts of reasons why children drop out of studies but do we know that the ones who dropped out are the same in terms of age, gender, language level etc as those who remained in the study. If we don’t, it is quite possible that the difference may affect the interpretation of the results.

3.2 A case study of an integrated community approach to intervention:

“Talk of the Town”

The evaluation of individual programmes for children with SLCN is important in its own right because it informs the choice of such programmes for individual children or to address specific difficulties that they may be experiencing. Yet it is also important that these programmes do not function in isolation but fit together into a coherent evidence based model of service delivery. For this reason we now illustrate how this might be done drawing on an example of service wide provision currently being carried out in the north west of England.

Talk of the Town (TOTT) is an integrated, community led approach to supporting speech, language and communication in children from 0-18 years which focuses on a small community in Wythenshawe, South Manchester. It aims to facilitate early identification, encourage joined up working and improve outcomes for children with speech, language and communication needs (SLCN). A project was set up to examine the introduction of TOTT and this began in May 2011, funded as part of the *Hello* campaign by the Department of Education and ran through until March 2012. Senior leaders of a federation of schools involved in TOTT were keen to take a long term view of this issue and emphasised its sustainability. The programme has not been formally evaluated at this stage but here one of the authors of the present report (WL) reflects on the experience of introducing TOTT, its strengths, its limitations especially around earlier identification, joint working and examples of effective practice and clear outcomes. We include it in this report as a case study to illustrate how services might usefully provide a population approach to evidence based service delivery. The evidence of the elements included in TOTT is included in the interventions reviewed in the separate Technical Annex. In this illustration the term “tier” rather than Universal/Targeted/Specialist is used (see the Descriptive framework for levels of service delivery above).

The model

In Figure 3.1 we provide an approach to conceptualising TOTT.

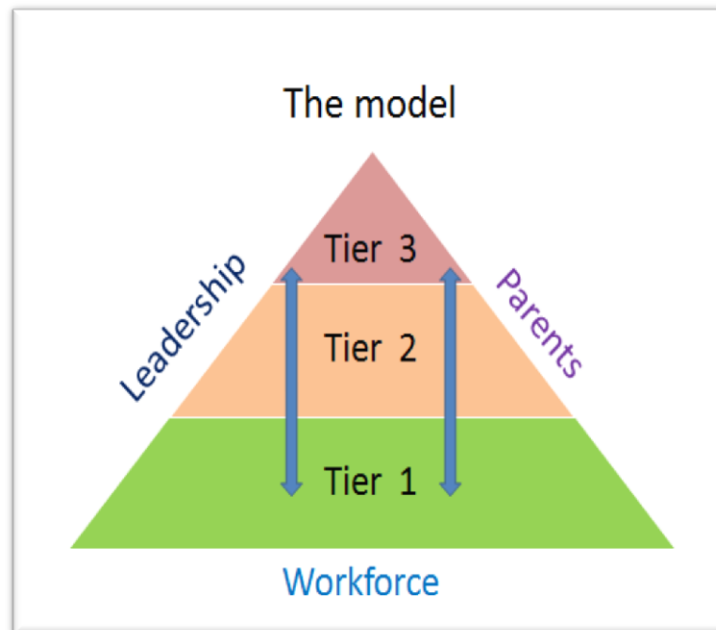


Figure 3.1 A model for providing an integrated community approach to service delivery for children with SLCN

The project is based on the premise that the factors in the pyramid in Figure 3.1 will all be needed to support identification and better outcomes for children. Support from leadership is fundamental to ensure buy-in from all staff and long term planning. Parents are involved so that they can take an active role in supporting the speech, language and communication of their children. Workforce development is key as, without this, children may not be identified and will not receive timely, well delivered interventions. At each of the tiers well evidenced interventions to support children's speech, language and communication are included.

The principles

The following key principles are used as a guide supporting the work of the project

- A focus on prevention and early identification (at whatever phase)
- Service coordination (shared vision) and strategic long term planning
- Evidence based models, approaches and interventions are used wherever possible
- Embedded strategies, building on current practice and provision, are fundamental and would include:
 - Communication supportive environment
 - Appropriate and timely interventions at:
 - Tier 1

- Tier 2
- Tier 3
- Tracking, monitoring, evaluation
- Planning and implementation of systematic workforce development
- Inclusion and partnership with parents, children and families

Joined up working

Fundamental to the success of the project is the collaboration between local and national partners. Time is spent listening and working with a wide range of partners, both to build on existing practice and enhance with further support. Partners in the project include:

- Teaching staff and management from the Federation
- The Manchester SLT department
- Early years representatives
- The University of Manchester
- The Schools Network
- The Communication Trust consortium
- The galleries and museums service
- Local children's centres

How it works in practice

The project took baseline measures at the start of the intervention and will be repeating them at the end. These assessments cover:

- The speech, language and communication skills of the children
- Confidence of staff in identifying and supporting SLCN
- Processes and procedures currently in place to identify and support children's speech, language and communication
- Current ways of working together, between agencies, phases, partners and parents

An independent evaluation of the project as a whole is being carried out by an academic team from Manchester University.

Early identification

- Senior leaders have discussed how to ensure measures of speech, language and communication are included more explicitly in routine school data collection, particularly in flagging risk factors for children with SLCN

- In addition, early identification is supported across the age range 3–18, through staff training and a range of tools to enable staff to identify children who are struggling and understand what to do next to help them.

Provision and interventions

A range of interventions have been implemented, where possible, all with a solid evidence base, for example,

- Across all levels, use of a range of visual approaches (see intervention #54 below)

At a universal level

- Elements of “Thinking Together” at the universal level (see intervention # 53 below);
- Audit of practice using the BCRP Communication Supporting Classrooms Observation Tool with guidance on developing best practice¹⁶. Use of Living language vocabulary approaches (see intervention #24 below)
- Use of word wizard approaches to support vocabulary at universal and targeted levels (see intervention #57 below)
- Use of “Talking Time” nursery intervention. (see intervention # 50) below
- Teaching children to listen (see intervention #52 below)

Other strategies have been developed, taking an action research approach, identifying theoretical foundations, current teaching practice and additional strategies or techniques that could be used and evaluating against current knowledge; for example, talk boxes are being used in every classroom to provide teachers with a range of practical hands-on resources to support aspects of speech, language and communication in practice. This approach will be evaluated formally and through school strategies, such as learning walks and learning sets.

At a targeted level

A range of evidence based interventions have been put into place to support the large numbers of children with language delay, for example

- A narrative intervention by Becky Shanks Narrative Intervention (see intervention # 1 below);
- Talk Boost (see intervention #48 below)- A ten-week Targeted intervention to support the speech, language and communication skills of children aged 4-7 years with delayed language;
- Focused stimulation techniques (see intervention #15 below)
- Comprehension monitoring approaches within mainstream classrooms (see intervention #5 below)
- Elements of colourful semantics programme (see intervention #3 below)

¹⁶ Dockrell, J. E., Bakopoulou, I., Law, J., Spencer, S., & Lindsay, G. (2012). *Developing a communication supporting classrooms observation tool*. London: DfE.

- Language for thinking for children in key stage 2 (see intervention #20 below)
- I CAN secondary talk (see intervention #18 below) and
- Vicki Joffe vocabulary enrichment programme (see intervention #58 below)

At a specialist level

- A speech and language therapist supports the programme at all levels, and provides some support for children at the specialist level, in collaboration with the local speech and language therapy team.
- Makaton training for staff to use with pupils with SLCN (see intervention #25 below)
- Psycholinguistic framework to support phonological awareness (see intervention #41 below)
- Support and interventions from members of The Communication Trust's consortium, including AFASIC, British Stammering Association, Symbol, I CAN and Makaton and others have been included.

In addition to the above, collaboration work with local speech and language therapy teams who are working on aspects of speech, using some of the approaches highlighted.

Parents

Desk top research has identified key ways to involve parents, alongside best practice from inside the federation, "piggy backing" on what schools already have in place, such as parents' evenings, transition meetings and stay and play sessions. Following a consultation with parents and to reinforce the main messages around the management of SLCN, key activities were introduced, such as language focused museum trips.

Workforce Development

This is a crucial element of the programme, both in supporting school staff to develop knowledge and skills, giving specific training around particular programmes or techniques and in enhancing the work they are currently doing to support children's speech, language and communication. Workforce development has taken part in whole school training days, through staff meetings where staff reflect on their practice and look at next steps and through coaching and mentoring approaches with specialists. Finally 30 members of staff within the TOTT services have been supported to complete a national qualification in Supporting Children and Young People's Speech Language and Communication.¹⁷

¹⁷ For the first time a qualification (a level 3 award) in Supporting Children and Young People's Speech Language and Communication is available on the qualifications and credits framework (QCF), developed by The Communication Trust, enabling staff to gain a qualification and recognition for skills and knowledge in this area.

4. IMPLICATIONS FOR POLICY, PRACTICE AND RESEARCH

A number of strong messages have emerged as we have developed this resource.

- There are many examples of individual interventions developed by well informed and highly committed practitioners but relatively few intervention studies. Where such studies are undertaken they tend to be relatively small and this can make it difficult to generalise from one context to another. There is a need for well designed, comparisons of existing interventions especially in relation to their impact on the child's performance in school. These studies should be large enough to give confidence that the results will hold in different populations.
- The fact that the evidence is not especially strong in some areas does not mean those interventions are ineffective or lack practical value. It simply means that we don't know enough yet. It is important that those developing new interventions seek to evaluate them carefully and share the results with the practitioners who use them and with those who develop services for children with SLCN.
- To assist in this process it would be helpful to develop a key set of outcomes to increase the comparability of studies.
- It would be helpful to see evaluations of interventions developed within the context of existing service provision. Results of even well conducted intervention studies which are conducted under "optimal" circumstances may be difficult to translate into more general practice unless it is clear how they should be implemented.
- Workforce development across health, education and voluntary sectors is key to delivery of most interventions. This will affect their adoption and implementation, their impact on children and young people and ultimately their sustainability.
- There will always be a place for new interventions developed in response to the specific needs of children with SLCN or to new theoretical developments but these must be carefully developed and evaluated.

5. CONCLUSIONS

The number, range and quality of interventions for improving children's speech and language skills have increased considerably over recent years, giving a greater choice of approaches for those designing and delivering services. The evidence about interventions is varied. In many cases studies of sufficient size have yet to be carried out to provide strong evidence of the effectiveness of particular interventions. That does not mean those interventions are ineffective or lack practical value. It simply means that we don't know enough yet. It is important that those developing new interventions seek to evaluate them carefully and share the results with the practitioners who use them and with those who develop services for children with SLCN.

The Communication Trust, which brings together over 40 voluntary and community sector organisations with expertise in children's speech, language and communication, will be disseminating this report widely as part of its work and seeking to find out about new interventions being developed.

APPENDIX 1 – BCRP REPORTS

All the BCRP reports are available from the BCRP page on the Department for Education's website: <http://www.education.gov.uk/researchandstatistics/research> and also from the BCRP page in the CEDAR, University of Warwick website: <http://www.warwick.ac.uk/go/bettercommunication>

Main report

1. Lindsay, G., Dockrell, J., Law, J., & Roulstone, S. (2012). *Better communication research programme: Improving provision for children and young people with speech, language and communication needs*. London: DfE.

This report presents the main recommendations of the whole Better Communication Research Programme (BCRP). It draws on evidence provided in the thematic and technical reports. This report also considers the overall implications for policy, practice and research, and indeed seeks to bridge the gap between this substantial research programme and the policy and practice agenda.

Interim reports

2. Lindsay, G., Dockrell, J.E., Law, J., Roulstone, S., & Vignoles, A. (2010) *Better communication research programme 1st interim report DfE-RR070*. London: DfE. (70pp). <http://publications.education.gov.uk/eOrderingDownload/DFE-RR070.pdf>

This report presents interim findings from the project that had been underway between January and July 2010; best evidence on interventions; the academic progress of pupils with SLCN; economic effectiveness; the initial phase of the prospective longitudinal study of children and young people with language impairment (LI) and autism spectrum disorder (ASD); and the preferred outcomes of children and young people with SLCN, and of their parents.

3. Lindsay, G., Dockrell, J.E., Law, J., & Roulstone, S. (2011) *Better communication research programme 2nd interim report. DFE-RR 172*. London: DfE. (131pp). <https://www.education.gov.uk/publications/eOrderingDownload/DFE-RR172.pdf>

This report presents interim findings of the project that had been underway between July 2010 – January 2011. Further work is reported from analyses of the national pupil data sets examining development and transitions of pupils with SLCN or ASD between categories of special educational needs, the prospective study, and parents' preferred outcomes (an online survey). In addition, interim reports from new projects include: the initial phase of development of a Communication Supporting Classrooms Tool; a survey of speech and language therapists' practice regarding interventions; a study of language and literacy attainment during the early years through Key Stage 2, examining whether teacher assessment provides a valid measure of children's current and future educational attainment (led by Margaret Snowling and Charles Hulme); two studies of the relationship between SLCN and behaviour, with Victoria Joffe and Gillian Baird respectively; cost effectiveness of interventions; and the setting up of a prospective cohort study of speech and language therapy services for young children who stammer.

Thematic reports

4. Dockrell, J., Ricketts, J. & Lindsay, G. (2012). *Understanding speech, language and communication needs: Profiles of need and provision*. London: DfE.

This thematic report examines the nature of speech language and communication needs and the evidence from BCRP studies that have explained both the nature and needs encompassed by the category and the provision made to meet those needs. This report draws upon six projects (8, 9, 10, 11, 14 and 15).

5. Law, J., Beecham, J. & Lindsay, G. (2012). *Effectiveness, costing and cost effectiveness of interventions for children and young people with speech, language and communication needs*. London: DfE.

This thematic report first considers the nature of evidence based practice in health and education before reviewing the evidence for the effectiveness of interventions for children and young people with SLCN. The report also considers cost effectiveness and how it might be measured before examining the evidence of the cost effectiveness of SLCN interventions. The report draws on projects, 8, 10, 11 and 12.

6. Lindsay, G. & Dockrell, J. (2012). *The relationship between speech, language and communication needs (SLCN) and behavioural, emotional and social difficulties (BESD)*. London: DfE.

This thematic report explores the relationship between SLCN and behavioural, emotional and social difficulties. . We argue that there are different patterns of relationship between SLCN and ASD, and different types of behavioural, emotional and social difficulties. The report draws on the 2nd interim report (report 3) and project reports 9, 11 and 15.

7. Roulstone, S. & Lindsay, G. (2012). *The perspectives of children and young people who have speech, language and communication needs, and their parents*. London: DfE.

The BCRP ensured that the perspectives of parents and children were explored through a number of different projects. This project explores the evidence primarily from projects 9 and 12, drawing on evidence from a series of specific studies of parents' and children's perspectives and also those of the parents in our prospective study.

Technical reports

8. Dockrell, J. E., Bakopoulou, I., Law, J., Spencer, S., & Lindsay, G. (2012). *Developing a communication supporting classroom observation tool*. London: DfE.

This study reports the development of an observational tool to support teachers, SENCOs, speech and language therapists and others to examine the degree to which classrooms support effective communication. The report comprises a review of the evidence base for developing effective communication and an account of the empirical study to develop and determine the technical qualities of the tool.

9. Dockrell, J., Ricketts, J., Palikara, O., Charman, T., & Lindsay, G. (2012). *Profiles of need and provision for children with language impairment and autism spectrum disorders in mainstream schools: A prospective study*. London: DfE.

The prospective study was the most substantial project in the BCRP running throughout the whole period of the research. Focusing on children and young people initially 6-12 years old, we report on the nature of their abilities in language, literacy, behavioural, emotional and social development; the perspectives of the parents; the support provided as examined by classroom observations and specially created questionnaires completed by their teachers and SENCOs.

10. Law, J., Lee, W., Roulstone, S., Wren, Y., Zeng, B., & Lindsay, G. (2012). *“What works”: Interventions for children and young people with speech, language and communication needs*. London: DfE.

This report provides a review of 60 interventions for children and young people with SLCN, all evaluated against 10 criteria. The report will form the basis of a web-based resource to be developed by the Communication Trust for easy access by practitioners and parents.

11. Meschi, E., Mickelwright, J., Vignoles, A., & Lindsay, G. (2012). *The transition between categories of special educational needs of pupils with speech, language and communication needs (SLCN) and autism spectrum disorder (ASD) as they progress through the education system*. London: DfE.

Analyses of the School Census and National Pupil Database are used to examine the transition made by pupils with SLCN or ASD over time and by age. We examine factors that are associated with transition between levels of special educational need (School Action, School Action Plus and Statement) and having no special educational need (non-SEN), including having English as an Additional Language and attainment. We also explore school characteristics associated with different transitions to other categories of SEN.

12. Roulstone, S., Coad, J., Ayre, A., Hambley, H., & Lindsay, G. (2012). *The preferred outcomes of children with speech, language and communication needs and their parents*. London: DfE.

This report provides findings from four different studies addressing the perspectives of children and young people with SLCN, and those of their parents. Data are reported from arts-based participating workshops for children, focus groups and a survey for parents; and a systematic review of quality of life measures for children.

13. Roulstone, S., Wren, Y., Bakopoulou, I., Goodlad, S., & Lindsay, G. (2012). *Exploring interventions for children and young people with speech, language and communication needs: A study of practice*. London: DfE.

As a complementary study to our analysis of the evidence for interventions, we also carried out an interview study of speech and language therapy managers and educational psychology service managers, on the basis of which we conducted a national survey of speech and language therapists to examine prevalence of use of the different approaches.

14. Snowling, M. J., Hulme, C., Bailey, A. M., Stothard, S. E., & Lindsay (2011). *Better communication research project: Language and literacy attainment of pupils during early years and through KS2: Does teacher assessment at five provide a valid measure of children's current and future educational attainments?* DFE-RR172a. London: DfE. <https://www.education.gov.uk/publications/eOrderingDownload/DFE-RR172a.pdf>

We report a study led by Margaret Snowling and Charles Hulme which explored whether teacher assessment and monitoring could be used to identify children with language difficulties in need of early interventions. This study was conducted to inform the Tickell Review of the Early Years Foundation Stage, in particular the proposals for a simplified framework and assessment process.

15. Strand, S., & Lindsay, G. (2012). *Ethnic disproportionality in the identification of speech, language and communication needs (SLCN) and autism spectrum disorders (ASD)*. London: DfE.

This report complements that of Meschi et al (number 11). Using School Census data from four years (2005, 2007, 2009 and 2011) the report examines the issue of ethnic disproportionality (i.e. over- and underrepresentation of pupils from different ethnic groups) with respect to SLCN and ASD.

16. Roulstone, S., Hayhow, R., White, P. & Lindsay, G. (2012). *Prospective cohort study of speech and language therapy services for young children who stammer*.

This prospective cohort study follows children referred to speech and language therapy services because of stammering. The study tracks the children's process through the system and their outcomes.

17. Meschi, E., Vignoles, A., & Lindsay, G. (2010). *An investigation of the attainment and achievement of speech, language and communication needs (SLCN)*. <http://www.warwick.ac.uk/go/bettercommunication>

This technical report presents early analyses upon which the study reported in report number 11 is based.

APPENDIX 2 - GLOSSARY

Articulation	The physical production of speech sounds by moving together the lips, tongue, soft palate, larynx etc. with the hard structures in the mouth the hard palate, teeth etc.	Morpho-syntax	A combination of morphology and syntax, key features of the child's grammatical system. Morphology refers to meaningful word endings and syntax to sentence construction and grammar
Autism Spectrum Disorders (ASD)	Term used to describe and diagnose a range of developmental conditions with common features primarily affecting social communication skills and interaction.	Outcome	The measure used to assess change following intervention.
Before and after study	An evaluation study in which children are assessed before the intervention and immediately afterwards but where there is no comparison group.	Narrative	The child's ability to retell stories usually in response to a specific story. Narratives are often scored in a particular way – using "story grammar"
Blinding	A feature of efficacy and effectiveness studies where those assessing the children do not know – ie are blind to, the intervention group that they were in.	Phonological awareness	Awareness of the phonological structure, or sound structure, of spoken words. Often tested in specific tasks such as sound segmentation, rhyme, alliteration etc. Phonological awareness is an important and reliable predictor of later reading ability.
Cochrane Review	These are reviews which summarise the intervention literature following very specific guidelines resulting in the most robust evidence in a given field. See also systematic review. Cochrane Reviews are freely available http://www.thecochranelibrary.com	Phonology	The systematic use of sound to encode meaning in any spoken human language.
Commissioner	Those purchasing services for children with SLCN. These may be in health, education or charitable sectors.	Practitioner	Generic term used for a professional with responsibility for providing intervention/ teaching, carrying out a assessment etc.
Complex needs	Children who have a number of different health, social and development needs at the same time. These children commonly have SLCN.	Primary speech and/or language difficulties/ impairment Prognosis	Term used to describe children whose speech and/or language difficulties occur in the absence of other physical or cognitive difficulties (see also specific language impairment).
Comprehension	The child's ability to understand what is said by others. Often assessed in formal language tests where the child has to rely on his or her understanding of the words/sentences used and not the context in which they are said.		Primarily medical term for anticipated outcome over an extended period of time. Often used to refer to the outcome for a specific type of difficulty as in "The prognosis for phonological delays is...".
Diagnosis	A medical term used to capture a child's SLCN or medical need. Often associated with very specific labels which include assumptions about causation and sometimes intervention.	Programme	An intervention which has been systematised.
Dyspraxia	A "condition" used to describe a specific difficulty with inconsistent and unintelligible	Provenance	The original source of an intervention.

	speech.		
Effect size	Term given to the size of the difference between the outcomes in intervention and comparison groups.	Quasi-experimental study	Intervention studies where children are not randomly put into groups – for example they may be matched or allocated alternately.
Effectiveness	Evaluation of intervention in practice – as it is delivered in schools, for example. Follows on from efficacy study. Answers the question: "does the intervention work under real life conditions?"	Randomised control trial (RCT)	Interventions studies where children are randomly put into groups. Generally considered the best quality design for a study of effectiveness or efficacy.
Efficacy	Evaluation of an intervention in controlled and optimal conditions – with the highest level of staffing, best equipment etc. Answers the question can the intervention work compared with nothing or with an alternative intervention.	Response to intervention	Term originally derived from the US. All children in a class would be provided with an intervention and those who do not respond as anticipated are then provided with additional support. So identification follows intervention rather than one-off assessments.
Evaluation	The process of making a judgement about the value of an intervention. Traditionally tested in experimental terms – is intervention a. more effective than intervention b.? It also includes other issues such as the views of the practitioners or parents	Semantics	The meaning associated with a given word, or combinations of words
Experimental single subject design	Some studies evaluate the effect of an intervention on a single child. In the best examples the response to the intervention is compared against performance over an earlier control period when no intervention is provided.	Session	A term used to define a specific period of intervention – for example the period when a teaching assistant or SLT works with a given group of children within school.
Face validity	Refers to whether an assessment or intervention is considered to do what it says it does as far as practitioners are concerned. Interventions with high face validity may be well recognised and may continue to be used without any real evidence of effectiveness.	SLCN	Speech, Language and Communication Needs – an umbrella term introduced at the time of the Bercow Review of Services to describe the group children with speech and language difficulties irrespective of origin or presenting features.
Follow-up	Commonly children's performance is measured before and after an intervention but it is also common for the children to be followed up at 3 month, 6 months or at longer intervals to establish whether the effects of the intervention is maintained or "washes out".	Specific Language Impairment	Term applied to children who have difficulties acquiring language but who do not have difficulties in other areas (general developmental delays, severe hearing loss etc.)
Input	Term used to describe what is said to the child characteristically an intervention. The level of input (usually from a competent speaker) is often monitored in	Speech and Language Therapist (SLT)	Practitioner with a primary responsibility for assessing and providing intervention for children with SLCN. The SLT is most commonly employed in the health service in the UK but often works within the education system.

relation to the child's "output".

Inference	Term used to describe what a child understands from what has been said. If a child has difficulty with inferencing it suggests that he/she has difficulty distinguishing between what has been said and what the speaker actually means.	Stammer	Also referred to as a stutter (US) this refers to the difficulty a child has in producing fluent speech.
Intervention	Term used to define the provision of additional support for children with SLCN over and above what they would otherwise receive in class or elsewhere.	Systematic review	Term given to a review of the literature which demonstrates clearly how included studies were identified, and analysed such that it could be repeated by someone else following the same procedure. (see also Cochrane Review)
Level of evidence	Term used to define how much confidence the evidence allows us to rate in the effectiveness of a given intervention. Various types of hierarchies are used. In this report we use Strong, Moderate and Indicative.	Target	The specific aim of an activity within an intervention programme. It would be pre-specified and often measured as a part of the process of evaluation.
Manual	Term used to describe the document which drives a given intervention. It will commonly include an assessment, clear links to intervention activities and a method for assessing change. Manuals are traditionally in book format but increasingly are web based.	Wave 1/2/3	Also called Tier1,2,3 or Universal, Targeted, and Specialist. These terms refer to the organisation of services such that <u>all</u> children receive the first level, a subgroup is identified for targeted intervention and finally a group is identified needing sustained specialist intervention.

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