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Department for Education

"What Works": Interventions for children and young people with speech, language and communication needs: Technical Annex

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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Government policy and may make reference to the Department for Children, Schools and Families (DCSF) which has now been replaced by the Department for Education (DfE).

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Technical Annex: Review of Interventions for children, with speech, language and communication need.

This Technical Annex to the Better Communication Research Programme's *What Works?* Report presents the reviews of Interventions for children with speech, language and communication needs.

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Title: **1. THE BECKY SHANKS NARRATIVE INTERVENTION**	
Description of aims and objectives Becky Shanks Narrative Intervention was invented and manualised by Becky Shanks (2001). It focuses on understanding and using story grammar to support children to tell verbal narratives and stories and is specifically designed for children with language difficulty. The Narrative Intervention follows four principles (Davies, Shanks & Davies 2008) namely 1. identifying the quality of a simple story structure, 2. the development of children's narratives, 3. intervention based on story grammar and 4. collaboration between speech and language therapists and teachers. A simple story consists of three parts: a beginning, middle and an end and the approach supports children by giving them a clear structure to develop each of these aspects. The story starts with "who", "where" and "when" information to set the scene. In the middle of a story, is a focus on "what happens" where an episode is developed containing at least one event. This event can trigger the character(s)'s actions. These actions may be doing something or an internal response, e.g. thinking in relation to the event, resulting in consequences at "the end" of the story. The Narrative Intervention can also create a multi-episode story, longer and more complex than a simple story but with a similar structure. The story telling aims to help children to recognise and internalise components of story grammar. Afterwards the children are asked to answer questions about who, when, where and how. These questions may be presented in a form of discussion. In addition, the children are also asked to create and tell a new story with an appropriate story grammar.	**Target group** ☐ Speech ☐ **Language** ☐ Communication ☐ Complex needs **Age range** ☐ **Preschool** ☐ **Primary** ☐ Secondary **Focus of intervention** ☐ Universal ☐ **Targeted** ☐ **Specialist** **Delivered by** ☐ **Specialist** ☐ **Teacher** ☐ **Assistant** ☐ Other

Delivery

In a typical session, the therapist, teacher or assistant tells a story to children with different teaching aids, e.g. pictures, cards and puppets. Different aspects and questions related to the story telling are taught to children explicitly to ensure they understand the different questions and can use them to retell stories over time. There is a set of picture resources to support the programme and materials which can be added to the pack of resources. The programme runs over a period of weeks, introducing different aspects of storytelling each week. The narrative intervention can be used by teachers, therapists or assistants.

Level of evidence

There are few evidence-based intervention studies reporting specifically on Becky Shanks Narrative Intervention. A recent article by Davies, Shanks & Davies (2008) investigates the intervention applied in UK schools with a high proportion of children from families with low socioeconomic status and reports significant improvements in the quality of these children's verbal story-telling. There are also effectiveness studies for a general narrative therapy approach published before this approach (Boudreau & Hedberg, 1999; McGregor, 2000).

The narrative approach and this intervention specifically has an **indicative** evidence level. Within the evidence are examples of positive outcomes for children with language delay. It is therefore a useful approach to consider, especially when services determine where and when it is most effective for the children they work with.

References

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Davies, P., Shanks, B., & Davies, K. (2004). Improving narrative skills in young children with delayed

Format

- **Manual**
- Approach
- Technique

Evidence rating

- Strong
- Moderate
- **Indicative**

language development. *Educational Review*. 56:3, 271-286.
McGregor, K.K. (2000). The development and enhancement of narrative skills in a preschool classroom towards a solution to clinician-client mismatch. *American Journal of Speech-Language Pathology*, 9 55-71.
Shanks, B. (2001). *Speaking and listening through narrative*. Keighley: Black Sheep Press.

Title: **2. BROAD TARGET RECASTS**

Description of aims and objectives

Broad Target Recast (BTR) is a specific intervention programme based on recast technique. A recast is where a more experienced speaker responds to what a child says by expanding, deleting, or changing their utterances while maintaining the meaning (Saxton, 2005). Yoder, Camarata and Gardner (2005) defined two types of recast: speech recast and sentence length recast.

- Speech recast - if a child says, “This is a wion [lion]” their conversation partner would say “Yes, a lion.” The speech recast only gives information about accurate pronunciation of words.
- Sentence length recast - is to add vocabulary or grammatical information to a child’s talking. For example, if a child says “This lion,” the sentence length recast might be “Yes, this is a lion” (Camarata, Nelson & Camarata, 1994).

Yoder and his colleagues (2011) define it as a child-centred language treatment. Yoder et al., (2011) describes a recastable utterance as any intelligible child utterance other than yes/no, a greeting, or an acknowledgement. An effective recast is expected to be one that can help develop the child’s speech or language. Compared to other recasting treatments, BTR is rather different from traditional recasting because both speech and grammatical recasts are incorporated within the same treatment session.

Delivery

BTR is a combination of speech and sentence length recasts in the same therapy session (Yoder et al., 2005). In a real intervention scenario, a therapist can adjust the emphasis on speech and sentence length on an utterance-by-utterance basis. Thus the user needs to follow the child’s lead and talk about whatever the child is interested in. In a conversation used to trigger a child’s response, the adult will usually ask the child a

Target group

- ☐ Speech
- ☐ **Language**
- ☐ Communication
- ☐ Complex needs

Age range

- ☐ **Preschool**
- ☐ Primary
- ☐ Secondary

Focus of intervention

- ☐ Universal
- ☐ **Targeted**
- ☐ **Specialist**

Delivered by

- ☐ **Specialist**
- ☐ Teacher
- ☐ Assistant
- ☐ Other

question about what he is doing and then recast the child's response. Recasting, as a technique for promoting language development in young children can be used by any practitioner or indeed adult with whom the child is communicating. The main difference is likely to be the level of detail recorded about the child's responses.

Level of evidence

There have been a number of studies on recasting for children with language difficulties (Saxton, 2005). In a study of BTR in children with SLI, Yoder et al., (2005) reported that BTR improved speech intelligibility in children with both speech and language impairments. In the recent report by Yoder and his colleagues (2011) It was found that BTR can facilitate children's growth of grammar, but may be relatively less powerful than another specific grammar intervention programme (e.g. Milieu language teaching: Warren, 1991).

The recast technique and this intervention specifically have a **moderate** evidence level. Within the evidence are examples of positive outcomes for children with speech and language difficulties. It is therefore a useful approach to implement, though it may be useful to consider other specific grammar approaches alongside this approach.

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Camarata, S. M., Nelson, K. E. & Camarata, M. N. (1994).Comparison of conversational-recasting and imitative procedures for training grammatical structures in children with specific language impairment. *Journal of Speech and Hearing Research*, 37, 1414–1423.

Saxton, M. (2005). 'Recast' in a new light: insights for practice from typical language studies. *Child Language Teaching and Therapy*, 2 (1), 23-38.

Warren, S.F. (1991). Enhancing communication and language development with milieu teaching procedures. In E. Cipani (Ed.), *A guide for developing language competence in preschool children with severe and moderate handicaps* (pp. 68–93). Springfield, IL: Charles C Thomas.

Format

- Manual
- Approach
- **Technique**

Evidence rating

- Strong
- **Moderate**
- Indicative

Yoder, P., Camarata, S., & Gardner, E. (2005). Treatment effects on speech intelligibility and length of utterance in children with specific language and intelligibility impairments. *Journal of Early Intervention*, 28, 34–49. Yoder, P.J. Molfese, D. & Gardner, E. (2011). Initial Mean Length of Utterance Predicts the Relative Efficacy of Two Grammatical Treatments in Preschoolers With Specific Language Impairment *Journal of Speech, Language, and Hearing Research, 54,* 1170–1181.	

Title: **3. COLOURFUL SEMANTICS**	
Description of aims and objectives Colourful Semantics uses coloured visual prompt cards to 'show' the structure of a sentence thus linking the structure of a sentence (syntax) and its meaning (semantics). It was originally developed for use with children with severe specific language impairment by Bryan (1997) and relatively recently adapted for use in mainstream school settings. Each coloured card represents a word or part of a sentence. Originally, this approach was designed to support the development of specific grammatical structures (verb argument structure) in children with specific language impairments but has been expanded to also develop vocabulary, spoken and written language and understanding and development of written narrative structure. It is widely used in the UK and in Australia by speech and language therapists but is not formally published as a programme. It has been developed further in shape coding by Ebbels and colleagues (Ebbels et al. 2007). **Delivery** Originally intended for one to one direct therapy with children in primary and secondary "special" schools for children with severe speech and language difficulties, it is now commonly used in mainstream schools (Bryan et al., 2007). **Level of Evidence** The majority of studies are descriptive case studies and the approach has good **face validity** and shows promise as a programme. It has recently been the subject of an independent evaluation, suggesting clinically interesting findings (Bolderson, Dosanjh, Milligan, Pring & Chiat, 2011). The colourful semantics approach has an indicative evidence level. It is therefore a useful approach to consider when working with children with more severe language disorders.	**Target group** ☐ Speech ☐ **Language** ☐ Communication ☐ Complex needs **Age range** ☐ Preschool ☐ **Primary** ☐ **Secondary** **Focus of intervention** ☐ Universal ☐ Targeted ☐ **Specialist** **Delivered by** ☐ **Specialist** ☐ Teacher ☐ Assistant ☐ Other

References	Format
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	Evidence rating
	☐ Strong ☐ Moderate ☐ **Indicative**

Title: **4. COMIC STRIP CONVERSATIONS**	
Description of aims and objectives: Originally designed for children on the autistic spectrum, Comic Strip Conversations use drawings of stick figures with speech and thought bubbles to show what people think and what they say in different situations. They are intended to show that people can say one thing and think another. They are often used to look back on situations and talk about the different ways students could have behaved. They were developed by Carol Gray. For more information see http://www.thegraycenter.org/. **Delivery:** Adults, including teachers or parents, introduce a student to Comic Strip Conversations and symbols to support the intervention (e.g., symbols for a classroom, a playground, speech, or thought). The adult demonstrates how to draw situations while talking; then provides chances for the student to practice a Comic Strip Conversation with someone else. There are 8 symbols to represent the different levels of conversation including: listening, interrupting, loud and quiet words, talk and thoughts. These can be laminated onto cue cards for the pupil. After introducing Comic Strip Conversations, the student and an adult hold a Comic Strip Conversation, drawing about a given situation, gathering the following information: Where are you? (the student draws a person) Who else is here? (the student draws a person) What are you doing? (the student draws relevant items and/or actions) What happened? What did other people do? (the student draws relevant items and/or actions) What did you say? (use conversation bubble)	**Target group** ☐ Speech ☐ Language ☐ **Communication** ☐ **Complex needs** **Age range** ☐ **Preschool** ☐ **Primary** ☐ **Secondary** **Focus of intervention** ☐ Universal ☐ Targeted ☐ **Specialist** **Delivered by** ☐ **Specialist** ☐ **Teacher** ☐ **Assistant** ☐ **Other**

What did other people say? (use conversation bubble) What did you think when you said that? (use thought bubble) What did other people think when they said that/did that? (use thought bubble) Comic Strip Conversations can be useful for describing and explaining a future event or activity to support children preparing for new situations. It is useful to build in variations on what may happen. They can also be useful for working through incidents where children have reacted badly, to support them identifying the flash points and looking at alternative ways they could have responded The approach can be used with children who would benefit from a visual approach to support their learning. Teachers and support staff may benefit from the advice of a specialist to support thinking around which children would benefit from the approach. Time is needed to support children's understanding of how they work and for development of materials. For more information on comic strip conversations see the booklet below (Gray, 1994). For ideas of activities see TES website for free downloadable activities on comic book conversations. http://www.tes.co.uk/teaching-resource/Comic-Strip-Conversations-3013243/ **Level of evidence** Case studies have shown some positive results from using Comic Strip Conversations with children and young people on the autistic spectrum. Pierson & Glaeser (2007) found, in a study of four children with other mild/moderate learning, cognitive and behavioural disabilities that 'All participants improved their perceptions of social situations, exhibited appropriate social growth, began to generate their own solutions to difficult social situations, and demonstrated a decrease in target behaviours.' No larger scale trials or reviews have been published. The comic strip conversation intervention has an **indicative** evidence level, with limited evidence available. Within the evidence are positive outcomes for relatively small numbers of children. It is therefore a useful	**Format** ☐ **Manual** ☐ Approach ☐ Technique **Evidence rating** ☐ Strong ☐ Moderate ☐ **Indicative**

approach to consider, especially when services determine where and when it is most effective for the children they work with. **References :** Gray, C. A. (1994). *Comic strip conversations: Illustrated interactions that teach conversation skills to students with autism and related disorders*. Arlington Texas: Future Horizons. Glaeser, B. C., Pierson, M. R., & Fritschmann, N. (2003). Comic strip conversation: A positive behavioral support strategy. *Teaching Exceptional Children*, *36,* 14-19. Kerr, S., & Durkin, K. (2004). Understanding of thought bubbles as mental representation in children with autism: Implications for theory of mind. *Journal of Autism and Developmental Disorders, 34,* 637-648. Pierson M R & Glaeser B C (2005) Extension of Research on Social Skills Training Using Comic Strip Conversations to Students Without Autism *Education and Training in Developmental Disabilities, 2005, 40(3),* 279–284. Pierson, M. R., & Glaeser, B. C. (2007). Using comic strip conversations to increase social satisfaction and decrease loneliness in students with autism spectrum disorder. *Education and Training in Developmental Disabilities, 42*, 460-466. Rogers, M. F., & Myles, B. S. (2001). Using social stories and comic strip conversations to interpret social situations for an adolescent with Asperger Syndrome. *Intervention in School and Clinic*, *36*, 310-313.	

Title: **5. COMPREHENSION MONITORING**

Description of aims and objectives

Comprehension monitoring is a process where an individual recognizes, and reacts to not understanding what has been said. (Markman, 1981).Comprehension Monitoring develops the child's meta-awareness, which means developing children's knowledge about their own language. This is important so that children know what they do and don't know and can seek support when they are not understanding. This can be difficult for children with language needs and may need direct support.

Comprehension (understanding) and comprehension monitoring are different but related processes. To *comprehend* is to understand what is being said. When people don't understand, comprehension monitoring ability means they know they haven't understood and can ask for clarification. Being able to do this means children can listen and understand more accurately.

The approach for comprehension monitoring was originally developed for use in promoting reading comprehension for example in reciprocal teaching. It is now widely used with oral language related to children who are bilingual, language impaired and those with learning disabilities.

It was also originally targeted at children in primary years, though it has also been used as a technique for promoting understanding in preschool children.

There is no one comprehension monitoring programme, though Dollagan and Kaston (1986) describe four phases:

1. Children were first taught to how to listen by turning listening into from a passive to an active process by teaching them how to identify, label, and demonstrate three key behaviors associated

Target group

- ☐ Speech
- ☐ **Language**
- ☐ Communication
- ☐ Complex needs

Age range

- ☐ **Preschool**
- ☐ **Primary**
- ☐ **Secondary**

Focus of intervention

- ☐ Universal
- ☐ **Targeted**
- ☐ **Specialist**

Delivered by

- ☐ **Specialist**
- ☐ **Teacher**
- ☐ Assistant
- ☐ Other

with listening (sitting still, looking at the speaker, and thinking about what the speaker is saying) and linking these key behaviours back to listening. 2. They were next taught how to identify when they could not follow a message and what to do about it. The first messages were clearly impossible to follow, due to what might be termed "signal inadequacies," such as being too quiet to hear properly, too fast to follow, or with a noise within the message which made it impossible to hear (eg sneezing on a word). 3. In the third phase of the program, they went through the same process, but instead of difficulties with how the message sounded, they were given messages with not enough information needed to follow it through, either because it wasn't clear enough or was ambiguous or information content, such as inexplicit, ambiguous, or physically impossible. 4. Finally, children went through the same process again, but with messages that were beyond their understanding, either because they contained words they didn't know, were too long or the grammar was too complex. Going through these step by step processes teaches children how to recognize when they have not understood and gives them strategies for what to do – e.g. asking someone to repeat things more slowly, asking for an explanation for a word, etc. **Delivery** Comprehension monitoring can be used by any practitioner working with the child with SLCN although it has tended to used explicitly by specialist practitioners. Guidance from specialists can be given to teachers and support staff to reinforce and encourage children to use these strategies for themselves within the classroom, therefore supporting more independent learning. **Level of evidence** Formal evaluations of comprehension monitoring have largely been focused in the literature on literacy	**Format** □ Manual □ **Approach** □ Technique **Evidence rating** □ Strong □ **Moderate** □ Indicative

interventions for example with reciprocal teaching. They can also be seen as part of broad based intervention programmes such as the SCIP programme (#42) and the Strathclyde Language programme (#47) described in this document. The comprehension monitoring approach has a **moderate** evidence level. Within the evidence are examples of significantly positive outcomes for children with language impairments. It is therefore a useful approach to implement where appropriate. **References** Dollaghan, C. & Kaston, N. (1986). A comprehension monitoring programme for language impaired children. *Journal of Speech and Hearing Disorders 51*, 264-271. Markman, E. (1981). Comprehension monitoring. In W.P. Dickson (Ed.), *Children's oral communication skills* (pp. 61-84). New York: Academic Press. Palincsar, A.S., & Brown, A.L. (1984). Reciprocal teaching of comprehension-fostering and comprehension-monitoring activities. *Cognition and Instruction*, 1(2), 117-175. Skarakis-Doyle, E. (2002). Young children's detection of violations in familiar stories and emerging comprehension monitoring. *Discourse Processes*, *33*, 175–197.	

Title: **6. CORE VOCABULARY**	
Description of aims and objectives The Core Vocabulary approach (Crosbie, Holm & Dodd, 2005) is designed for use with children who have inconsistent speech disorder (Dodd, 2005), i.e. many of their words are produced with inconsistent pronunciations, but there are no signs of developmental verbal dyspraxia. Most children with inconsistent speech disorder have a severe speech sound disorder and the underlying difficulty is one of phonological planning, i.e. they don't use the right speech sounds in the right places when they speak, even though they might be able to copy or make individual speech sounds. Generally, they do not tend to have an underlying learning or language difficulty. The idea for this approach with this specific group of children is that it targets the underlying difficulty in processing speech, rather than just trying to change mistakes children make in how they say particular words and sounds. In this way, there will be system-wide change in a child's speech rather than just improving how children say individual speech sounds. The aim of core vocabulary intervention is for the child to consistently and accurately produce a set of words that are used a lot and are powerful for the child's communication and to be able to use these spontaneously when they talk. The ultimate goal is for clear speech through consistent use of at least 70 target words. The short term goals are first, to achieve an appropriate production of a target word (given the child's phonological system and phonetic inventory); and second, for the child to consistently use the best production possible. Core vocabulary achieves this through teaching children how to put together individual sounds in order to	**Target group** □ **Speech** □ Language □ Communication □ Complex needs **Age range** □ **Preschool** □ **Primary** □ **Secondary** **Focus of intervention** □ Universal □ **Targeted** □ **Specialist** **Delivered by** □ **Specialist** □ Teacher □ Assistant □ Other

make a word. As children become more consistent in doing this, they often improve in how accurately they can say the words. However, where this is not the case, a second intervention approach targeting consistent speech errors may be needed. **Delivery** Intervention begins with the selection of 70 words that the child would use a lot and would be powerful in supporting their communication. This is done through discussion with the child, their parents and teachers. Ten words are selected at random from this list each week and practiced in twice-weekly half hour sessions, plus daily practice from care-givers, for eight weeks. Words are taught sound-by-sound using techniques such as syllable segmentation, (breaking up words into syllables) imitation and **cued speech** (see #7). As children with inconsistent speech disorder are often able to imitate all speech sounds, they should be able to say the words correctly. Where this is not the case, children are encouraged to give their best possible production for each word. Games are then used to practice the best production for each of the ten words and explicit feedback is given to the child on their production in these games and in spontaneous speech. At the end of the second session each week, the child is asked to produce each of the ten target words three times. Words which are produced consistently are then removed from the list and ten new words selected from those that remain on the list of inconsistent words. **Level of evidence** Core Vocabulary has been investigated in case studies (Dodd & Bradford, 2000; Dodd & Iacano, 1989; Holm & Dodd, 1999, 2001; McIntosh & Dodd, 2008), one quasi-experimental group study (Crosbie, Holm & Dodd, 2005) and a randomised controlled study (Broomfield & Dodd, 2005). The group study used an alternating treatments design to compare two different approaches (phonological contrast and core vocabulary) on 18 children with speech sound disorder. Core vocabulary resulted in greater change in the	**Format** □ Manual □ **Approach** □ Technique **Evidence rating** □ Strong □ **Moderate** □ Indicative

ten out of the 18 children who had inconsistent speech disorder compared to phonological contrast therapy. Broomfield and Dodd's Randomised Control Trial had 30 participants with inconsistent speech sound disorder. They were randomly allocated to either a treatment (Core Vocabulary) or no treatment group. Following intervention, the children who had received the core vocabulary intervention performed better on re-assessment than the children who had received no intervention.

The core vocabulary approach has a **moderate** evidence level. Within the evidence are examples of significantly positive outcomes for children with severe speech difficulties. It is therefore a useful approach to implement where appropriate.

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Holm, A., & Dodd, B. (2001). Comparison of cross-language generalization following speech therapy. *Folia Phoniatrica et Logopaedica, 53,* 166–172. McIntosh, B. & Dodd, B. (2008) Evaluation of core vocabulary intervention for treatment of inconsistent phonological disorder: Three case studies. *Child Language Teaching and Therapy, 24,* 305-327.	

Title: **7.CUED SPEECH**	
Description of aims and objectives The system of Cued Speech was designed primarily to help deaf and hearing impaired speakers to learn English, to help lip reading and in to support the development of literacy. Cued speech is a system of hand shapes and hand positions used in combination with lip shapes to show all the different speech sounds (phonemes of speech). These hand positions and shapes are used by the speaker as they speak to illustrate the sounds of each word. It has been adapted into a number of languages and can be used alongside British Sign Language. Since the introduction of cochlear implants it has also been used to help children with cochlear implants to recognise the difference between speech sounds (speech perception). Cued speech has also been used with children who have difficulties making different speech sounds (articulation difficulties). However, this should not be confused with a number of other techniques used to visually help children work out where to put their tongue, lips etc when trying to make specific speech sounds (eg. cued articulation, visual phonics, signed target phoneme therapy). These tend to be used to support children with developmental verbal dyspraxia. **Delivery** Courses in cued speech are delivered by qualified trainers. Twenty hours is considered the average amount of time needed to learn cued speech although familiarity and experience of using cued speech enables greater fluency and speed. Parents who are planning to use cued speech are advised to use it from as early as possible with a baby who is deaf and to use it in naturally occurring conversations and play with their developing child. In the UK, the website of the charity, 'Cued Speech' provides details of	**Target group** ☐ **Speech** ☐ Language ☐ Communication ☐ Complex needs **Age range** ☐ **Preschool** ☐ **Primary** ☐ Secondary **Focus of intervention** ☐ Universal ☐ **Targeted** ☐ **Specialist** **Delivered by** ☐ **Specialist** ☐ Teacher ☐ Assistant ☐ Other

courses, video demonstrations and references to existing research. For more information see http://www.cuedspeech.co.uk/ **Level of Evidence** Research into the use of cued speech in hearing impairment shows beneficial effects including increased accuracy of lip-reading and speech perception, and reading. This research is mainly at the level of case studies and case series and small group comparative studies. Level of evidence: **indicative**. For example, Nicholls & McGill (1982) worked with 18 children with profound hearing impairment who had been using cued speech for a number of years and compared their speech reception accuracy under various conditions including with and without cued speech. Accuracy when using cued speech in combination with lipreading was significantly better than conditions using listening alone or listening and lipreading. In a study comparing the reading and **phonological awareness** skills of children with cochlear implants (Bouton et al., 2011), those who had used cued speech showed improved phonemic awareness (awareness of speech sounds) and reading skills compared to implanted children who did not use cued speech. Research into the use of cued speech to support the children producing clear speech sounds of non-hearing impaired children is sparse and case report level only: Indicative The cued speech technique has different levels of evidence for hearing and hearing impaired children. Within the evidence are examples of positive outcomes for children with hearing impairment, cochlear implants and speech difficulties. It is therefore a useful approach to consider, especially when services determine where and when it is most effective for the children they work with. **References**	***Format*** ☐ Manual ☐ Approach ☐ **Technique** ***Evidence rating*** ☐ *Strong* ☐ *Moderate* ☐ ***Indicative***

Bouton, S., Bertoncini, Serniclaes, W. & Cole, P. (2011) Reading and reading-related skills in children using cochlear implants: prospects for the influence of cued speech. *Journal of Deaf Studies and Deaf education*. Advance Access, doi:10.1093/deafed/enr014 The research regarding the use of cued speech is summarised in a document available of the Cued Speech website: http://www.cuedspeech.org.uk/uploads/documents/research_supporting_the_use_of_cued_speech_and_cued_language_2008.pdf.

Nicholls, G.H., & McGill, D.L. (1982). Cued speech and the reception of spoken language. *Journal of Speech and Hearing Research*, 25, 262-269.

Title **8. CYCLES**	
escription of aims and objectives The Cycles approach (Hodson & Paden, 1991) was initially developed for use with children who have speech that is very difficult to understand because of the large number of mistakes they make with different speech sounds. This includes children with severe expressive **phonological impairments** but also children who have major phonological deviations due to a range of reasons including **developmental verbal dyspraxia**, repaired cleft palate, hearing impairment with and without cochlear implant and learning difficulties. Rather than focusing on individual speech sounds (phonemes), it targets patterns of mistakes. These can be in relation to sounds in words (e.g. missing the ends off words (final consonant deletion), cluster reduction or in terms of categories of speech sounds, because of where or how they are made (e.g. all velars, all fricatives). Patterns which are in error but are stimulable (i.e. children can imitate the sound) are identified and these are then presented in a cyclical fashion. One cycle equals the time needed to focus on each deficient pattern, using a range of target sounds. The length of a cycle will depend on the number of patterns in error. Some patterns will only require one cycle for the child to improve while others may require repeated cycles until children can use the newly developed sounds in their speech. The Cycles approach is based on a range of research linked to speech sound systems and their development (developmental phonology theories, cognitive phonology principles, phonological acquisition research and clinical phonology research). It supports children to make changes across a	**Target group** □ **Speech** □ Language □ Communication □ Complex needs **Age range** □ **Preschool** □ **Primary** □ **Secondary** **Focus of intervention** □ Universal □ Targeted □ **Specialist** **Delivered by** □ **Specialist** □ Teacher □ Assistant

number of speech sounds that fall into particular patters, rather than focusing on children accurately making individual speech sounds; in this way it can encourage quicker changes in children's speech patterns and therefore how well they are understood, particularly in a child who is making lots of errors in their speech.

There are lots of different approaches taken within the intervention, including auditory awareness, speech perception, language and literacy as well as speech output. In addition, metaphonological awareness (children's own awareness of their speech sounds) activities are included and non-stimulable (sounds children cannot imitate) sounds are stimulated though not targeted until stimulable. The approach also includes focused auditory input (see #14) with slight amplification to enhance speech perception during the early cycles.

Delivery

Specific speech sounds within each deficient pattern are targeted for 60 minutes a week, which can be delivered as one or multiple sessions. Several error patterns can be delivered in each cycle. One cycle is the time taken to address each of the phonological patterns which are in error. The length of a cycle will therefore depend on the number of patterns that are deficient in a child's system and the number of phonemes that are stimulable. One cycle will typically take between 6 and 18 hours while three to four cycles (30-40 hours of contact time) are typically required to achieve intelligible speech. Children can be grouped and homework is included. For children younger than 3, there is an age appropriate focus on listening, before a focus getting them to change how they make specific sounds.

Level of evidence

Almost and Rosenbaum (1998) investigated a modified cycles approach in a randomized controlled trial with 26 children who had severe phonological impairment and found that the children who received the intervention immediately made significantly greater progress than those whose

Format

- **Manual**
- Approach
- Technique

Evidence rating

- Strong
- **Moderate**
- Indicative

intervention was delayed. Tyler, Edwards and Saxman (1987) obtained similarly positive findings in their study which included a control intervention but was not randomised. In addition, a number of case studies have been published providing pre- and post-intervention data (Gordon-Brennan et al., 1992; Hodson, 1983, 1994, 2005; Hodson et al., 1983; Hodson et al., 1989). In an independent review of studies using the cycles approach, Baker, Carrigg and Linich (2007) concluded that there is evidence to support the efficacy of the approach but more studies are needed comparing different phonological interventions.

The cycles intervention has a **moderate** evidence level. Within the evidence are examples of significantly positive outcomes for children with severe speech difficulties. It is therefore a useful approach to implement where appropriate.

References

Almost, D., & Rosenbaum, P. (1998). Effectiveness of speech intervention for phonological disorders: A randomized controlled trial. *Developmental Medicine and Child Neurology, 40,* 319-325.

Baker, E., Carrigg, B., & Linich, A. (2007). What's the evidence for…? The cycles approach to phonological intervention. *ACQuiring Knowledge in Speech, Language and Hearing, 9,* 29-30.

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Hodson, B. (2005). *Enhancing phonological and metaphonological skills of children with highly*

unintelligible speech. Rockville, MD: American Speech Language Hearing Association.
Hodson, B., Chin, L., Redmond, B., & Simpson, R. (1983) Phonological evaluation and remediation of speech deviations of a child with a repaired cleft palate: A case study. *Journal of Speech and Hearing Disorders, 48,* 93-98.
Hodson, B., Nonomura, C., & Zappia, M. (1989) Phonological disorders: Impact on academic performance? *Seminars in Speech and Language, 10,* 252-259.
Hodsen, B. W., & Paden, E. P. (1991). *Targeting intelligible speech: A phonological approach to remediation* (2nd ed.). Austin, TX: PRO-ED.
Tyler, A., Edwards, M., & Saxman, J. (1987) Clinical application of two phonologically based treatment procedures. *Journal of Speech and Hearing Disorders, 52,* 393-409.

Title: **9. THE DERBYSHIRE LANGUAGE SCHEME**	
Description of aims and objectives The Derbyshire Language Scheme (Knowles & Masidlover 1982), published by Derbyshire County Council, is a system of language intervention intended for children who have difficulties in developing language skills. It consists of two Teaching Manuals, a collection of language tests and forms to record a child's progress. The Teaching Manuals contain descriptions of individual and group activities aimed at improving a child's use and understanding of language. They start at a low level where it is presumed that the child has no understanding of language and no expressive language ability, i.e. doesn't use words or sentences. From this point the syllabus moves in small steps to a level where the child is expected to follow a sequence of two commands after hearing them once only (e.g. Put your colouring book on the table, and fetch me your plimsolls). The child's expression should have progressed to a point where a simple narrative can be related (eg: I went to the park with my mummy, and fed the ducks. My brother came with….etc). There should be several types of complex sentences in use, i.e. those with more than one main verb (e.g. She fell down 'cos she didn't see the box. Lock the door so he can't get out, etc). The scheme is made up of teaching activities linked to approximately two hundred language objectives. The format allows a teacher to make up an individual education plan consisting of any combination of objectives, based on an assessment of the child's language skills. **Delivery**	**Target group** ☐ Speech ☐ **Language** ☐ Communication ☐ Complex needs **Age range** ☐ **Preschool** ☐ **Primary** ☐ Secondary **Focus of intervention** ☐ Universal ☐ **Targeted** ☐ **Specialist** **Delivered by** ☐ **Specialist** ☐ Teacher ☐ Assistant ☐ Other

Originally designed for teachers to use with children with severe learning difficulties and now used more widely, the DLS provides assessments and structured lesson plans for structured language teaching in individual and small group contexts. No advice is given regarding the frequency or location of these sessions. **Level of evidence** The DLS has been in use for many years and its terminology have been added to the language used to describe language learning difficulties – eg the Information carrying words (ICW). Nevertheless it has not been formally evaluated. The Derbyshire language scheme intervention has an **indicative** evidence level, with limited evidence available. It is included here because of the strength of its face validity and significant use in practice. It is therefore seen a useful approach to consider, especially when services determine where and when it is most effective for the children they work with. **References** Kiernan C (1984). Language remediation programmes: A review, in D.J. Muller (Ed) *Remediating Children's Language*. London: Croom Helm. Lees J (1990). Communication Breakdown - Who's to blame - Speech Therapy in Practice, brief account of a successful implementation of the Scheme with a three year old with very limited language. Lees J. & Urwin S. (1990). *Children with language disorders* London: Whurr Publishers. Masidlover M, (1985). The Derbyshire Language Scheme: Research to Practice in remedial language teaching. In J. Harris (Ed) *Child Psychology in Action*, Croom-Helm. Masidlover, M (1994). The Derbyshire Language Scheme. In J. Law (Ed) *Before school.* London: Afasic	**Format** □ **Manual** □ Approach □ Technique **Evidence rating** □ Strong □ Moderate □ **Indicative**

<table>
<tr><td>Title: 10. EAROBICS</td><td></td></tr>
<tr><td>Description of aims and objectives
Earobics (Cognitive Concepts, 1997; Diehl, 1999) is a comprehensive computerised intervention program for training phonological awareness and auditory–language processing. The activities aim to improve multiple speech and language skills:
• sound awareness,
• discrimination of sound in noise and quiet,
• sequencing sound,
• associating sound with letters,
• understanding of complex directions with and without background noise, and
• memory for sounds and words,
It also includes items to strengthen reading, spelling, and understanding.
The intervention is provided through interactive computer games which cover phonological awareness, auditory processing, and language processing skills, as highlighted above. The items are presented in quiet and with background noise, with both visual and auditory feedback. Children listen to sounds while playing interactive, animated computer games; they match sounds (indicating alike or different) by clicking the computer mouse on appropriate pictures or sound representations they hear.
Delivery
Earobics is a two-step program;</td><td>Target group
□ Speech
□ Language
□ Communication
□ Complex needs
Age range
□ Preschool
□ Primary
□ Secondary
Focus of intervention
□ Universal
□ Targeted
□ Specialist
Delivered by
□ Specialist
□ Teacher
□ Assistant
□ Other</td></tr>
</table>

• Step 1 has six interactive games covering phonological awareness and processing • Step 2, has five games which further develops the skills trained in Step 1 and concentrates more on language processing skills to help individuals better understand spoken and written language **Level of evidence** Loo et al.,(2010) reviewed three studies (Hayes et al., 2003; Warrier et al., 2005; Russo et al., 2004), which are carried out by the same research group, on Earobics intervention's efficacy. All studies combined behavioural and event-related potential measures. Following Earobics aims, they categorised outcomes in two dimensions: 1) the language, phonological awareness, reading, and spelling skills; and 2) the auditory processing skills. Earobics intervention shows a positive impact on the phonological awareness skills of children, but had no effects on improving reading and spelling skills. Detailed physiological studies have shown that Earobics may improve technical aspects of speech and word make up (the morphology, amplitudes, and latencies of speech-evoked cortical and subcortical responses in noise), which have direct correlation with auditory perceptual changes (e.g. improved speech discrimination abilities). However, the three studies only investigated children with learning disability, rather than those with more specific SLCN. In a recent systematic review (Fey et al., 2011), Fey and his colleagues cited two studies of the efficacy of Earobics in relation to language intervention (Miller et al., 2005; Pokorni et al., 2004) and suggested that the efficacy of Earobics was limited. Miller et al. (2005) reported a case study on seven school-age children with identified auditory processing disorder (APD). But no consistent improvement in spoken or written language measures was observed. Similarly, Pokorni et al.'s study (2004) compared three intervention programmes: Fast For Word, LiPS and Earobics. The study investigated the children with spoken language disorder. They found Earobics was associated with gains in phonological awareness 6 weeks after intervention, but no across-group differences were found on language and reading measure.	**Format** □ **Manual** □ Approach □ Technique **Evidence rating** □ Strong □ **Moderate** □ Indicative

The Earobics intervention has a **moderate** evidence level, though with mixed results for children with speech, language and communication needs. There appear to be some positive results in relation to phonological awareness, but not in relation to speech output or language measures. **References** Cognitive Concepts. (1997). *Earobics: Auditory development and phonics program* [Computer software]. Cambridge, MA: Cognitive Concepts. Diehl, S. F. (1999). Listen and learn? A software review of Earobics. *Language, Speech, and Hearing Services in Schools*, 30(1), 108–116. Earobics. http://www.earobics.com/. Evanston, IL: Cognitive Concepts. Fey, M.E., Richard, G. J., Geffner, D., Kamhi, A.G., Medwetsky, L., Paul, D., Ross-Swain, D., Wallach, G.P., Frymark, T., & Schooling, T. (2011). Auditory Processing Disorder and Auditory/Language Interventions: An Evidence-Based Systematic Review. *Language, Speech, and Hearing Services in Schools*, 42, 246-264. Hayes, E.A., Warrier, C.M., Nicol, T.G., Zecker, S.G. & Kraus, N. (2003). Neural plasticity following auditory training in children with learning problems. *Clinical Neurophysiology*, *114*: 673– 84. Loo, J., Bamiou, D., Campbell, N., & Luxon, L.M. (2010) Computer-based auditory training (CBAT): benefits for children with language- and reading-related learning difficulties. *Developmental Medicine and Children Neurology*, *52*, 708-717. Miller, C. A., Uhring, E. A., Brown, J. J. C., Kowalski, E. M., Roberts, B.,& Schaefer, B. A. (2005). Case studies of auditory training for children with auditory processing difficulties: A preliminary analysis. *Contemporary Issues in Communication Science & Disorders*, *32*, 93–107. Pokorni, J. L., Worthington, C. K., & Jamison, P. J. (2004). Phonological awareness intervention: Comparison of Fast ForWord, Earobics, and LiPS. *Journal of Educational Research*, *97* (3), 147–157.	

Russo, N.M, Nicol, T.G., Zecker, S.G, Hayes E.A. & Kraus N. (2005). Auditory training improves neural timing in the human brainstem. *Behav* Brain Res; *156*: 95–103. Warrier, C.M., Johnson, K.L., Hayes, E.A., Nicol, T, & Kraus, N. (2004). Learning impaired children exhibit timing deficits and training-related improvements in auditory cortical responses to speech in noise. *Experimental Brain Research 157*):431–41.	

Title: **11. ELECTROPALATOGRAPHY**

Description of aims and objectives

Electropalatography (EPG) is a computer-based instrument which gives information on the location and timing of the tongue's contact with the hard palate during continuous speech (Hardcastle 1991). It is used in the assessment and treatment of severe speech disorders. The many different types of speech difficulties for which it has been used include

- structural abnormalities of the vocal tract, including cleft palate, glossectomy,
- developmental speech disorders**;**
- 'learned misarticulations' or isolated fricative production difficulties in the absence of any other deficits,
- developmental neuro-motor difficulties, such as dyspraxia or dysarthria,
- acquired neurological disorders, including dyspraxia and dysarthria.

Each patient undergoing EPG assessment or therapy has to wear a custom-made artificial dental plate which is moulded to fit the speaker's hard palate. The dental plate is embedded with 62 electrodes on the lingual surface. When the electrodes are contacted by the tongue, a signal is sent to an external processing unit through lead-out wires and real-time visual feedback of the location and time of tongue-palate contacts is shown on a computer monitor.

Delivery

This highly specific intervention, needing extensive professional skills

Level of evidence

Electropalatography has been found to be effective in a series of single subject studies over the past twenty years especially in the field of cleft palate. A Cochrane review of the intervention evidence has been

Target group

- **Speech**
- Language
- Communication
- Complex needs

Age range

- Preschool
- **Primary**
- **Secondary**

Focus of intervention

- Universal
- Targeted
- **Specialist**

Delivered by

- **Specialist**
- Teacher
- Assistant
- Other

published. Quasi-experimental studies have been identified but no randomised controlled trials (Lee et al., 2009). The electropalatography approach is a highly specialised approach with a **moderate** evidence level. Within the evidence are examples of significantly positive outcomes for children with severe speech difficulties. It is therefore a useful approach to implement where appropriate. **References** Hardcastle, W.J. Gibbon, F.E. & Jones, W. (1991). Visual display of tongue-palate: Electropalatography in the assessment and remediation of speech disorders *British Journal of Disorders of Communication, 26. 41-74.* Lee, A**,** Law, J. &. Gibbon, F. (2009). Electropalatography for articulation disorders associated with cleft palate (Review). Cochrane Database of Systematic Reviews.. Issue 3. Art. No.: CD006854. DOI: 10.1002/14651858.CD006854.pub2.	**Format** □ Manual □ **Approach** □ Technique **Evidence rating** □ Strong □ **Moderate** □ Indicative

Title: **12. EVERY CHILD A TALKER (ECAT)**	
Description of aims and objectives Every Child a Talker provides a process and structure by which early years settings can improve their early years language provision. Originally the scheme was set up through the appointment of a dedicated ECAT consultant in a local authority to lead the development and use of the materials. ECAT is designed to raise children's achievement in early language development. It targets practitioners and parents and is designed to help them establish environments that will optimally support a child's language and communication development. It uses everyday experiences and opportunities, building on children's interests. The end 'destination' is described as a child who starts school as a confident and skilled communicator; with parents and practitioners who have raised awareness, knowledge and involvement in children's language development. The materials are provided in a series of guidance documents that are targeted at 'Early Language Lead Practitioners'. These provide audit tools to support the evaluation and development of a setting. Topics include: • the features of a communication friendly setting; • top tips for talking; • guidance on how to support children with English as an additional language • ideas on activities and structures for supporting children's learning and development; • effective practice in securing parental engagement. The model used in developing the materials is based on the Early Years Foundation Stage (EYFS) and evaluates the setting in terms of the four EYFS principles of: a unique child; positive relationships; enabling	**Target group** ☐ Speech ☐ **Language** ☐ Communication ☐ Complex needs **Age range** ☐ **Preschool** ☐ Primary ☐ Secondary **Focus of intervention** ☐ **Universal** ☐ Targeted ☐ Specialist **Delivered by** ☐ Specialist ☐ **Teacher** ☐ **Assistant** ☐ Other

environments; learning and development.

Delivery

The original method of delivering ECAT was through the appointment of a lead consultant within a local authority area who would support and train early language lead practitioners in their local settings. In turn these lead practitioners would support their setting to use ECAT. This would include the engagement of parents in the process. The materials are accessible and a setting could work its way through the materials without the support of an ECAT consultant or co-ordinator, although across the country, settings have linked into these consultants and coordinators to draw on their familiarity with the materials and expertise in the area of language.

The guidance documents are available on-line.

Level of Evidence

ECAT provided monitoring forms for participating sites. The original plan to carry out a national evaluation was not completed. However, in 2010, the National Strategies published data on nearly 80,000 children who were monitored. These data indicate reductions in the numbers of children who are judged to be behind or at risk of falling behind on the various parameters of the monitoring form, (listening and attention, receptive and expressive language and social skills). There was no control group of sites and the monitoring form was not nationally moderated. In the National Strategies report, one site (Peterborough) had compared ECAT and non-ECAT sites regarding the impact on home learning environment , hard to reach parents, parental involvement in learning and development, positive relationships and transitions. The ECAT sites were more likely to be performing better in these parameters.

The ECAT approach is one implemented across the country into a range of settings and has an **indicative** evidence level. It is a well regarded approach by practitioners. Within the evidence are positive outcomes in relation to ECAT sites across a range of measures. It is therefore a useful approach to consider, especially

Format

- Manual
- Approach
- Technique

Evidence rating

- Strong
- Moderate
- **Indicative**

when services determine where and when it is most effective for the children they work with. **References** Department for Children Schools and Families (2008). *Every child a talker: guidance for early language lead practitioners*. Nottingham: DCSF Publications. Department for Children Schools and Families (2009*). Every child a talker: guidance for early language lead practitioners; second instalment.* Nottingham: DCSF Publications. Department for Children Schools and Families (2009). *Every child a talker: guidance for early language lead practitioners; Third instalment*. Nottingham: DCSF Publications. Department for Education (2011) *The National Strategies 1997-2011. A brief summary of the impact and effectiveness of the National Strategies.* Nottingham: DfE. Centre for Excellence and Outcomes in Children's and Young People's Services (C4EO) theme: *Early Years*: http://www.c4eo.org.uk/themes/earlyintervention/vlpdetails.aspx?lpeid=200 .	

Title: **13. FAST FORWORD**

Description of aims and objectives

Fast ForWord (SLC, 2002) is a computerised intervention programme developed by the Scientific Learning Corporation. Fast ForWord aims to improve children's reading and oral language skills. It has been widely used in many English countries' schools and clinics, e.g. the USA, Canada and Australia. This software was inspired by a theory that claims language and literacy learning difficulties in children may be caused by impairment in rapid auditory temporal processing skills (Tallal & Piercy, 1973; Tallal, 2000).

Delivery

Fast ForWord is a software package containing language-based audio-visual games and designed for children aged between 4 and 14 years with language difficulties. These games are adaptive and interactive through speech that is acoustically modified and adapted with the child's progress, gradually decreasing modification. Fast ForWord also contains other language training elements, which are similar to those used by speech and language therapists. The reason to incorporate these elements is to 'cross-train' many different skills at the same time (Tallal, 2000). Cohen and his colleagues (2005) adapted Fast ForWord into a RCT study. In their study, the intervention session and duration are very specific.

"On days one through three, participants train on three exercises (a total of 60 minutes of training). On the fourth and fifth days, participants train on four exercises (a total of 80 minutes of training). Starting with the sixth day, participants train on five exercises (a total of 100 minutes of training)." (SLC, 2000, p. 95)

Level of evidence

Target group

- ☐ Speech
- ☐ **Language**
- ☐ Communication
- ☐ Complex needs

Age range

- ☐ Preschool
- ☐ **Primary**
- ☐ Secondary

Focus of intervention

- ☐ Universal
- ☐ Targeted
- ☐ **Specialist**

Delivered by

- ☐ **Specialist**
- ☐ Teacher
- ☐ Assistant
- ☐ Other

There are quite well-documented evidence-based studies and systematic reviews on Fast ForWord. However its efficacy has received little positive support. A recent systematic review (Strong, Torgerson, Torgerson and Hulme, 2011) analyses 6 selected RCT studies and claims no evidence to support Fast ForWord is effective as a treatment for children's oral language or reading difficulties. Similarly, Girrin and Gillam (2008) analysed 5 studies involved Fast ForWord and concluded that Fast ForWord "neither necessary nor sufficient to induce significant changes in processing or expressive and receptive language skills." Sisson (2009) reviewed 31 studies on Fast ForWord and concluded that this intervention has no particular effect on any of the skills they analysed. **This suggests that the evidence level is relatively strong but not in favour of Fast Forword.**

References

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Scientific Learning Corporation. (2000). *Guide to computer procedures: Training programs Fast ForWord, 4wd, Step4word.* Berkeley, CA: Scientific Learning Corporation..

Scientific Learning Corporation. (2002). How to use Fast ForWord\: A reference guide. Retrieved from http://www.scilearn.com/support2/tech/manuals/pdf/HowToUseFFW062602.pdf.

Sisson, C.B. (2009). A meta-analytic investigation into the efficacy of Fast ForWord intervention on improving academic performance (Doctoral dissertation, Regent University, 2009). Dissertation Abstracts International Section A: Humanities and Social Sciences, 69(12-A), 4633.

Strong, G. K., Torgerson, C. J., Torgerson, D., & Hulme, C.(2011). A systematic meta-analytic review of evidence for the effectiveness of the "Fast ForWord" language intervention program. *Journal of Child*

Format

- **Manual**
- Approach
- Technique

Evidence rating

- **Strong**
- Moderate
- Indicative

Psychology and Psychiatry, *52*, 224–235.
Tallal, P., & Piercy, M. (1973). Defects of non-verbal auditory perception in children with developmental aphasia*. Nature*, 241, 468–469.
Tallal, P. (2000). Experimental studies of language learning impairments: From research to remediation. In D.M.V. Bishop, & L.B. Leonard (Eds.), *Speech and language impairments in children* (pp.131–155). Hove: Psychology Press.

Title: **14. FOCUSSED AUDITORY STIMULATION**	
Description of aims and objectives This is a component of the 'Cycles' approach to remediation of very unclear speech (Hodson & Paden, 1991), though may also be used in combination with other different approaches to speech sound intervention. It is typically used with children who are young (between 3 and 6 years old), children who cannot make the target sound or are unwilling or unable to join in with other types of intervention. The focus of this intervention is on listening to sounds rather than making them, enabling the child to build up information they need about how speech sounds are organised into a system. This is important to support children's speech sound development and is done by listening to lots of repetitions of target sounds. . Within the cycles approach, sounds are typically said a little louder so that children become aware of the speech sounds they do not yet use and how they really sound. Theoretical support for this approach comes from different studies that showed that speech sounds (phonemes) which are heard most in a child's environment are typically used first (Ingram, 1986). Providing auditory stimulation for speech sound difficulties, either for an individual sound or pattern of difficulties can therefore increase the likelihood of a child acquiring the sound or sound pattern. **Delivery** Target speech sounds and patterns are identified from assessment and games, activities and stories which mean there are repeated examples of the target sound or pattern in a large variety of words. Activities are presented to the child as 'listening games' and children are encouraged to listen but not required to repeat the words. When used as part of the Cycles approach, the child may also be required to listen to 15-20 words, spoken by an adult and containing the target sound or pattern, each day and at	**Target group** □ **Speech** □ Language □ Communication □ Complex needs **Age range** □ **Preschool** □ **Primary** □ Secondary **Focus of intervention** □ Universal □ **Targeted** □ Specialist **Delivered by** □ **Specialist** □ Teacher □ Assistant □ Other

the beginning and end of each intervention session. **Level of evidence** Focused Auditory Input is a component of the cycles approach and readers are therefore guided to the levels of evidence described in the section on cycles. Lancaster et al., (2010) looked specifically at auditory input therapy delivered by parents following training. Five children received this intervention and were compared with two other groups of five children receiving either no treatment or clinician delivered eclectic intervention. All children included in the study had moderate to severe speech impairments and were randomly assigned to one of the three groups. Children in both intervention groups made significantly more progress than the children in the no-treatment group. The focused auditory stimulation technique has a **moderate** evidence level. Within the evidence are examples of significantly positive outcomes for children with severe speech difficulties. It is therefore a useful approach to implement where appropriate. **References** Hodsen, B. W. & Paden, E. P. (1991). *Targeting intelligible speech: A phonological approach to remediation* (2nd ed.). Austin, TX: PRO-ED. Lancaster, G., Keusch, S., Levin, A., Pring, T., & Martin, S. (2010). Treating children with phonological problems: Does an eclectic approach to therapy work? *International Journal of Language and Communication Disorders, 45,* 174-181.	**Format** ☐ Manual ☐ Approach ☐ **Technique** **Evidence rating** ☐ Strong ☐ **Moderate** ☐ Indicative

Title: **15. FOCUSSED STIMULATION**	
Description of aims and objectives Focused stimulation is a technique used to draw a child's attention to specific aspects of grammar or vocabulary. The idea with focused stimulation is to target a particular word, phrase, or grammatical form, and to use it repeatedly while interacting with the child. It sounds easy, and it is, mostly. It does take a little bit of planning and thinking ahead while you are interacting with your child, but if you use it often enough, it starts to become a habit. This is an illustration of focused stimulation targeting the use of *is* as a *copula*, or linking verb, with a child who frequently misses it out , for example *This mine* or *Where my hat?* You don't need to put a lot of stress on it in speech, although children should be able to hear it. "Where *is* my hat? "Where *is* it? "Oh, here it *is*. "Here *is* my hat. "Here it *is*. "It *is* in the drawer. "That *is* where it *is*." When you say this, the child hears *is* eight times in various positions within sentences. In the second sentence (*Where is it?*), *is* appears in a naturally stressed position; in the third and fifth (*(Oh), here it is*), *is* is the last word of the sentence. Stressed and final positions are very noticeable, so it's always a good idea to include a number of sentences with the target in a position such as this. Illustration taken from http://www.speech-language-development.com/focused-stimulation.html	**Target group** ☐ Speech ☐ **Language** ☐ Communication ☐ Complex needs **Age range** ☐ **Preschool** ☐ Primary ☐ Secondary **Focus of intervention** ☐ Universal ☐ **Targeted** ☐ **Specialist** **Delivered by** ☐ **Specialist** ☐ **Teacher** ☐ **Assistant** ☐ Other

Delivery This approach can be used by anyone with a responsibility for promoting language development. **Level of evidence** Focused stimulation has been incorporated into many interventions and has been the subject of at least one randomised controlled trial. The focused stimulation approach has a **moderate** evidence level. Within the evidence are examples of significantly positive outcomes for children with severe speech difficulties. It is therefore a useful approach to implement where appropriate. **References** Girolametto, L.., Pearce ,P.S. Weitzman, E. (1996).Interactive focused stimulation for toddlers with expressive vocabulary delays *Journal of Speech and Hearing Research 39,* 1274-1283. Donna L. Wolfe, D.L. & Heilmann, J. (2010). Simplified and expanded input in a focused stimulation program for a child with expressive language delay (ELD) Child Language Teaching and Therapy 26 335-346 doi: 10.1177/0265659010369286.	**Format** ☐ Manual ☐ Approach ☐ **Technique** **Evidence rating** ☐ Strong ☐ **Moderate** ☐ Indicative

Title: **16. GILLON PHONOLOGICAL AWARENESS PROGRAMME**	
Description of aims and objectives This programme targets **phonological awareness**, speech production and literacy skills in children aged 5-7 with speech impairment. The programme is based on the work of Gillon (2004). It impacts on **phonological awareness** through targeting rhyme, phoneme analysis, phoneme identity, segmentation, blending and manipulation. Simultaneously, linking speech to print is targeted through activities to support the following • children saying which letters represent which speech sounds, (grapheme phoneme conversion), • blending the sounds into a word(decoding) and • listening for the sounds and deciding which letters represent those phonemes (encoding). The programme details all activities to be carried out with clear instructions on how to complete them. All activities and materials are contained within the pack. It is intended that the activities are worked through in an integrated manner, with a range of activities covered in each session as appropriate to each child's level of ability. Ideas and guidance on how to use the programme in a classroom setting and in collaboration with teachers are provided. **Delivery** The programme was designed to be delivered by a Speech and Language Therapist (SLT) in 2 one hour individual sessions a week for 20 hours. However, the documentation states that the approach can be adapted to suit other populations and models of service delivery. Moreover there are reports of its	**Target group** □ **Speech** □ Language □ Communication □ Complex needs **Age range** □ **Preschool** □ **Primary** □ Secondary **Focus of intervention** □ Universal □ **Targeted** □ Specialist **Delivered by** □ **Specialist** □ Teacher □ Assistant □ Other

successful use with children with visual impairments and for use in group settings with SLTs working with teachers. The programme is available for free download http://www.education.canterbury.ac.nz/people/gillon/programme%20booklet%20%202008.pdf . **Level of Evidence** The programme was designed for a research intervention study funded by the New Zealand Foundation for Research Science and Technology. The research investigated phonological awareness training effects on the phonological awareness ability, speech production, and literacy development of 91 5- to 7-year-old New Zealand children with spoken language impairment (Gillon, 2000). The results from the research project suggested that the programme content based on these principles proved highly effective in developing the phonological awareness and reading ability of children with spoken language impairment. Improvements in the children's speech production skills were also evident following training (Gillon, 2000). Follow-up assessment 11 months post intervention revealed that the benefits of the programme were maintained over time (Gillon, 2002). Aside from this particular programme, phonological awareness training more generally is used widely to promote development in speech and literacy skills and positive reports have also been written up in peer review journals suggesting moderate evidence for this approach. The phonological awareness approach and the Gillan programme in particular has a **moderate** evidence level. Within the evidence are examples of significantly positive outcomes for children with speech difficulties. It is therefore a useful approach to implement where appropriate. **References** Gillon, G. (2004). *Phonological awareness: From research to practice*. New York: The Guilford Press.	**Format** ☐ **Manual** ☐ Approach ☐ Technique **Evidence rating** ☐ Strong ☐ **Moderate** ☐ Indicative

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Title: **17. THE HANEN EARLY LANGUAGE PARENT PROGRAMME**	
Description of aims and objectives Hanen is a language intervention programme putting parents' involvement into children language development. http://www.hanen.org/ . Designed by Ayala Hanen Manolson in 1975, a speech and language therapist in Montreal, Canada, it is aimed at children with language difficulties. The official names of Hanen are It Takes Two to Talk® and The Hanen Program® for Parents of Children with Language Delays. The Hanen Program for Parents is administered to families by professional speech and language therapists. A parent who has a child with language delay completes an 11-week program. The programme includes eight sessions to teach the parents program strategies and three home visits to provide parents with individual feedback (Girolametto, Pearce and Weitzman, 1996). The home visits are conducted by the speech and language therapists. During these home visits, the parents are filmed interacting with their children in free play and these videos are reviewed by parents and the speech and language therapists to enable immediate feedback. The Hanen Program uses a number of different techniques to engage parents in participative lectures, role plays and focused discussions. In addition, Hanen has developed programs "Learning language and loving it" and "It takes two to talk" for educators and teachers in preschool level. **Delivery** Originally designed for parents to play a primary role in children language development, the Hanen Program for Parents is conducted by the parents under the speech and language therapists' guidance. These therapists are certified to administrate the programme by the Hanen Centre in Toronto. The	**Target group** ☐ Speech ☐ **Language** ☐ **Communication** ☐ Complex needs **Age range** ☐ **Preschool** ☐ Primary ☐ Secondary **Focus of intervention** ☐ Universal ☐ **Targeted** ☐ **Specialist** **Delivered by** ☐ **Specialist** ☐ **Teacher** ☐ **Assistant** ☐ **Other**

session of teaching program strategies generally happen in the Hanen Centre. During the home visits, on-the-spot coaching is provided to parents by a speech and language therapist.

Level of Evidence

Researchers have used efficacy experiment design to examine the Hanen Program for Parents. The parent-child interaction pattern promoted by the Hanen program has been demonstrated positive or no less effective than traditional speech and language therapist mode at least (Baxendale & Hesketh, 2003). There are also a number of studies of its use with specific groups of participants, e.g. children with cerebral palsy (Pennington et al., 2009), children with motor disorders (Pennington and Thomson, 2007), cochlear implants (Paganga et al., 2001). In particular a systematic review on intervention on children with cerebral palsy (Whittingham, Wee & Boyd, 2011) calls for a RCT study though the present evidence suggests that the Hanen Program "may be an effective intervention for parents of children with CP". In addition, some efficacy studies on the other Hanen Programmes e.g. for early years practitioners and teachers, also have been carried out (Coulter & Gallagher, 2001).

The Hanen intervention has a **moderate** evidence level. Within the evidence are examples of significantly positive outcomes for children with language difficulties. It is therefore a useful approach to implement where appropriate.

References

Baxendale, J. & Hesketh, A. (2003). Comparison of the effectiveness of the Hanen Parent Programme and traditional clinic therapy. *International Journal of Language and Communication Disorder*..*38(4)*,397-415.

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Format

- **Manual**
- Approach
- Technique

Evidence rating

- Strong
- **Moderate**
- Indicative

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Paganga, S., Tucker, E., Harrigan, S., & Lutman, M. (2001). Evaluating training courses for parents of children with cochlear implants. *International Journal of Language and Communication Disorders. 36*, 517-522.

Pennington, L., & Thomson, K. (2007). It Takes Two to Talk - The Hanen Program (R) and families of children with motor disorders: a UK perspective. *Child: Care Health and Development*. *33*, 691-702.

Pennington, L., Thomson, K., James, P., Martin, L., & McNally, R. (2009). Effects of It Takes Two to Talk-The Hanen Program for parents of preschool children with cerebral palsy: Findings from an exploratory study. *Journal of Speech Language and Hearing Research, 52*, 1121-1138.

Whittingham, K., Wee, D. & Boyd, R. (2011). Systematic review of the efficacy of parenting interventions for children with cerebral palsy. *Child: Care Health and Development.37*, 475-482.

Title: **18 ICAN EARLY TALK 0-3; PRIMARY TALK; SECONDARY TALK**	
Description of aims and objectives These four programmes, developed and delivered by I CAN, are designed to support services, settings, practitioners and parents to support the speech, language and communication development of children and young people. Each one targets a particular age group and the related settings. Each one is configured slightly differently to reflect the age group and settings but they contain similar components and approaches. Each programme provides training, support and advice, mentoring and accreditation. Early Talk, Primary Talk and Secondary Talk are all available at three levels: • supportive/universal, • enhanced and • specialist reflecting the levels of needs of the children targeted. Settings can achieve accredited status with I CAN; Standards for achieving accredited status are available on I CAN's website . **Delivery** The programmes are delivered at all three tiers. They are overseen by specialists but delivered by classroom teachers and assistants. **Level of evidence.** Early Talk 0-3 and Early Talk and Secondary Talk were independently evaluated (OPM, 2011; Whitmarsh, Jopling & Hadfield, 2010; Clegg, Leyden & Stackhouse, 2011) when the programmes were being piloted in local authority sites. The service evaluations used a multimethod approach with a	**Target group** ☐ **Speech** ☐ **Language** ☐ **Communication** ☐ Complex needs **Age range** ☐ **Preschool** ☐ **Primary** ☐ **Secondary** **Focus of intervention** ☐ **Universal** ☐ **Targeted** ☐ **Specialist** **Delivered by** ☐ **Specialist** ☐ **Teacher** ☐ **Assistant** ☐ **Other**

combination of interviews, observations, focus groups, surveys and case studies. The evaluations found evidence of professional learning resulting in increased awareness of SLCN amongst practitioners and changes to classroom practice and interaction with pupils; some parents reported that that they had changed their activities with their child. Direct impact on the children's speech, language and communication was not included in the evaluations. The I CAN Early Talk 0-3 and Early Talk and Secondary Talk approaches have an **indicative** evidence level. Although there is no direct impact measure on children's SLCN, other measures showed positive changes to practice. It is therefore a useful approach to consider, especially when services determine where and when it is most effective for the children they work with. **References:** OPM (2011). Summary report: evaluation of I CAN's Early Talk 0-3 programme. Available at http://www.ican.org.uk/. Clegg, J. Leyden, J. & Stackhouse, J. (2011). An evaluation of Secondary Talk. University of Sheffield. Whitmarsh, J., Jopling, M. & Hadfield, M. (2010).. *I CAN's Early Talk Programme: Independent evaluation of the impact of early talk on addressing speech, communication and language needs in Sure Start Children's Centre Settings. Research report DFE- R077*.Nottingham: Department for Education.	**Format** □ Manual □ **Approach** □ Technique **Evidence rating** □ Strong □ Moderate □ **Indicative**

Title: **19. INTENSIVE INTERACTION**	
Description of aims and objectives Intensive Interaction is based on the work of Nind and Hewett (eg Nind & Hewett, 2006) and is an approach to developing interaction and communication between people with complex communication needs and the people around them. The approach is suitable for people who are at the very early stages of communication. It is based on the highly responsive, individualised interactions seen between babies and their caregivers, who respond to noises, actions that babies make and interpret this as communication. In intensive interaction adults interact with children and young people by responding to them in this very responsive way, imitating their behaviour, mirroring what they do as a starting point to communication and interaction. This does not necessarily mean verbal interaction **Delivery** Delivery is generally one-to-one or in small groups. An individual's attention is gained by imitating or "mirroring" his or her actions and vocalisations, this then builds into a sequence of interactions which progresses slowly over time. During the interactions the individual learns the basics of communication (getting a response and responding, reading and using facial expressions, body language, eye contact, turn-taking, vocalising).One of the most important things an individual learns through the process is that other people are good to be with and that other people enjoy being with them. Detailed information on how to use intensive interaction can be found in the books written by Nind and Hewitt. There are many regional and national events and training courses and a website dedicated to intensive interaction http://www.intensiveinteraction.co.uk/ **Level of evidence:**	**Target group** ☐ Speech ☐ Language ☐ Communication ☐ **Complex needs** **Age range** ☐ **Preschool** ☐ **Primary** ☐ **Secondary** **Focus of intervention** ☐ Universal ☐ Targeted ☐ **Specialist** **Delivered by** ☐ **Specialist** ☐ **Teacher** ☐ **Assistant** ☐ **Other**

Most current evidence is from case studies. A 2006 review found that “the current body of research has been limited in scope and scale, and has generally been conducted by a small number of Intensive Interaction practitioners and advocates. However, increased client social responsiveness was consistently reported across the research projects reviewed.” A recent review by Goldbart and Caton (2010) said there is “a growing body of formal evaluations of Intensive Interaction, though these tend to be relatively small-scale studies and an extensive amount of professional and practitioner literature on Intensive Interaction, as well as web-based resources.” The intensive interaction technique has an **indicative** evidence level, due to limited scope and scale of research. Within the evidence are positive outcomes for relatively small numbers of children. It is therefore a useful approach to consider, especially when services determine where and when it is most effective for the children they work with. **References :** Nind, M & Hewett, D (2006). *Access to Communication.* 2nd Edition, London: David Fulton. Firth, G. (2006). *Intensive Interaction: a research review. Mental Health and Learning Disabilities Research and Practice*, *3 ,*. . 53-62. Leaning, L. & Watson, T. (2006). From the inside looking out –an Intensive Interaction group for people with profound and multiple learning disabilities. *British Journal of Learning Disabilities 34;. 103-109.* Kellett, M. & Nind, M. (2003) Implementing Intensive Interaction in Schools: Guidance for Practitioners, Managers and Coordinators. London: David Fulton. Goldbart, J & Caton, S (2010). Communication and people with the most complex needs: What works and why this is essential. Research Institute for Health and Social Change Manchester Metropolitan University (MMU) http://www.netbuddy.org.uk/static/cms_page_media/52/Communication.pdf.	**Format** ☐ Manual ☐ Approach ☐ **Technique** **Evidence rating** ☐ Strong ☐ Moderate ☐ **Indicative**

Title: **20. LANGUAGE FOR THINKING**	
Description of aims and objectives The aim of Language for Thinking is to support the development of children's higher level language skills. It is based on the work of Marion Blank which categorised the different ways in which adult's talk can be easy or difficult for children to understand and respond to. These categories were then used to develop "levels of questioning" (Blank, Rose & Berlin 1978), moving from very concrete language, for example questions relating to things in the here and now "what is that?" through to talk that is much more abstract and demands more detailed thinking, such as questions asking students to predict or justify why something is happening " what would happen if...?" Language for thinking uses these principles to support the development of verbal reasoning and inferencing skills.The resource aims to provide a clear structure to help teachers, SENCOs, learning support assistants and speech language therapists in developing children's language from the concrete to the abstract. **Delivery** Language for Thinking is based on fifty picture and verbal scenarios that can be used with individual children, in small groups or can form the basis of a literacy lesson or speech language therapy session. Question sheets are carefully structured to promote children's development of inference, verbal reasoning and thinking skills. There are three parallel assessments of spoken and written language which can be used to assess each child's starting level and then to monitor progress; score forms and worksheets for each lesson are included. Universal staff would benefit from the support of speech and language therapists when using the resource with children who have specific language needs.	**Target group** □ Speech □ **Language** □ Communication □ Complex needs **Age range** □ Preschool □ **Primary** □ Secondary **Focus of intervention** □ Universal □ **Targeted** □ **Specialist** **Delivered by** □ Specialist □ **Teacher** □ **Assistant** □ Other

The Language for thinking book contains information and materials to support the approach and training is available for professionals working with children who have speech, language and communication needs. See www.thinkingtalking.co.uk **Level of evidence** Evidence has yet to be published, but positive results have been recorded when Language for Thinking was used as a Targeted intervention over a six week period with ten Year 1 children in a mainstream primary school. Informal feedback from a large number of teachers, support staff and Speech and Language Therapists has been extremely positive and it is a resource extensively used by speech and language therapists The language for thinking intervention has an **indicative** evidence level. It is included here because of the strength of its face validity and significant use in practice and there have been positive outcomes for children identified in currently unpublished research. It is therefore a useful approach to consider, especially when services determine where and when it is most effective for the children they work with. **References** Parsons, S. & Branagan, A. (2005). Language for Thinking: A structured approach for young children. Milton Keynes, UK: Speechmark. Blank M, Rose S & Berlin L (1978). The language of learning: the preschool years New York: Grune and Stratton.	**Format** ☐ **Manual** ☐ Approach ☐ Technique **Evidence rating** ☐ Strong ☐ Moderate ☐ **Indicative**

Title: **21. LETS LEARN LANGUAGE**	
Description of aims and objectives Let's Learn Language is a programme developed in Australia at the Royal Children's Hospital, Melbourne. It is a parent language promotion training programme modified from the Hanen parent programme 'You Make a Difference'. It was targeted at children aged 18 months with delayed expressive language in a community sample. The programme covers similar content and processes to the Hanen programme and uses videotaped sessions of the parents interacting with their child as a basis for the programme. The programme aimed to reduce early language delay and behaviour problems related to early language delay. The programme promotes child centred interactions, which take the child's lead and parents "modelling" language when responding to their children. Particular sessions covered the following: • following the child's interests during interactions; • sustaining interaction with the child – keeping it going; • extending information shared with the child • increasing the language used; • applying principles in everyday play and in reading. **Delivery,** The intervention was delivered in six weekly, two hour sessions. So the main modification from the Hanen 'You make a difference' is in the number of sessions and the overall length of time that parents spend with the trainer. The trial used a guidebook and video and provided training workshops for programme leaders **Level of Evidence** A randomised controlled trial was used to compare the impact of the programme with usual care. Children	**Target group** □ Speech □ **Language** □ Communication □ Complex needs **Age range** □ **Preschool** □ Primary □ Secondary **Focus of intervention** □ **Universal** □ **Targeted** □ Specialist **Delivered by** □ Specialist □ Teacher □ **Assistant** □ Other

were followed –up at the age of two and three years. Although parents reported positive outcomes for themselves and their children, no differences were observed between the children in the control and experimental groups on measures of expressive and receptive language and behaviour. The evidence level is at a **moderate** level, but this programme with this level of intensity at this age is therefore not supported by the evidence. **References** Sheehan, J., Girolametto, L., Reilly, S., Ukoumunne O.C., Price, A., Gold, L., Weitzman, E. & Wake, M.,2009). Feasibility of a language promotion program for toddlers at risk. *Early Childhood Services: An Interdisciplinary Journal of Effectiveness, 3,33*-50. Wake, M, Tobin, S, Girolametto, L, Ukomunne, O, Gold, L, Levickis, P, Sheehan, J, Goldfeld, S, & Reilly, S. (2011). Outcomes of population-based language promotion for slow-to-talk toddlers at ages 2 and 3 years: The *Let's Learn Language* cluster randomised controlled trial. *British Medical Journal* 343:d4741 doi:10.1136/bmj.d4741. .	**Format** ☐ **Manual** ☐ Approach ☐ Technique **Evidence rating** ☐ Strong ☐ **Moderate** ☐ Indicative

Title: **22. LET'S TALK**

Description of aims and objectives

The 'Let's Talk' programme was developed by specialist teachers and speech and language therapists in the Midlands. It aims to raise awareness of speech, language and communication in primary schools and to develop the confidence and skills of teaching staff in identifying and responding to the needs of children with SLCN.

Training is delivered by a specialist language teacher, a language support teacher and two speech and language therapists. The training is delivered to several key staff within a school via language groups for children. Examples of the strategies taught include

- the modification of teacher language,
- the use of visual cues,
- pausing and modelling.

In the comparative trial of Let's Talk with a control group, eight weekly language groups, lasting approximately 30 minutes each, were delivered by a teacher or teaching assistant who had received training within the Let's Talk programme.

Levels of evidence

An evaluation on the programme identified that teachers perceived it as an effective training programme. Subsequently, twelve children who attended groups within schools on the Let's Talk programme were compared with twelve children who did not have access to such groups (Hutchinson & Clegg, 2011). The schools were primary schools and the children were in Key Stage 1. Children in the intervention groups made significant gains in expressive language (sentence length, information quality and quantity and the use of subordinate clauses) compared to the control group. No differences were found between the groups

Target group

- ☐ Speech
- ☐ **Language**
- ☐ Communication
- ☐ Complex needs

Age range

- ☐ Preschool
- ☐ **Primary**
- ☐ Secondary

Focus of intervention

- ☐ **Universal**
- ☐ Targeted
- ☐ Specialist

Delivered by

- ☐ **Specialist**
- ☐ **Teacher**
- ☐ Assistant
- ☐ Other

on receptive vocabulary as measured by the British Picture Vocabulary Scale, although the scores obtained at baseline by both groups were within the typically developing range. This is a relatively small trial with only a short term follow-up; evidence can therefore be regarded as indicative. The Let's Talk approach has an **indicative** evidence level. Within the evidence are positive outcomes in expressive language in particular. It is therefore a useful approach to consider, especially when services determine where and when it is most effective for the children they work with. **References** Hutchinson, J & Clegg, J (2011). Education practitioner led intervention to facilitate language learning in young children: an effectiveness study *Child Language Teaching and Therapy* 27: 151.	**Format** ☐ Manual ☐ **Approach** ☐ Technique **Evidence rating** ☐ Strong ☐ Moderate ☐ **Indicative**

Title: **23. THE LIDCOMBE PROGRAMME**

Description of aims and objectives

The Lidcombe Program is a behavioural treatment for young children who stutter. The program takes its name from the suburb of Sydney where the Australian Stuttering Research Centre is located, at The University of Sydney. Its website is

http://sydney.edu.au/health_sciences/asrc/clinic/parents/lidcombe.shtml

The Lidcombe Program is conducted in two stages.

During Stage 1, the parent conducts the treatment each day and the parent and child attend the speech clinic once a week. During these visits, the speech and language therapist teaches the parent by demonstrating various features of the treatment, observing the parent do the treatment, and giving the parent feedback about how they are going with the treatment. This continues until stuttering either disappears or reaches an extremely low level which is rated by parents and a Lidcombe trained speech and language therapist. “On average it takes about 12 visits to the clinic to get to the point where stuttering has gone or is at an extremely low level” (Lidcombe website, 2011).

The aim of Stage 2 is to keep stuttering away for at least one year. The use of parent feedback during Stage 2 is reduced, as is the number of clinic visits, providing that stuttering remains at the low level it was at the start of Stage 2.

All essential features of the treatment are set out in the Lidcombe Program Manual (Packman et al.2011). Lidcombe Program can be adjusted to suit each child and family.

Delivery

The treatment is administered by a parent or carer in the child's everyday environment. The parent

Target group

- **Speech**
- Language
- Communication
- Complex needs

Age range

- **Preschool**
- **Primary**
- Secondary

Focus of intervention

- Universal
- **Targeted**
- Specialist

Delivered by

- **Specialist**
- Teacher
- Assistant
- Other

comments directly about the child's speech. The parent comments primarily when the child speaks without stuttering and only occasionally when the child stutters. The parent does not comment on the child's speech all the time, but chooses specific times during the day in which to give the child feedback.

Level of Evidence

The Lidcombe Program's efficacy and effectiveness have been investigated in a number of RCTs and quasi-experimental studies (Franken, Kielstra-Van der Schalk, & Boelens, 2005; Bothe et al., 2006). A recent systematic review (Nye & Hahs-Vaugh, 2011) found a total of six of the 13 child-focused stuttering treatments employed Lidcombe Program's studies. However, it also pointed out that "some critics might argue that the majority of these studies originated with researchers directly connected to the Lidcombe Program development and promotion, thus allowing for a potential reporting bias."

The Lidcombe approach has a **strong** evidence level. Within the evidence are examples of significantly positive outcomes for children with who stammer. It is therefore a useful approach to implement where appropriate

References

Bothe, A. K., Davidow, J. H., Bramlett, R. E., & Ingham, R. J. (2006). Stuttering treatment research 1970-2005: I. Systematic review incorporating trial quality assessment of behavioral, cognitive, and related approaches. *American Journal of Speech-Language Pathology*. *15 (4)*, 321-341.

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Format

- Manual
- **Approach**
- Technique

Evidence rating

- **Strong**
- Moderate
- Indicative

experimental trials: A summary of stuttering treatment research. *International Journal of Speech-Language Pathology. 13,* 49-60.	

Title: **24. LIVING LANGUAGE**

Description of aims and objectives

Living language is “a remedial programme for teaching spoken language”. (Locke 1985). It is a theoretically derived and highly structured developmental programme which is intended to mirror the way that children normally learn language. It breaks language down into its basic components of vocabulary and syntax and “includes the essential words and constructions which children need to know if they are to relate to people they come into contact with, and learn from their environment, especially in school.” The Living Language programme emphasises the need for specific oral language lessons. It is made of a

- Pre-language programme “Before Words” which includes items for social and emotional development, play, listening skills and expressive skills,
- a starter programme ”First Words” which is based on a core vocabulary of 100 common single words and the
- Main Programme “Putting Words Together” which has word lists related to objects and events, properties and relationships (such as colour, size, quantity, etc) and syntax. Language learning is then divided into three stages – acquaintance, understanding and use. Although the author maintains that these phases cannot be “rigidly separated.”

One of the key features of living language is the focus on monitoring the performance of the children – “all language learning should be checked systematically on a week-by-week basis.” This leads to a triple checking procedure recording progress. The first stage is to identify items which do and do not need to be taught, the second after systematic teaching to check progress and the third

Target group

- Speech
- **Language**
- Communication
- Complex needs

Age range

- **Preschool**
- **Primary**
- Secondary

Focus of intervention

- **Universal**
- **Targeted**
- Specialist

Delivered by

- Specialist
- **Teacher**
- **Assistant**
- Other

a check back at the start of each term of all items learned”

Delivery

Living Language is intended for use in schools for teachers, teaching assistants and specialists such as speech and language therapists. In practice it has often been used in a combination of ways, introduced by speech and language therapists and tailored to the curriculum in a given school or according to the needs of a particular curriculum activity. It is intended both for use with children with specific difficulties and for use across whole classes. The materials are no longer available from the publishers but remain in common use. It has been replaced by another programme Teaching Talking (Locke & Beech 2005) which shares many of the characteristics of Living Language but further places the intervention programme within the educational context in the UK.

Level of Evidence

Despite the strong focus on monitoring change and measuring outcomes living language has never been formally evaluated over the many years that it has been widely used in the UK. The Living Language intervention has an **indicative** evidence level. It is included here because of the strength of its face validity and continued use in practice. It is therefore seen a useful approach to consider, especially when services determine where and when it is most effective for the children they work with.

References

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Format

- **Manual**
- Approach
- Technique

Evidence rating

- Strong
- Moderate
- **Indicative**

Title: **25. MAKATON**

Description of aims and objectives

Makaton is a language programme using signs and symbols to help people communicate . It is aimed at adults and children with learning difficulties although it has been used more widely with children learning to speak. These considerations have contributed to the design of the Makaton Vocabulary, which incorporates four basic operating principles:

1. Focus on the teaching of a small, core vocabulary of highly functional words.
2. Organization of the vocabulary into a sequence of communicative priorities, within stages.
3. Personalization of the vocabulary to suit individual needs. (Walker 1990).
4. The combined use of the different approaches of speech, manual sign and picture symbol.

It gives people the means to express themselves, engage with others, be included in everyday life, take part in education, access information and services and ultimately achieve their full potential. The Makaton organisation provides extensive training to parents, carers and professionals for the use of its resources through a network of tutors. The website maintains “Today over 100,000 children and adults, use Makaton symbols and signs, either as their main method of communication or as a way to support speech”. The Makaton organisation indicates that the system has been adapted for use in nearly fifty countries around the world. Makaton materials and a database of resources are available.

Delivery

The programme was devised as a means of promoting non-verbal communication. Beyond the initial training there is no standard way of delivering the programme which tends to be integrated into other

Target group

- Speech
- Language
- **Communication**
- **Complex needs**

Age range

- **Preschool**
- **Primary**
- **Secondary**

Focus of intervention

- Universal
- **Targeted**
- Specialist

Delivered by

- **Specialist**
- **Teacher**
- **Assistant**
- Other

activities. A level of training is required before Makaton can be implemented. Although it can be used with individuals it is generally recommended that, for the sake of consistency, it be used by all those interacting with the child.

Level of Evidence

Researchers rarely use traditional efficacy designs when examining interventions intended for those with learning difficulties. Of those that have the results have been mixed. For example, a study of a symbol system given to randomly allocated adults with learning disability suggested that there was not real advantage of Makaton over a written system to aid understanding (Poncelas & Murphy 2007). Yet Makaton has excellent face validity as demonstrated by its very wide use. There a number of descriptions of its use with different groups of participants and it is often used as an adjunct to specific therapies. (Bickford-Smith, Wijayatilake & Woods 2005) and with specific groups of participants such as those with autism where use of Makaton has been shown to have a positive effect on development of receptive and expressive language and in enhancing social behaviour (Lal 2010).

The Makaton approach has a **moderate** evidence level. Within the evidence are examples of significantly positive outcomes for children with severe speech difficulties. It is therefore a useful approach to implement where appropriate.

References

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Format

- Manual
- **Approach**
- Technique

Evidence rating

- Strong
- **Moderate**
- Indicative

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Lal, R (2010). Effect of alternative and augmentative communication on language and social behavior of children with autism *Educational Research and Reviews, 5(3),* pp. 119-125.

Poncelas, A & Murphy G (2007). Accessible information for people with intellectual disabilities: Do symbols really help? *Journal of Applied Research in Intellectual Disabilities* 20, 466–474, DOI: 10.1111/j.1468-3148.2006.00334.x.

Title: **26. MAXIMAL OPPOSITIONS**	
Description of aims and objectives This approach is based on analyses of what children know about the adult phonological system and what they need to learn as a guide to target selection (Gierut, 1992; Gierut, 2001; Gierut, Elbert & Dinnsen, 1987). The theory behind the approach argues that more complex linguistic input will promote greater change in a child's phonological system. Intervention begins with an assessment of a child's productive phonological knowledge (PPK) based on a single word naming task. Children can have one of six types of PPK on a continuum ranging from most knowledge (accurate production of phonemes across all word positions and in all morphemes) to least knowledge (reduced phonetic inventory). Targets for intervention are selected on the basis that they are more, rather than less, complex for the child. This is in contrast to the more typical driver for target selection which proposes that targets are selected in a developmental sequence and thus, are generally less rather than more complex for the child. With the complexity approach, phonemes and clusters which are developmentally more complex will be selected over those that are developmentally simple (e.g. /l/ rather than /t/). The rationale for this is that choosing more complex sounds and words is more likely to evoke system wide change in the target and also in all simpler phonemes/clusters. Words which are considered complex include high frequency words and words from low density neighbourhoods (i.e. words which contain phonemes which differ maximally in their phonetic structure). Sounds which are non-stimulable are also considered more complex. Intervention within the complexity approach typically uses contrastive techniques similar to that of minimal	**Target group** □ **Speech** □ Language □ Communication □ Complex needs **Age range** □ **Preschool** □ **Primary** □ Secondary **Focus of intervention** □ Universal □ Targeted □ **Specialist** **Delivered by** □ **Specialist** □ Teacher □ Assistant □ Other

pair therapy. However the contrasts are selected because they differ maximally (in terms of the number of distinctive features) from the target rather than minimally, leading to the term 'Maximal Opposition Therapy'. Thus the phoneme /s/, which is absent from the child's inventory, may be contrasted with /m/ which is present in the child's inventory and which differs in terms of manner, place and voice, rather than /t/ which differs in manner only. Another variant of this approach is the 'Treatment of the Empty Set' in which two sounds which are absent from the child's inventory are contrasted in intervention.

Delivery

Studies using maximal oppositions or treatment of the empty set have typically delivered the intervention in one-to-one sessions for 30-60 minutes, three times a week. Though other models of delivery have not been tested, they could also work. Prior to intervention, eight non-word pairs are developed based on the targets and contrasts selected. Intervention begins with imitation followed by spontaneous production and this continues till specified levels of accuracy are achieved. Activities used to carry out imitation and spontaneous naming include drill and play based tasks such as sorting, matching and story-telling.

Level of Evidence

A number of studies have been reported in the literature which have investigated a range of aspects within complexity theory including maximal oppositions, treatment of the empty set and targeting of more complex singleton consonants and clusters over simpler ones. A number of case studies and quasi-experimental designs using single cases have found support for the variety of approaches based on principles of complexity; there has also been one controlled study without randomisation (Mota et al., 2007) and two randomised controlled studies (Dodd et al., 2008; Rvachew & Nowak, 2001). Mota et al.'s study compared the progress of 21 children who received one of three interventions including maximal oppositions and noted that all three interventions were equally effective. Dodd et al.'s study of 19 children, randomly assigned to either minimal or a modified version of the maximal oppositions approach found

Format

- Manual
- **Approach**
- Technique

Evidence rating

- Strong
- **Moderate**
- Indicative

that there was no difference in outcome between the two groups therefore questioning the value of selecting maximal oppositions as targets. Finally, Rvachew and Nowak in their study of 48 children found that selecting later developmental targets rather than earlier did not replicate the positive findings that Gierut and her team had found in their smaller scale studies.

In summary, while a number of studies have been carried out exploring various aspects of the complexity approach, the evidence is equivocal and more comparative and large scale studies are needed to quantify the possible benefit of targeting more complex phonemes in intervention.

The maximal oppositions approach has a **moderate** evidence level. However, the outcomes for children are mixed, with some positive results, some comparable with other approaches and some not as positive. It is therefore a useful approach to consider, though services should determine where and when it is most effective for the children they work with, particularly in relation to other approaches.

References

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Title: **27. MEANINGFUL MINIMAL CONTRAST THERAPY**	
Description of aims and objectives Meaningful Minimal Contrast Therapy (MMCT) is one of a number of contrast therapies (maximal oppositions, multiple oppositions, treatment of the empty set) which have evolved over the last two decades. The common aim of all these therapies is improved speech production in children with phonological impairment. Conventional minimal pair intervention (Weiner et al., 1981; Blache et al., 1981) works on the premise that confronting a child with pairs of words that show them the way they are saying a word does not reflect the meaning helps them understand their errors and make changes in their speech. For example if a child says t instead of k – you would show them two pictures- tea and key. Because of their speech difficulties, they would say them both as tea. Pointing out the differences in a systematic way can support changes in the child's system of speech sounds. A minimal pair is defined as a set of words that differ by a single speech sound which is sufficient to change the meaning. Typically the speech sounds contrasted in these word pairs will contain only small differences from a speech point of view (e.g. tip v sip where the only feature difference is frication). Recent investigations have suggested this approach is most suited to children with mild to moderate phonological impairment (Tyler et al., 1987). Minimal pair intervention focuses on only one error pattern at a time making it less suitable for children with lots of different processes in their speech. It has also been suggested that it is more suited to children with consistent rather than inconsistent errors (Crosbie et al., 2005). **Delivery** Typically individual or group intervention is provided which is SLT led and supported by parents or teaching	**Target group** □ **Speech** □ Language □ Communication □ Complex needs **Age range** □ **Preschool** □ **Primary** □ Secondary **Focus of intervention** □ Universal □ Targeted □ **Specialist** **Delivered by** □ **Specialist** □ Teacher □ Assistant □ Other

staff. Multiple versions of the MMCT have been tested and reported in the literature making it difficult to describe a typical or optimum delivery. Baker (2010) identifies two distinct versions of the approach: those based on the early studies which move directly to production of contrasts (Abraham, 1993; Blache et al., 1981; Weiner, 1981); and those which employ perception practice prior to imitation and spontaneous production (Crosbie et al., 2005; Elbert et al., 1990, 1991; Tyler, 1987, 1990).

Level of Evidence

MMCT has possibly been investigated more than any other intervention for speech production over three decades. Baker (2010) identified 42 different studies including 25 quasi-experimental designs (21 single case experimental designs and 4 group studies) and 15 case studies. Two additional studies provide stronger evidence: Ruscello et al., (1993) used a minimal pairs approach in a RCT with 12 children aged 4 to 5 while Dodd et al., (2008) also used a RCT design to compare minimal versus non-minimal pairs with a sample of 19 children. In both cases the results favoured the MMCT intervention.

The MMCT approach has a **moderate** evidence level. Within the evidence are examples of significantly positive outcomes for children with speech difficulties. It is therefore a useful approach to implement where appropriate.

References

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Format

- Manual
- **Approach**
- Technique

Evidence rating

- Strong
- **Moderate**
- Indicative

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Elbert, M., Powell, T.W., & Swartzlander, P. (1991). Toward a technology of generalization: How many exemplars are sufficient? *Journal of Speech and Hearing Research, 34,* 81-87.

Ruscello, D.M., Cartwright, L.R., Haines, K.B. & Shuster, L.I. (1993). The use of different service delivery models for children with phonological disorders. *Journal of Communication Disorders, 26,* 193-203.

Tyler, A., Edwards, M. & Saxman, J.H. (1987). Acoustic validation of phonological knowledge and its relationship to treatment. *Journal of Speech and Hearing Disorders, 55,* 251-261.

Tyler, A., Edwards, M. & Saxman, J.H. (1990). Acoustic validation of phonological knowledge and its relationship to treatment. *Journal of Speech and Hearing Disorders, 55,* 251-261.

Weiner, F.F. (1981). Treatment of phonological disability using the method of meaningful minimal contrast: Two case studies. *Journal of Speech and Hearing Disorders, 46,* 97-103.

Title: **28. METAPHON**	
Description of aims and objectives Metaphon (Dean, Howell, Hill & Waters, 1990; Dean, Howell, Waters & Reid, 1995) is a cognitive-linguistic treatment that aims to increase metalinguistic awareness as a means of improving phonological change and speech sound production (Gierut, 1998). Metaphonetic (child's own awareness of speech sounds) skills are taught to improve a child's awareness of the properties of the sound system. Similar to Minimal Pairs treatment, this approach highlights the contrasts among speech sounds and sound properties. Metaphon places emphasis on the child being an active participant in the intervention process (Hulterstam, 2002). Furthermore, it provides an opportunity for the child to learn by experience e.g. if the child makes pronunciation errors he/she will be faced with communicative breakdowns. The child learns to self monitor and correct his//her speech production (Hulterstam, 2002). The emphasis on the child's meta-linguistic skills was unique when Metaphon was first developed although it is incorporated as an aspect of many current speech interventions. **Delivery** Consists of two phases: the first involves teaching the child to conceptualise opposites that will represent key properties of speech sounds e.g. long vs short, front vs back, noisy vs quiet at the concept level, the sound level then followed by the phoneme level e.g. long (sh) vs short (j), front (t) vs back (k). The clinician then works on the syllable level followed by word level. The second phase transfers these concepts and what has been learnt in Phase 1 to address more 'communicative' situations. No guidance is given regarding the time scale or context for the intervention however Howell & Dean (1998) comment that the average number of	**Target group** ☐ **Speech** ☐ Language ☐ Communication ☐ Complex needs **Age range** ☐ **Preschool** ☐ **Primary** ☐ Secondary **Focus of intervention** ☐ Universal ☐ **Targeted** ☐ Specialist **Delivered by** ☐ **Specialist** ☐ Teacher ☐ Assistant ☐ Other

sessions required for clients in their efficacy study was 22.5 (one session each week).

Level of Evidence

Howell and Dean (1998) report on a quasi-experimental study in which a group of 13 children made progress following Metaphon. Some children made progress only in those phonological processes which were treated while others made general progress in treated and untreated processes. This study was written up in the Howell and Dean book and therefore not subject to peer review and quality appraisal. Hulterstam and Nettelbladt (2002) found that some children struggled with the concepts introduced in Metaphon. This study was a comparative study but did not compare across children or across clinicians so results are difficult to interpret.

http://www.latrobe.edu.au/hcs/projects/preschoolspeechlanguage/articphonol.html - treatopp#treatopp

The metaphon approach has an **indicative** evidence level. Within the evidence are positive outcomes for children with speech difficulties, though some research that some children struggled with concepts associated with the programme. It is therefore a useful approach to consider, especially when services determine where and when it is most effective for the children they work with.

References

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Format

- ☐ Manual
- ☐ **Approach**
- ☐ Technique

Evidence rating

- ☐ Strong
- ☐ Moderate
- ☐ **Indicative**

Title: **29. MILIEU TEACHING/THERAPY**

Description of aims and objectives

Milieu Teaching/Therapy has a long history in the field of psychiatry and psychiatric nursing. It is a planned treatment environment in which everyday events and interactions are designed as part of therapy to enhance social skills and build confidence. The milieu, or "life space," provides a safe environment that is rich with social opportunities and immediate feedback from caring staff.

Milieu therapy/teaching for communication skills was first developed by a number of researchers, such as Hart and Rogers-Warren) in the late 1970s and early 1980s. It is a form of naturalized intervention which developed from applied behavioural analysis. It has been used for many years to promote the communication skills of children with autism spectrum disorders (Mancil, Conroy & Haydon 2009) which has been summarised in a narrative review (Mancil 2009 and http://update-sbs.update.co.uk/CMS2Web/tempPDF/12010003565.pdf) and those with primary language impairment and more general developmental difficulties. The teacher takes advantage of the child's interest in the things around him, (the 'milieu'), in order to provide learning opportunities for the child. When the child demonstrates an interest in an item or activity, the teacher encourages that interest by questioning or prompting the student. For example, the teacher may place something that the student wants just out of reach, so that the student has to communicate with the teacher in order to get it. According to Choi and Kim (2005) (cited in http://www.researchautism.net/autism_treatments_therapies_intervention.ikml?print&ra=91&infolevel=4) milieu teaching has three specific teaching procedures 1) model, 2) mand and 3) time delay which are used to encourage particular aspects of communication such as a "target" word or response you want the child to learn.

Target group

- ☐ Speech
- ☐ **Language**
- ☐ Communication
- ☐ Complex needs

Age range

- ☐ **Preschool**
- ☐ **Primary**
- ☐ Secondary

Focus of intervention

- ☐ Universal
- ☐ **Targeted**
- ☐ Specialist

Delivered by

- ☐ **Specialist**
- ☐ **Teacher**
- ☐ **Assistant**
- ☐ Other

1. 'The model procedure refers to demonstrating the desired language response so that a student can imitate it, for example, to repeat a particular word, phrase, or sentence, in relation to the focus of the child's interest. The model procedure is used primarily to teach verbal or signal imitation skills, and it is used for individuals who need to learn new or difficult target responses.' 2. 'Mand refers to asking questions (e.g. "What do you want?" or providing verbal instructions (e.g., "Tell me what you want"), to a student to elicit a specific response in relation to the focus of his interest (e.g. "Say, tie shoes" when wanting to go outside to play). The mand procedure is used after a student is able to imitate the target language but lacks conversational or verbal skills.' 3. 'Time delay refers to the act of waiting for a short period of time after obtaining joint attention (i.e. you are both focused on the same thing) in order to prompt a response. For example, giving a questioning look for 5 seconds until a child produces the target language in response. The time delay procedure is used to increase the spontaneous use of the target language in situations where the child is likely to need an object or some help.' **Delivery** Although these techniques can readily be adapted for use in the classroom, they have tended to be applied by specialist practitioner speech and language therapists, psychologists etc. **Level of evidence** There have been a number of studies of milieu teaching/therapy. Results suggest consistently positive results for early language learners, a modification called "prelinguistic milieu teaching" (Warren, Fey, Finestack, Brady, Bredin-Oja et al.2008). Comparison with PECS suggests that while Milieu Therapy has many advantages PECS had better outcomes (Yoder et al., 2006). The milieu therapy approach has a **strong** evidence level. Within the evidence are examples of consistently positive outcomes, in particular for early language learners. It is therefore a useful approach to implement	**Format** ☐ Manual ☐ **Approach** ☐ Technique **Evidence rating** ☐ **Strong** ☐ Moderate ☐ Indicative

where appropriate. **References** Choi H., Kim U. (2005). Autism: Using milieu teaching strategies to instruct functional and generalized language. *Journal of Special Education: Theory and Practice, 6*, 357-375. Mancil G.R. (2009) Milieu therapy as a communication intervention: a review of the literature related to children with autism spectrum disorder. *Education and Training in Developmental Disabilities,* 44, 105-117. Mancil, G.R., Conroy M.A. &Haydon T.F. (2009). Research: effects of modified milieu therapy intervention on the social communicative behaviors of young children with autism spectrum disorders *Journal of Autism and Development Disorders, 39*, 149-163. Warren, S. F., Fey, M. E., Finestack, L. H., Brady, N. C., Bredin-Oja, S. L., & Fleming, K. K. (2008). A randomized trial of longitudinal effects of low-intensity responsivity education/prelinguistic milieu teaching. *Journal of Speech, Language, and Hearing Research, 51,* 451–470. Yoder P.J. & Stone W.L. (2006). Randomized comparison of two communication interventions for preschoolers with autism spectrum disorders. *Journal of Consulting and Clinical Psychology. 74(3),* pp. 426-435.	

Title: **30. MORPHO-SYNTACTIC INTERVENTION**

Description of aims and objectives

The morphosyntactic intervention is designed to improve morphosyntactic performance of language (Haskill, Tyler, & Tolbert, 2001) and it has been suggested that it may also have benefits for phonological (speech sound system) skills as well (Tyler et al., 2002) although see Fey et al., (1994 for an alternative view. Morpho- syntactic targets may include adding word endings to a verb to mark past tense, e.g. walk**ed** or to a noun to mark the plural eg bus**es.**

Delivery

The intervention includes three main activities. Each activity is implemented in every group and individual session, and children's progress is monitored in relation to the goals of the intervention each week.

- Auditory awareness activities - are designed to improve children's awareness of the morpho-syntactic targets. These are based in children's books and songs that are read and sung in each session.
- Focused stimulation activities – allow children to hear the target language lots of times in natural conversation. The therapists recast and expand children's utterances, showing children how to say the target words, with the right word endings in sentences. The children are encouraged to use target forms in response to questions or prompts that are part of the conversation or activities.
- Elicited production activities – aim to encourage the children to say the target word through specific activities. The aim is to get the children to say it around 20–30 times for each target morpheme.

In order to implement these activities, the therapists provide the children different levels of support from Cycle 1 to Cycle3.

Target group

- Speech
- **Language**
- Communication
- Complex needs

Age range

- **Preschool**
- **Primary**
- Secondary

Focus of intervention

- Universal
- **Targeted**
- Specialist

Delivered by

- **Specialist**
- Teacher
- Assistant
- Other

- In Cycle 1, the highest level of support is given using forced choice tasks, which mean children have to choose from two options, both of which contain the target language, for example ("The man jump**s** or run**s**?").
- In Cycle 2 a medium level of clinician support is provided using a technique where children are given most part of a sentence and have to finish the sentence with the target language (**cloze tasks)**. The therapist begins saying a sentence and pause just before the target language in order to give the child an opportunity to say it ("What does the man do? He _____").
- And in Cycle 3, the least amount of clinician support is given using "preparatory sets". Preparatory sets involve techniques whereby the therapist indirectly demonstrates for the child how to use target language, within the activity or conversation and then gives the child a turn to form his or her own similar language in a sentence.

Level of Evidence

As an intervention approach, the morpho-syntactic intervention overlaps with many intervention techniques (Camarata, Nelson, & Camarata, 1994; Cleave & Fey, 1997; Fey, Cleave, Long, & Hughes, 1993). A systematic review is required before it would be possible to draw specific conclusions. Current level of evidence is **moderate.**

References

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Format

- Manual
- **Approach**
- Technique

Evidence rating

- Strong
- **Moderate**
- Indicative

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Title: **31. MULTIPLE OPPOSITION THERAPY**	
Description of aims and objectives Multiple opposition therapy (Williams, 2000, 2005) is one of the variants of contrast therapies (with the others being minimal pairs, maximal oppositions and treatment of the empty set). It is aimed at children with moderate to severe speech disorder and specifically those children who have preferences for particular phonemes such that one phoneme is used as a substitute for multiple targets. This is described as a phoneme collapse and the principle goal of this approach is to confront the child with their homonymous forms and induce phoneme splits where collapses have occurred. This approach differs from the other contrastive approaches in that larger treatment sets are used to target the phonemes that the children find difficulty such that several targets are addressed at one time and contrasted with a single phoneme. The supposition is that as multiple oppositions are presented to the child, a greater number and more diverse contrasts are possible that when a single opposition is targeted. This increased variety facilitates greater knowledge of the rule to be learned and this leads on to greater generalization. Targets are selected according to the child's own organisational system such that they reflect the contrasts the child must learn in terms of manner, place and voice. This is in contrast to selecting targets based on developmental sequence or stimulability. **Delivery** The multiple opposition approach consists of four phases: familiarisation and production, contrasts and naturalistic play, contrasts within communicative contexts; and conversational recasts. Sessions are typically twice a week for 30-45 minutes in reported studies. It is delivered by a SLT but with support from	**Target group** ☐ **Speech** ☐ Language ☐ Communication ☐ Complex needs **Age range** ☐ **Preschool** ☐ **Primary** ☐ Secondary **Focus of intervention** ☐ Universal ☐ **Targeted** ☐ **Specialist** **Delivered by** ☐ **Specialist** ☐ Teacher ☐ Assistant ☐ **Other**

parents in play activities and family routines to facilitate practice of the targeted sounds. The number of sessions reported has varied but typically ranged from 21-42 sessions, dependent on severity of the child's impairment. **Level of Evidence** Evidence in support of the multiple oppositions approach is currently limited to quasi-experimental designs and case studies. Williams (2000) used the approach in a case study design with ten children while a later study (Williams, 2005) compared maximal oppositions with minimal pair therapy in a single case experimental design. The multiple oppositions approach has a **moderate** evidence level. Within the evidence are examples of positive outcomes for children with moderate to severe speech difficulties. It is therefore a useful approach to implement where appropriate. **References** Williams, A.L. (2000). Multiple oppositions: Case studies of variables in phonological intervention. *American Journal of Speech-Language Pathology, 2,* 289-299. Williams, A.L. (2005). Assessment, target selection and intervention: dynamic interactions within a systemic perspective. *Topics in Language Disorders, 25,* 231-242.	**Format** ☐ Manual ☐ Approach ☐ Technique **Evidence rating** ☐ Strong ☐ **Moderate** ☐ Indicative

Title: **32. NATURALISTIC SPEECH INTELLIGIBILITY TRAINING**	
Description of aims and objectives Naturalistic intervention can be used to target children's errors in speech and grammatical morphemes. This approach makes a distinction between speech intelligibility (i.e. the degree to which a child is understood) and speech accuracy (i.e. the correct production of individual phonemes). It is intended for use with children who have severe speech sound disorder and low levels of intelligibility and can also be used for children who cannot cope easily with imitation and drill type therapy such as young children and those with cognitive or attention deficits (Camarata, 1993). This approach is based on the principal that intelligibility in conversation is determined as much by syllable structure and grammatical features as speech accuracy. It advocates a naturalistic, responsive intervention including play activities to target intelligibility primarily and speech accuracy as a secondary goal. The technique uses phonological recasts and models during conversation when it is hypothesized that the child is most likely to process the information, resulting in a second production which is a closer approximation to the adult model being produced. The linguistic environment is controlled through careful selection of toys and materials that will elicit production of the words containing the target sounds or grammatical elements. This allows a child-led approach in which the clinician can recast the child's attempts and model correct productions leading to spontaneous imitation by the child in a conversational situation. Moreover, because speech is targeted in the context of communication, the correct pitch, rate, stress and intonation are also modelled in a way which is not possible in single sound or single word therapy. The approach targets speech production and morpho-phonology and can be used to target morpho-syntax, syntax and semantic	Target group ☐ **Speech** ☐ **Language** ☐ Communication ☐ Complex needs Age range ☐ **Preschool** ☐ **Primary** ☐ Secondary Focus of intervention ☐ Universal ☐ Targeted ☐ **Specialist** Delivered by ☐ **Specialist** ☐ Teacher ☐ Assistant ☐ Other

targets as well as social interaction. It doesn't target perception, literacy or cognition. **Delivery:** Intervention can take place in a clinic, home or school or any other setting where spontaneous communication attempts will occur. Parents can be trained to respond appropriately to their child's initiations to promote speech intelligibility but if specific phonemes are being targeted then the intervention is more likely to need specialist input. No specific guidance is provided on dosage though studies reported in the literature typically involve two to three sessions per week lasting between a half and one hour. The approach can be used in combination with a contrast approach to intervention (minimal, maximal, multiple), a process reduction approach and Core Vocabulary intervention. **Level of evidence:** Whilst the need for further randomised clinical trials is recognised, there is a moderate degree of evidence currently available for this approach. Early studies by Camarata (1993) used this approach in two single case studies of children aged 3 and 4, in a multiple baseline design. Quasi-experimental studies show support for this approach in teaching morpho-phonological forms such as past tense and 3rd person singular endings to children with SLI (Camarata et al., 1994; Leonard et al., 2008). The strongest level of evidence is from Yoder et al., (2005) in which 52 pre-schoolers with severe speech sound disorder were randomly assigned to a naturalistic recast group or a control group. Further studies have reported successful use of this approach with children with Down Syndrome (Camarata et al., 2006) and autism (Koegel et al., 1998) The naturalistic speech intelligibility approach has a **moderate** evidence level. Within the evidence are examples of positive outcomes for children with speech difficulties. It is therefore a useful approach to implement where appropriate.	**Format** □ Manual □ **Approach** □ Technique **Evidence rating** □ Strong □ **Moderate** □ Indicative

References: Camarata, S. (1993). The application of naturalistic conversation training to speech production in children with speech disabilities. *Journal of Applied Behavior Analysis, 26,* 173-182. Camarata, S., Nelson, K.E., & Camarata, M. (1994).Comparison of conversational-recasting and imitative procedures for training grammatical structures in children with specific language impairment. *Journal of Speech and Hearing Research, 37,* 1414-1423. Camarata, S., Yoder, P., & Camarata, M. (2006). Simultaneous treatment of grammatical and speech-comprehensibility deficits in children with Down Syndrome. *Down Syndrome Research and Practice, 11,* 9-17. Koegel, R., Camarata, S., Koegel, L., Ban-tal, A., & Smith, A. (1998). Increasing speech intelligibility in children with autism. *Journal of Autism and Developmental Disorders, 28,* 243-251. Leonard, L., Camarata, S., Brown, B. & Camarata, M. (2008).The acquisition of tense and agreement in the speech of children with specific language impairment: Patterns of generalisation through intervention. *Journal of Speech, Language and Hearing Research, 51,* 120-125. Yoder, P., Camarata, S., & Gardner, E. (2005). Treatment effects on speech intelligibility and length of utterance in children with specific language and intelligibility impairments. *Journal of Early Intervention, 28,* 34-49.	

Title: **33. NON-LINEAR PHONOLOGICAL INTERVENTION**	
Description of aims and objectives Non-linear phonology intervention (Bernhardt, 1992; Bernhardt & Stemberger, 1998; Bernhardt & Stoel-Gammon, 1994) is based on theories of phonology which describe the hierarchical representation of the phonological system from the prosodic phrase down to the individual features of a phoneme. The theories provide a framework for analysing phonological systems leading to the identification of targets for intervention. Using a sample of a minimum of 75-80 words and ideally including both single words and connected speech, speech is analysed in terms of the phonological hierarchy – prosodic phrase, word and syllable level, onset, rime and segment. A distinction is made between frequent/less complex (unmarked) elements and infrequent/complex (marked) elements in phonological systems. Often, unmarked elements are considered 'default' in that children are developmentally more likely to spontaneously produce the 'default' unmarked sounds such as /t/ ([-continuant], [-voiced] and [coronal, +anterior]) and need to learn the marked variants such as /k/ (as /t/ except [dorsal] rather than [coronal]). The major focus of intervention is awareness and production of the phonological form. Four basic goals are identified: new prosodic form (e.g. new word lengths, stress patterns or word shapes); new individual features (e.g. [+lateral] or [-voiced]); new locations of established elements (e.g. a new word position for fricatives from coda to onset); and new sequences of feature combinations (e.g. targeting /f/ [+labial] + [+ continuant] when p [+labial] and s [+ continuant] are already established. **Delivery** The dosage is dependent on the needs of the child. The main consideration is the active involvement of	**Target group** □ **Speech** □ Language □ Communication □ Complex needs **Age range** □ **Preschool** □ **Primary** □ Secondary **Focus of intervention** □ Universal □ **Targeted** □ Specialist **Delivered by** □ **Specialist** □ Teacher □ Assistant □ Other

the client, parents, caregivers and teachers/assistants if necessary. This is particularly so in the generalisation phase. The role of the SLT is to analyse the child's speech and use this analysis as a basis for target selection and therapy planning. This approach can be used with other approaches, for example the Cycles approach. **Level of evidence** The evidence reported in peer-reviewed journals has been at the level of quasi-experimental studies using single case study and multiple baseline designs (Bernhardt, 1992; Bernhardt & Major, 2005; Major & Bernhardt, 1998) providing moderate evidence for this approach. The naturalistic speech intelligibility approach has a **moderate** evidence level. Within the evidence are examples of positive outcomes for children with speech difficulties. It is therefore a useful approach to implement where appropriate. **References** Bernhardt, B.M.H. (1992). The application of nonlinear phonological theory to intervention. *Clinical Linguistics and Phonetics*, 6, 283-316. Bernhardt, B.M.H. & Major, E. (2005).Speech, language and literacy skills three years later: Long-term outcomes of nonlinear phonological intervention. *International Journal of Language and Communication Disorders, 40,* 1-27. Bernhardt, B.M.H. & Stemberger, J. P. (1998). *Handbook of phonological development: From a nonlinear constraints-based perspective.* San Diego: Academic Press. Bernhardt, B.M.H. & Stemberger, J. P. (2000). *Workbook in nonlinear phonology for clinical application.* Austin, TX: PRO-ED. Bernhardt, B.M.H. & Stoel-Gammon, C. (1994). Nonlinear phonology: Clinical application. *Journal of Speech and Hearing Research, 37,* 123-143.	**Format** ☐ Manual ☐ **Approach** ☐ Technique **Evidence rating** ☐ Strong ☐ **Moderate** ☐ Indicative

Major, E. & Bernhardt, B.M.H. (1998). Metaphonological skills of children with phonological disorders before and after phonological and metaphonological intervention. *International Journal of Language and Communication Disorders, 33,* 413-444.	

Title: **34. NON-SPEECH ORO-MOTOR EXERCISES**	
Description of aims and objectives The aim of NS-OMEs is to target the sensori-motor functions thought to underlie speech production. NS-OMEs can be used to target strength, motor control, range of movement and sensory function such as touch and proprioception in the musculature relevant to speech sound production (i.e. lips, tongue, jaw and velar muscles plus possibly phonatory and respiratory functions). In addition, some clinicians used OMEs to 'warm-up' the speech musculature or to heighten awareness of oral structures (Lof & Watson, 2008). The underlying assumption in both circumstances is that enhancing the sensory-motor function of the speech musculature during non-speech activities will facilitate sensory-motor control for speech production. Those most likely to benefit are those whose speech difficulties arise from sensory-motor impairment resulting in reduced or impaired strength, range of movement, muscle tone or sensory-motor function. The theoretical basis for NS-OMEs has been questioned by some academics. For a summary of these counter-arguments, see Lof and Watson (2008). **Delivery** NS-OMEs are not intended to be the primary focus of an intervention session but are used as appropriate in sessions where the majority of the time is used to elicit speech behaviours directly. Clinicians may administer OMEs exclusively or direct parents on how to administer them. NS-OMEs are most likely to be beneficial when taught alongside movements for speech. The approach is commonly used with tools such as bite blocks, straws, toy wind instruments and chewable objects.	**Target group** □ **Speech** □ Language □ Communication □ Complex needs **Age range** □ **Preschool** □ **Primary** □ **Secondary** **Focus of intervention** □ Universal □ Targeted □ **Specialist** **Delivered by** □ Specialist □ Teacher □ Assistant □ Other

Level of Evidence A systematic review of NS-OMEs by ASHA (McCauley et al., 2009) reported 17 papers that were eligible for evaluation but none met the criteria required to consider them scientifically sound. Criticism of the review by proponents of NS-OME was directed at the fact that only studies using NS-OME exclusively were included and the benefit of NS-OME as a component of intervention which included speech practice has not been explored. To date, evidence in support of NS-OME is lacking. The non-speech oro-motor approach has an **indicative** evidence level, with limited evidence available to support or refute this approach. **References** Lof, G.L. & Watson, M.M. (2008). A nationwide survey of non-speech oral motor exercise use: Implications for evidence based practice. *Language, Speech and Hearing Services in Schools, 39,* 392-407. McCauley, R.J., Strand, E., Lof, G.L., Schooling, T., & Frymark, T. (2009). Evidence-based systematic review: Effects of non-speech oral motor exercises on speech. *American Journal of Speech-Language Pathology.* 18 343-360.	**Format** ☐ Manual ☐ Approach ☐ Technique **Evidence rating** ☐ Strong ☐ Moderate ☐ **Indicative**

Title: **35. NUFFIELD DYSPRAXIA PROGRAMME**	
Description of aims and objectives The Nuffield Dyspraxia Programme (Williams & Stephens, 2004) is designed to meet the needs of children with severe speech disorders and specifically those with significant difficulty with motor programs/programming and motor planning stages of the speech processing model (referred to as developmental verbal dyspraxia in the UK and childhood apraxia of speech in the US). The programme focuses on building up articulatory skills, in small graded steps, through frequent systematic practice. It uses a motor skills learning approach and sees articulation as a complex hierarchical motor skill. Skills are established by means of frequent repetition elicited by cues and reinforced or modified with the support of specific feedback. The focus is on establishing a full set of motor programs supporting the development of a full range of psycholinguistic processing skills. Phonological contrasts are also taught and work on input (phonological discrimination) is taught as necessary. **Delivery** The programme highlights the importance of frequent repetitive practice at each stage of the child's development. However it does not provide guidance on the frequency or intensity of intervention. Some activities are intended for parents and non-qualified assistants to use with children while others are intended to be delivered exclusively by speech and language therapists. Generally, the programme will be delivered in one-to-one therapy sessions with follow up activities carried out by parents or assistants. **Level of Evidence** Six case studies which demonstrate successful outcomes following the NDP3 programme are written up in the NDP3 manual. Two of these were the subject of unpublished masters theses but these were	**Target group** □ **Speech** □ Language □ Communication □ Complex needs **Age range** □ **Preschool** □ **Primary** □ Secondary **Focus of intervention** □ Universal □ Targeted □ **Specialist** **Delivered by** □ **Specialist** □ Teacher □ Assistant □ Other

referred to in Williams and Stephens (2010). Non-speech oromotor exercises form one part of the Nuffield programme. A systematic review of these types of exercises (though not specifically Nuffield Programme exercises) found that there was insufficient evidence to either support or refute the use of these exercises (McCauley et al., 2009). In a systematic review of interventions for childhood apraxia of speech (Morgan & Vogel, 2008), no studies were of sufficient quality to be included in the review.

The Nuffield dyspraxia intervention has an **indicative** evidence level. Within the evidence are positive outcomes for relatively small numbers of children with speech difficulties, evidenced through case studies. There is limited evidence for the oro-motor aspect of the Nuffield programme

The approach however, is used extensively by practitioners. It is therefore a useful approach to consider, especially when services determine where and when it is most effective for the children they work with.

References

McCauley R.J., Strand E., Lof GL, Schooling T., & Frymark T. (2009). Evidence based systematic review: Effects of non-speech oral motor exercises. *American Journal of Speech Language Pathology, 18,* 343-360.

Morgan, A.T. & Vogel, A. P. (2008). Intervention for Childhood Apraxia of Speech *Cochrane Database of Systematic Reviews (3).*

Williams, P & Stephens, H (2010). Nuffield Centre Dyspraxia Programme. In Williams, L., McLeod, S., and McCauley, R. (Eds) *Interventions for Speech Sound Disorders*. Maryland: Brookes.

Format

- Manual
- Approach
- Technique

Evidence rating

- Strong
- Moderate
- **Indicative**

Title: **36. THE ORAL LANGUAGE PROGRAMME**	
Description of aims and objectives The Oral Language (OL) programme includes direct instruction to develop vocabulary, inferencing, expressive language and listening skills. Activities were adapted from a number of sources, including Rhodes to Language (Rhodes, 2001), Time to Talk (Schroeder, 2001), and materials from Black Sheep Press (e.g., Rippon, 2002). Since listening skills are fundamental to language development, specifically targeted activities required children to listen to and remember what they were told in order to complete a task. Vocabulary to be taught is selected according to two criteria; (i) that it was age-appropriate and instructional, and (ii) that it was related to one of the selected topics. The vocabulary to be taught includes a selection of nouns, verbs, comparatives (words that are used to compare one thing with another, eg bigger) and spatial terms (words that describe position of something, eg under) as well as question words. All words are taught using methods that encouraged children to use them in different contexts (Beck, McKeown, & Kucan, 2002). New vocabulary is introduced every group session, and reinforced in the following group session and in individual sessions. Narrative work is included to encourage expressive language development and good use of grammar. In the group sessions, many activities revolve around creating stories (e.g., 'washing line' activity from Time to Talk; Schroeder, 2001). A specially designed narrative task in which children tell a story from cartoon sequences is used in individual sessions. Teaching Assistants (TA) write down these narratives and used them as a basis for elaborating the story in the next session. Independent speaking is	**Target group** □ Speech □ **Language** □ Communication □ Complex needs **Age range** □ Preschool □ **Primary** □ Secondary **Focus of intervention** □ Universal □ **Targeted** □ Specialist **Delivered by** □ Specialist □ Teacher □ **Assistant** □ Other

encouraged in all sessions through the interactive nature of the programme. Specific activities include 'show and tell' sessions, and 'magic sack' activities (describing an object to the rest of the group). Teaching Assistants (TAs) are taught to monitor the mistakes children made and to say them properly as a "model" for children to hear whenever they make these mistakes. Question words are taught throughout the programme and, as well as answering questions, children are encouraged to seek information by using their own questions. TAs are nominated by their schools to be involved in the intervention; they received 4 days' training before the intervention begins and one day mid-way through. The TAs are then observed once teaching to see whether they were carrying out the programme as it was designed (treatment fidelity). **Delivery** The intervention programme is run over two 10-week periods. Children receive alternating daily one-to-one (20 minute) and group (30 minute) lessons. A manual is written for the programme documenting activities and procedures. Each 10-week period is divided into an initial introduction week followed by three 3-week periods. **Level of evidence** Because this intervention is derived from other interventions there is clearly an evidence base underpinning the intervention at one stage removed for the programme itself. The intervention study specifically testing the this intervention against an alternative intervention namely the Phonology with Reading (P + R) programme (see below) was an randomised controlled study (Bowyer-Crane et al., 2008). The two programmes were compared at the end of the intervention and six months later. The intervention was more effective in terms of the results for specific vocabulary and expressive grammar. Sentence length and narrative skills showed promising results but were not significant. By contrast the children's literacy skills improved more in the Phonology with Reading (P + R) programme. When scores were	**Format** □ **Manual** □ Approach □ Technique **Evidence rating** □ Strong □ **Moderate** □ Indicative

compared with test norms (i.e. there was not a no-treatment control group) two thirds of those in the Oral Language Intervention programme and half of those receiving the Phonology with Reading (P + R) programme continued to have significant difficulties. The oral language intervention has a **moderate** evidence level. Within the evidence are examples of significantly positive outcomes for children with language difficulties, though some children continued to need additional support. It is therefore a useful approach to implement where appropriate. **References** Beck, I.L., & McKeown, M.G. (2007). Increasing young low-income children's oral vocabulary repertoires through rich and focused instruction. *Elementary School Journal,* 107, 251–271. Bowyer-Crane, C., Snowling, M., Duff, F.J., Fieldsend, E., Carroll, J.M., Miles, J., Go¨tz, K. & Hulme, C. (2008). Improving early language and literacy skills: differential effects of an oral language versus a phonology with reading intervention *Journal of Child Psychology and Psychiatry, 49*, 422–432 doi:10.1111/j.1469-7610.2007.01849.x. Rhodes, A. (2001). *Rhodes to language*. Ponteland, UK: Stass Publications. Rippon, H. (2002). *Reception Narrative Pack*. Point Roberts, WA: Black Sheep Press. Schroeder, A. (2001). *Time to talk.* Cambridge UK: LDA.	

Title: **37. PARENTS AND CHILDREN TOGETHER (PACT)**	
Description of aims and objectives PACT is a programme of therapy for young children, aged 3 to 6, with speech sound difficulties. During therapy the speech and language therapist (SLT) involves parents and significant others, possibly including teachers. It is based on theory related to phonological approaches and therapy directly related to the child and their particular speech difficulties, alongside the importance of family involvement to support particular aspects of the approach. Details of the development and theory behind the approach can be found on the website. The therapy includes these five components: (1) family education; (2) metalinguistic tasks;(3) phonetic production procedures;(4) multiple exemplar techniques; and, (5) homework activities, incorporating (1) to (4) above (see below for details) **Delivery** Delivery of the programme is described in detail on Australian speech and language therapist Caroline Bowen's website at: http://speech-language-therapy.com/index.php?option=com_content&view=article&id=51:pact&catid=11:admin&Itemid=121 Materials are available to download for assessment, parent information and direct approaches with the child. Therapy involves two to four ten week blocks of 40-50 minute therapy sessions with an SLT, with gaps between blocks. For about 30 minutes of each session the child works directly with the therapist. The rest of the intervention is delivered in the following way:	**Target group** ☐ **Speech** ☐ Language ☐ Communication ☐ Complex needs **Age range** ☐ **Preschool** ☐ **Primary** ☐ Secondary **Focus of intervention** ☐ Universal ☐ Targeted ☐ **Specialist** **Delivered by** ☐ **Specialist** ☐ Teacher ☐ Assistant ☐ Other

Parent Education (Parents learn, from the clinician, techniques including, modelling and recasting; encouraging their child's self-monitoring and self-correction; specific praise; providing specific listening activities via listening lists, thematic play / auditory input therapy) *Metalinguistic training* (Child, parents and therapist, talk and think about speech, how sounds are produced and combined, and how speech is organised to convey meaning) *Phonetic production training* (learning to produce specific speech sounds) *Multiple exemplar training* (learning to discriminate between and produce different speech sounds within words using a variety of games and activities) *Homework* (based on all of the above) Preschool teachers are frequently willing and able to give invaluable assistance in implementing the therapy, and general support and encouragement for children and parents. **Level of evidence** Some case studies and one efficacy study have been published by PACT's authors. In their 1999 study (see below), Bowen & Cupples found that after intervention assessment, the 14 treated children showed accelerated improvement in their phonological patterns compared with the untreated eight, who did not. The PACT intervention has an **indicative** evidence level. Within the evidence are positive outcomes for children with speech difficulties. It is therefore a useful approach to consider, especially when services determine where and when it is most effective for the children they work with. **References** Bowen, C. & Cupples, L. (1998). A tested phonological therapy in practice. *Child Language Teaching and Therapy, 14,* 29-50. Bowen, C. & Cupples, L. (1999a). Parents and children together (PACT): a collaborative approach to phonological therapy. *International Journal of Language and Communication Disorders. 34,* 35-55.	**Format** □ **Manual** □ Approach □ Technique **Evidence rating** □ Strong □ Moderate □ **Indicative**

Bowen, C. & Cupples, L. (1999b). A phonological therapy in depth: a reply to commentaries. *International Journal of Language and Communication Disorders*, 34, 65-83. Bowen, C., & Cupples, L., (2004) The role of families in optimizing phonological therapy outcomes. *Child Language Teaching and Therapy*, 20, 245-260. Bowen, C., & Cupples, L., (2006) PACT: *Parents and children together in phonological therapy. Advances in Speech Language Pathology*, 8, 282-292.	

Title: **38. PHONEME FACTORY**

Description of aims and objectives

Phoneme Factory is a suite of seven computerised activities including sound symbol matching, rhyming, blending, minimal pair discrimination. They are designed to increase speech input processing skills leading to changes in the child's phonological system. It is possible to customise the games for individual children to reflect their particular sound system, their substitutions and omissions. There are also pre-set activities, that are accessible for parents and teachers, that target the following error patterns: stopping, fronting, final consonant deletion, gliding, context sensitive voicing and de-affrication.

The games are accessible to children to play alone; the computer keeps records of the child's scores on each activity.

The underpinning structure informing the design of the activities is compatible with a number of theoretical models including a psycholinguistic approach such as the Stackhouse & Wells Framework (1977).

The software aims to improve the input processing skills of children with speech sound disorders in order that they can develop age appropriate speech sound patterns.

Delivery

The software can be used by teachers in schools, by parents at home and by speech and language therapists. The pre-set activities are recommended for use by teachers and parents. There is also a companion screening software programme (Phoneme Factory Phonology Screener) which helps teachers and parents to choose appropriate pre-set activities for an individual child. In the trial (Wren & Roulstone, 2008), a therapist delivered therapy using the software once a week, with a learning support assistant following this up in schools twice during the same week for 8 weeks. The software provides an explanatory

Target group

- **Speech**
- Language
- Communication
- Complex needs

Age range

- **Preschool**
- **Primary**
- Secondary

Focus of intervention

- Universal
- **Targeted**
- **Specialist**

Delivered by

- **Specialist**
- **Teacher**
- Assistant
- Other

manual.

Level of Evidence

A small randomised controlled trial (*N* = 33) found no differences between the computer software and table top therapy. However, posthoc analysis of those children who made good progress suggests that the software may be helpful for those children who are stimulable for the sounds not currently in their phonemic repertoire.

The phoneme factory intervention has a moderate evidence level. Within the evidence are examples of positive outcomes for children with speech difficulties, which are comparable to other programmes. It is therefore a useful approach to implement where appropriate.

References

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Wren, Y., Hughes, T., & Roulstone, S. (2006). *Phoneme Factory Phonology Screener*. London: NferNelson Publishing Company Ltd.

Wren, Y. & Roulstone, S. (2006). *Phoneme Factory Sound Sorter*. Manchester: Granada Learning.

Stackhouse, J. & Wells, W. (1977). *Children's speech and literacy difficulties*. *A psycholinguistic framework*. London: Whurr.

Format

- **Manual**
- Approach
- Technique

Evidence rating

- Strong
- **Moderate**
- Indicative

Title: **39. PHONOLOGY WITH READING PROGRAMME (P+R)**	
Description of aims and objectives Phonology with Reading Programme (P+R is an intervention approach which is inspired by research on reading difficulty. The majority of studies have been concerned with single word-level decoding and indicate that intervention combining phonological training with reading is successful in facilitating reading development in poor readers. Hatcher et al., (1994) suggested that letter knowledge, phoneme awareness and reading practice are the most robust predicators of reading development. **Delivery** In the Bowyer-Crane et al. study (2008), P+R is made up of three components which follow the previous study: letter sound knowledge, phonological awareness and reading books at the instructional level. All trainings are delivered by a teaching assistant (TA). In the letter sound knowledge training, children are trained in building up the corresponding links between letters and sounds using the Jolly Phonics programme (Lloyd, 1998). Such practices include reading, writing, and phonological awareness exercises of blending and segmenting. Phonological awareness training is the key component in P+R It is taught for about 5 minutes in each session. It is taught with multi-sensory techniques. The children learn to pronounce these phonological units in a scaffolding approach, which means they need to articulate and produce different levels' phonological units, e.g. phoneme and syllable. In the part of the intervention focussing on reading books, the children listen to storybooks and are encouraged to link their letter-sound knowledge and phonological awareness. In each session, the child read two books to the TA. The TA records the child's book reading level. Then the second book is introduced. The child reads the book alone at first and then reads with the TA at the second time. In the second reading, the child is encouraged to	**Target group** □ Speech □ **Language** □ Communication □ Complex needs **Age range** □ Preschool □ **Primary** □ Secondary **Focus of intervention** □ Universal □ **Targeted** □ Specialist **Delivered by** □ Specialist □ **Teacher** □ **Assistant** □ Other

read fluently.

Level of Evidence

Phonology with Reading Programme has not been well investigated in speech and language therapy. Bowyer-Crane and her colleagues (2008) compared the effectiveness between an oral language intervention and Phonology with Reading intervention. The results showed both programmes were effective in improving the performance on the interventions' targets within the children with poor oral language skills. They also found the children in Phonology with Reading intervention showed an advantage over the oral language intervention group on literacy and phonological measure.

The phonology with reading intervention has a **moderate** evidence level. Within the evidence are examples of significantly positive outcomes for children with language and literacy difficulties. It is therefore a useful approach to implement where appropriate.

References

Bowyer-Crane, C., Snowling, M. J., Duff, F. J., Fieldsend, E., Carroll, J. M., Miles, J., Götz[1], K. & Hulme, C. (2008). Improving early language and literacy skills: Differential effects of an oral language versus a phonology with reading intervention. *Journal of Child Psychology and Psychiatry*, *49*, 422–432.

Hatcher, P., Hulme, C., & Ellis, A.W. (1994). Ameliorating early reading failure by integrating the teaching of reading and phonological skills: The phonological linkage hypothesis. *Child Development*, *65*, 41–57.

Lloyd, S. (1998). *The phonics handbook*: *A handbook for teaching reading, writing and spelling (3rd ed*). Chigwell, UK: Jolly Learning Ltd.

Format

- **Manual**
- Approach
- Technique

Evidence rating

- Strong
- **Moderate**
- Indicative

Title: **40. PICTURE EXCHANGE SYSTEM**	
Description of aims and objectives Picture Exchange Communication System was originally developed for children with autism to improve their communication skills (Bondy and Frost, 1994). Different from many intervention programmes, PECS is specifically designed for the children to communicate with picture cards but with little or no spoken language. There are a range of approaches that use the idea of exchanging pictures to support communication (i.e., exchanging a photograph or line drawing for a corresponding real item). However, PECS is a specific, manualized intervention and therefore does not refer to all exchange-based pictorial communication interventions **Delivery** Bondy and Frost (1994) described "children using PECS are taught to approach and give a picture of a desired item to a communicative partner in exchange for that item. By doing so, the child initiates a communicative act for a given concrete item within a social context." This means children use pictures to start an interaction and to get what they need from others. PECS has been manualised with training and teaching procedures and is delivered by trainers. PECS has six phases and each has its own purpose and different target behaviours. • In Phase 1 of the Physical Exchange, a child learns to exchange a single picture of a preferred item/activity to a communicative partner (another person) in return for the item/activity. • In Phase 2 of the Expanding Spontaneity, the child does the same tasks but the situation is made increasingly more difficult for them (e.g., the distance between the learner and partner is	**Target group** ☐ Speech ☐ Language ☐ Communication ☐ **Complex needs** **Age range** ☐ **Preschool** ☐ **Primary** ☐ **Secondary** **Focus of intervention** ☐ Universal ☐ Targeted ☐ **Specialist** **Delivered by** ☐ **Specialist** ☐ **Teacher** ☐ **Assistant** ☐ **Other**

increased).

- In Phase 3 of the Picture Discrimination, the child needs to work out the pictures of things they want from pictures of things they may not want. By the end of Phase 3, the child is expected to bind containing multiple pictures of preferred items/activities and can independently exchange them with a partner.
- In Phase 4 of the Sentence Structure, the child learns to create a sentence strip comprised of an ‘‘I want’’ card and a picture prior to the exchange.
- In Phase 5 of Responding and Phase 6 of Responsive and Spontaneous commenting, the child needs to answer the questions ‘‘what do you want?’’ and ‘‘What do you see?’’ respectively, using PECS materials.

Level of Evidence

The effectiveness on improving language and communication is limited and controversial, though many studies have reported the PECS can be mastered by the children in a relatively short period of time (Charlop-Christy, Carpenter, Le, LeBlanc, & Kellet, 2002; Ganz & Simpson, 2004).

Preston and Carter (2009) reviewed 27 studies and concluded that very limited data suggested some positive effect on social, communicative and challenging behaviours, while effects on speech development remained unclear. A recent meta-analysis by Flippin, Reszka and Watson (2010) indicated that PECS was generally lacking an evidence base for children with autism ages 1–11 years. They suggested that Phase 4 may be influential characteristic of the program as far as speech outcomes are concerned.

However, a review based on 13 single subject studies (Hart & Banda, 2010) indicated that PECS yielded increases in functional communication in all but 1 participant. According to a review by Sulzer-Azaroff et al., (2009), some results of several of the studies appeared to indicate that intensive PECS training and maintenance across the time and settings for up to 2 years could enable many participants to attain a

Format

- **Manual**
- Approach
- Technique

Evidence rating

- Strong
- **Moderate**
- Indicative

functional communicative repertoire.

The PECS approach has a **moderate** evidence level. Though there are some mixed outcomes, particularly around improvement in language, within the evidence are examples positive outcomes in supporting functional communication in children with complex needs. It is therefore a useful approach to implement where appropriate.

References

Bondy, A., & Frost, L. (1994). The picture exchange communication system. *Focus on Autistic Behavior*, *16*, 123–128.

Charlop-Christy, M. H., Carpenter, M., Le, L., LeBlanc, L. A., & Kellet, K. (2002). Using the picture exchange communication system (PECS) with children with autism: Assessment of PECS acquisition, speech, social-communicative behavior, and problem behavior. *Journal of Applied Behavior Analysis*, *35*, 213–231.

Cummings, A. R., Carr, J.E., & LeBlanc, L.A. (2012). Experimental evaluation of the training structure of the Picture Exchange Communication System (PECS). *Research in Autism Spectrum Disorders*, *6: 1,* 32-45.

Flippin, M., Reszka, S., & Watson, L. R. (2010). Effectiveness of the Picture Exchange Communication System (PECS) on communication and speech for children with autism spectrum disorders: A meta-analysis. *American Journal of Speech-Language Pathology*, *19*, 178–195.

Ganz, J. B., & Simpson, R. L. (2004). Effects on communicative requesting and speech development of the Picture Exchange Communication System in children with characteristics of autism. *Journal of Autism and Developmental Disorders*, *34*, 395–409.

Hart, S. L., & Banda, D. R. (2010). Picture Exchange Communication System with individuals with developmental disabilities: A meta-analysis of single subject studies. *Remedial and Special Education, 31*,

476–488. Preston, D., & Carter, M. (2009). A review of the efficacy of the Picture Exchange Communication System intervention. *Journal of Autism and Developmental Disorders, 39,* 1471–1486. Sulzer-Azaroff, B., Hoffman, A. O., Horton, C. B., Bondy, A., & Frost, L. (2009). The Picture Exchange Communication System (PECS): What do the data say? *Focus on Autism and Other Developmental Disabilities*, *24*, 89–103.	

Title: **41. THE PSYCHOLINGUISTIC FRAMEWORK**

Description of aims and objectives

The Psycholinguistic Framework (Stackhouse & Wells, 1997) is a tool for speech and language therapists who are working with children who have unclear speech. It is a model to help therapists understand how a child is processing speech, which can then be used as a way of analysing how a child is saying particular words and sounds. This can be used as a basis for planning therapy.

The speech processing model consists of three broad components:

- an input channel – what a child can hear and listen to,
- a word store – with information on how words are represented containing the lexical representations and
- an output channel – which is how the child says particular words and sounds.

Each component consists of different levels of processing, each of which can be impaired to a greater or lesser degree in individual children. Therapists can use the psycholinguistic framework to build up a profile of children's speech, which can then be used to design therapy which targets the processing skills which underlie the child's speech difficulties. .

The therapy then focuses on specific underlying difficulties, which ultimately impact more widely on children's speech sound development.

This approach can be used with a number of other intervention approaches for children with speech sound disorders. The contribution of the psycholinguistic framework is in the use of these interventions to target specific underlying difficulties in speech sound processing.

Target group

- **Speech**
- **Language**
- Communication
- Complex needs

Age range

- **Preschool**
- **Primary**
- Secondary

Focus of intervention

- Universal
- **Targeted**
- **Specialist**

Delivered by

- **Specialist**
- Teacher
- Assistant
- Other

Delivery

The psycholinguistic framework can be used flexibly in a range of contexts and adapted to meet the needs of a range of children with speech difficulties. Its main benefit is in helping speech and language therapists understand the specific nature of the child's speech difficulties and what sits underneath what we can hear the child say. It therefore does not define a way of using the framework as this will vary from one individual to another and depend on the range of interventions that are used and the nature of the child's speech difficulties. .

Level of Evidence

Most investigations of the psycholinguistic framework have been at a single case study level (Bryan & Howard, 1992; Pascoe, Stackhouse & Wells, 2005; Waters et al., 1998). In addition, Wren & Roulstone (2008) used the psycholinguistic approach in their RCT involving 33 children and comparing children's progress using a computer based treatment compared with traditional tabletop therapy.

The psycholinguistic approach has a **moderate** evidence level. Within the evidence are examples of positive outcomes for children with speech difficulties and recognition of its use in practice. It is therefore a useful approach to implement where appropriate.

References

Bryan, A. & Howard, D. (1992). Frozen phonology thawed: The analysis and remediation of a developmental disorder of real word phonology. *European Journal of Disorders of Communication, 27,* 343-365.

Pascoe, M., Stackhouse, J. & Well, B. (2005). Phonological therapy within a psycholinguistic framework: Promoting change in a child with persisting speech difficulties. *International Journal of Language and Communication Disorders, 39,* 1-32.

Format

- Manual
- Approach
- Technique

Evidence rating

- Strong
- **Moderate**
- Indicative

Stackhouse, J. & Wells, B. (1997). *Children's speech and literacy difficulties: Book 1. A psycholinguistic perspective.* Chichester: Wiley. Waters, D., Hawkes, C. & Burnett, E. (1998). Targeting speech processing strengths to facilitate pronunciation change. *International Journal of Language and Communication Disorders,* 33 (Suppl.), 469-474. Wren, Y. & Roulstone, S. (2008). A comparison between computer and tabletop delivery of phonology therapy. *International Journal of Speech-Language Pathology,* 10, 346-363.	

Title: **42. SHAPE CODING**	
Description of aims and objectives Based on Lea's 1965/1970 Colour Pattern Scheme and on Colourful Semantics (Bryan, 1997), shape coding has been developed by Ebbels and colleagues, working with children with severe speech and language difficulties, to 'show' the structure of a sentence thus linking the structure of a sentence (syntax) and its meaning (semantics). Shape coding uses a combination of shapes, colours, and arrows to "code" phrases, parts of speech, and words and word endings (morphology), respectively (Ebbels 1997, 2007). Shape coding is a tool to support children's learning (rather than a programme), that can be gradually withdrawn as children are independently able to use or understand the grammatical structures. **Delivery** Originally intended for one to one direct therapy with children in primary and secondary "special" schools for children with severe speech and language difficulties, it is now supported by training (http://www.moorhouseschool.co.uk/shape-coding-course). Timing and duration are not prescribed but in Ebbels et al., 2007 all pupils received nine individual weekly therapy sessions in a quiet room with the first author, which lasted approximately 30 min each (a total of 42hr), in their normal school setting. **Level of Evidence** The majority of studies are descriptive case studies but Ebbels has developed the intervention methodology further using a randomised trial with **blind allocation** (Ebbels. van der Lely and Dockrell (2007). Clearly this approach has good **face validity** and shows promise as a programme. The shape coding approach has a **moderate** evidence level. Within the evidence are examples of	Target group □ Speech □ **Language** □ Communication □ Complex needs Age range □ Preschool □ **Primary** □ Secondary Focus of intervention □ Universal □ **Targeted** □ **Specialist** Delivered by □ **Specialist** □ Teacher □ Assistant □ Other

significantly positive outcomes for children with severe speech and language difficulties. It is therefore a useful approach to implement where appropriate. **References** Bryan, A. (1997) Colourful Semantics: Thematic Role Therapy, in S. Chiat, J. Law & J. Marshall (Eds) Chapter 3.2 *Language disorders in Children and Adults: Psycholinguistic approaches to therapy.* London: Whurr Published Online: 15 APR 2008 DOI: 10.1002/9780470. Ebbels, S. & Van der Lely, H. (1997). Meta-syntactic therapy using visual coding for children with severe persistent SLI. http:www.ucl.ac.uk/DLDCN/Ebbels3.pdf. Ebbels, S. (2007). Teaching grammar to school-aged children with specific language impairment using Shape Coding. *Child Language Teaching and Therapy,* 23, 67–93. Ebbels, S.H., van der Lely, H.K.J. & Dockrell, J.E (2007). Intervention for verb argument structure in children with persistent SLI: A Randomized control trial. *Journal of Speech, Language, and Hearing Research,* 50, 1330 –1349. DOI:1092-4388/07/5005-1330. Lea, J. (1965) A language system for children suffering from receptive aphasia. *Speech Pathology and Therapy,* 8, 58–68. Lea, J. (1970) *The colour pattern scheme: a method of remedial language teaching*. Hurst Green, Surrey, UK: Moor House School.	**Format** ☐ **Manual** ☐ Approach ☐ Technique Evidence rating ☐ Strong ☐ **Moderate** ☐ Indicative

Title: **43. SOCIAL COMMUNICATION INTERVENTION PROGRAMME**	
Description of aims and objectives The Social Communication Intervention Programme (SCIP) aims to support children's language and communication. Specifically, working on word meanings (semantics) and high-level language skills (such as verbal reasoning or inference). It supports pragmatic (language use) difficulties through social interaction and social cue interpretation (supporting children to understand subtle social interaction) (Adams & Gaile in press). A detailed and precise account of the experimental SCIP intervention is provided in Adams et al., (accepted for publication). This includes • the reasons behind the intervention, • how it was developed into a manual of approaches, • how to implement the approaches , • the component parts of the intervention, • procedures to ensure it meets the needs of individual children , required level of practitioner expertise and how to ensure the intervention is delivered properly **Delivery** The research intervention manual provides procedures for working out appropriate goals for children, planning intervention and includes all intervention activities. For each child, between 16 and 20 individual face-to-face one hour sessions of intervention (up to three sessions per week) is delivered in school over the course of one school term. Parent/teacher input is encouraged throughout the setting of goals and intervention period. Each child therefore receives an individualised intervention worked out from the manual, but within a specified framework, as outlined above, to make sure that the right	Target group □ Speech □ **Language** □ **Communication** □ Complex needs Age range □ Preschool □ **Primary** □ Secondary Focus of intervention □ Universal □ **Targeted** □ **Specialist** Delivered by □ **Specialist** □ Teacher □ **Assistant** □ Other Format □ **Manual**

intervention choices are made for each individual child. **Level of evidence** The intervention was originally evaluated in a number of single subjects but has more recently been evaluated in a randomised trial. The evaluation was carried out in a randomised control trial of 88 children between 5;11 and 10;8 years attending mainstream primary schools in the UK, two thirds of whom received the intervention and a third of whom received "treatment as usual". Assessments were carried out immediately before the intervention, immediately afterwards and six months after completion of the intervention**.** The children receiving the intervention made significant progress in the following • "conversational competence" i.e. how good they are at having conversations (measured via Targeted Observation of Pragmatics in Children's Conversation – TOPICC), for • How children use their language and socialise as reported by parents (measured via CCC-PRAGMATICS derived, from the CCC-2), and • for teacher reported ratings of classroom learning skills. However, they did not make significant progress in expressive language or narrative ability (as measured by the Clinical Evaluation of language Fundamentals and The ERNNI respectively). The authors conclude that it is likely that the intervention provided in SCIP is effective at improving overall conversational quality (but not structural language skills) in 6-11 year-olds who have significant pragmatic and social communication needs. SCIP is perceived by parents and teachers as effective at improving some functional pragmatic and social communication skills at home, and classroom learning skills, for these children. The materials are accessible, flexible and easy to use. SCIP represents a relatively intensive targeted intervention for a group of children with complex communication needs which has shown to be effective in supporting their social communication needs.	□ Approach □ Technique Evidence rating □ Strong □ **Moderate** □ Indicative

The social communication intervention has a **moderate** evidence level. Within the evidence are examples of positive outcomes for children with pragmatic language impairment, particularly in areas of overall conversational skills, though less on structural language. It is therefore a useful approach to implement where appropriate. **References** Adams, C., & Gaile, J., (in press). *Managing children's pragmatic and social communication needs in the early school years.* (Manchester: Roundway Centre Publication).Adams, C., Lockton, E., Gaile, J., Earl, G. & Freed, J. (2012). Implementation of a manualised communication intervention for school-aged children with pragmatic and social communication needs in a randomised controlled trial: The Social Communication Intervention Project. *International Journal of Language and Communication Disorders*, *47*, 245–256. DOI: 10.1111/j.1460-6984.2012.00147.x. Adams, C., Lloyd, J., Aldred, C. & Baxendale, J., (2006), Exploring the effects of communication intervention for developmental pragmatic language impairments: a signal-generation study. *International Journal of Language and Communication Disorders*, *41*, 41-66. Adams, C., Lockton, E., Gaile, J. & Freed, J., (2011). TOPICCAL applications: Assessment of children's conversation skills. *Speech and Language Therapy in Practice*, Spring, p 7-9.Adams, C., Lockton, E., Freed, J., Gaile, J. Earl, G, McBean, K., Nash, M., Green, J., Vail, A. & Law, J. (2012s) The Social Communication Intervention Project: a randomised controlled trial of the effectiveness of speech and language therapy for school-age children who have pragmatic and social communication problems with or without autism spectrum disorder *International Journal of Language and Communication Disorders.* 47, 233–244, DOI: 10.1111/j.1460-6984.2011.00146.x	

Title: **44. SOCIAL STORIES**

Description of aims and objectives

Social Stories is an intervention programme, which originally comes from intervention with children with autism spectrum disorders (ASD), but has started to be used more widely to improve pragmatic language skills (use of language) in speech and language therapy. Social Stories were originally developed by Carol Gray in the early 1990s. Attwood (2000) described a social story as being "written to provide information on what people in a given situation are doing, thinking or feeling, the sequence of events, the identification of significant social cues and their meaning, and the script of what to do or say; in other words, the what, when ,who and why aspects of social situations."

A Social Story is individualised to a child's specific social or communication behaviour. In a typical Social Stories intervention scenario, a child will be told a story initially. As many social details are provided showing appropriate social behaviour within the story. Afterwards the child will answer some questions and be expected behave appropriately according to his/her understanding.

The principal aims of Social Stories are

- to improve children's understanding of events;
- to help them understand different perspectives; and
- to respond appropriately when communicating.

Social Stories are presented mainly through written text, though other ways of using social stories have been introduced for younger children and children with learning difficulties. These include singing (Brownell, 2002), apron story-telling (Haggerty, Black & Smith, 2005.) and computer-based approaches (Hagiwara & Myles, 1999).

Target group

- Speech
- Language
- **Communication**
- Complex needs

Age range

- **Preschool**
- **Primary**
- **Secondary**

Focus of intervention

- Universal
- **Targeted**
- **Specialist**

Delivered by

- **Specialist**
- **Teacher**
- **Assistant**
- Other

Delivery

The story is relatively short, straightforward description of social situations and context. To write a Social Story, Sansosti, Powell-Smith and Kincaid (2004) summarised four steps:

1) target a specific problematic social situation;

2) identify the key features of the context or setting;

3) share the features with the child and teacher/therapist;

4) use these features to generate a Social Story.

Gray (1995, 2000) summarised six sentence types used in a Social story. There are four basic sentences:

- descriptive,
- perspective,
- directive and
- affirmative sentences.

Two further sentence types, control and cooperative sentences, were introduced later.

Furthermore, in order to write a balanced Social Story, Gray recommended two ratios to make up the story: basic and complete Social Story ratios. The basic Social Story ratio is made up of 2–5 descriptive, perspective, and/or affirmative sentences for each directive sentence (Gray, 1995; Kuoch & Mirenda, 2003). The complete Social Story ratio follows the same principle but adds control and cooperative sentences, including two to five cooperative, descriptive, perspectives, and/or affirmative sentences for every directive or control sentence (Gray, 2000; Kuoch & Mirenda, 2003).

Social stories can be delivered by a wide range of practitioners following training. For more information see http://www.thegraycenter.org/social-stories

Level of evidence

Format

- Manual
- **Approach**
- Technique

Evidence rating

- Strong
- **Moderate**
- Indicative

Though Social Stories has been incorporated into mainstream practice since 1990s (Gray & Garand, 1993), some studies and reviews show the efficacy is controversial (Ali & Frederickson, 2006, Reynhout 2006; but Sansosti, Powell-Smith & Kincaid, 2004) in ASD field. Although social stories has a **moderate** evidence level, the impact on children remains unclear. **References.** Ali, S., & Frederickson. N., (2006). Investigating the evidence base of Social Stories". *Educational Psychology in Practice,* 22*,* 355–77. Attwood, T. (2000). Strategies for improving the social integration of children with Asperger syndrome. *Autism*, 4, 86-100. Brownell, M. (2002). Musically adapted Social Stories to modify behaviors in students with autism: four case studies. *Journal of Music Therapy*, *39,* 117–144 Gray, C. A. (1995). Teaching children with autism to read social situation. In K. A. Quill (Ed.), *Teaching children with autism* (219-241). New York, Delmar. Gray, C. A. (1998). Social stories and comic strip conversations with students with Asperger syndrome and high-functioning autism. In E. Schopler, G. B. Mesibov, & L. J. Kunce (Eds.), *Asperger syndrome or high-functioning autism?* (pp. 167–198). New York: Plenum. Gray, C. A. (2000). *The new social story book*. Arlington, TX: Future Horizons. Gray, C. A., & Garand, J. D. (1993). Social stories: Improving responses of students with autism with accurate social information. *Focus on Autistic Behavior*, 8, 1–10. Haggerty, N., Black, R. & Smith, G. (2005). Increasing self-managed coping skills through Social Stories and apron storytelling. *Teaching Exceptional Children* 37, 40–47. Hagiwara, T. & Myles, B. (1999). A multimedia Social Story intervention: teaching skills to children with autism. *Focus on Autism and other Developmental Disabilities*, *14 (1)*, 82–95.	

Kuoch, H., & Mirenda, P. (2003). Social Story_ interventions for young children with autism spectrum disorders. *Focus on Autism and Other Developmental Disabilities*, *18,* 219–227. Reynhout, G. & Carter, M. (2006). Social Stories for children with disabilities. *Journal of Autism and Developmental Disorders, 36 (4):* 445–69. Sansosti, .F.J., Powell-Smith, K. A. & Kincaid, D. (2004). A Research Synthesis of Social Story Interventions for Children with Autism Spectrum Disorders. *Focus on Autism and Other Developmental Disabilities, 19* ,pp. 194–204. http://www.thegraycenter.org/home.	

Title: **45. SOCIAL THINKING**	
Description of aims and objectives Social Thinking www.socialthinking.com is a treatment developed by Michelle Garcia Winner that is popular in US and increasingly so in the UK. It is aimed at children and young people with high functional autism and Asperger's syndrome. It is based on the ILAUGH Model of Social Thinking as described by Winner (2000), which is an integrated summary of the evidence based research. It is designed to: 1) help speech and language therapists, educators and parents systematically organize and "make sense" of the challenges faced by children who struggle to interact socially 2) provide a direction for therapists to build on the student's strengths and areas of need in order to tailor intervention . The ILAUGH Model stands for: I = Initiation of Language (Krantz & McClannahan, 1993; MacDonald et al., 2006). Initiation of communication and language means people can use language and communication skills to get help or information. Many individuals who struggle to interact socially have the ability to talk a lot. Yet while these students talk a lot about their own knowledge and ideas, they may struggle to communicate when they are unsure of what to do next or how to ask for help when they don't understand a person or situation. L= Listening with Eyes and Brain (Baron-Cohen, 1995; Jones & Carr, 2004; Whalen, Schreibman & Ingersoll, 2006). Many individuals on the autism spectrum, and others who struggle to interact socially, are good at processing information that they see. However, they may struggle to understand information they have to listen to, especially when they have to do it at the same time as understanding social visual information (e.g. reading nonverbal cues). In order to understand social situations, students need to integrate what they see and what they hear. They need to be able to make an educated guess about	**Target group** ☐ Speech ☐ Language ☐ **Communication** ☐ Complex needs **Age range** ☐ **Preschool** ☐ **Primary** ☐ Secondary **Focus of intervention** ☐ Universal ☐ **Targeted** ☐ **Specialist** **Delivered by** ☐ **Specialist** ☐ **Teacher** ☐ **Assistant** ☐ Other

what is being said when the message cannot be interpreted literally. This is also referred to as “active listening” or “whole body listening.” A = Abstract and Inferential Language/Communication (Minshew, Goldstein, Muenz, & Payton, 1992; Norbury & Bishop, 2002). Understanding depends on the ability to recognize that most language or communication is not intended for literal interpretation. Abstract and inferential meaning occurs subtly through verbal and nonverbal communication and working out what the language means in particular situations. We all need to be flexible when we are working out what people mean to say by taking account of what we know about people in different situations (Simmons-Mackie & Damico, 2003). U = Understanding Perspective (Baron-Cohen, 2000; Baron-Cohen, Jolliffe, Mortimore, & Robertson 1997; Flavell, 2004). The ability to work out where other people are coming from, understand their beliefs, thoughts and feelings and to do this across different social situations is really important for social interaction. Individuals who struggle with social interaction skills are often highly aware of their own point of view, but may struggle to see another’s point of view. G=Gestalt Processing/Getting the Big Picture (Fullerton, Stratton, Coyne & Gray, 1996; McEvoy et al., 1993; Norbury & Bishop, 2002; Shah & Frith, 1993). Many students with social learning issues are highly skilled at obtaining and retaining factual information related to their particular area of interest. However, both written and conversational language is conveyed through ideas, not just facts. For example, when having a conversation, we understand the ideas being discussed without having to explicitly say. When reading a book, the reader must follow the overall meaning (gestalt) of the book rather than just collecting the details of the story. Organizational skills are in a similar category that need us to “see the big picture” and assess what needs to be done systematically before focusing on details of a task. H= Humour and Human Relatedness (Greenspan, 1990; Prizant, Wetherby, Rubin & Laurent, 2003; Wolfberg, 2003). Many individuals with social interaction challenges often have an excellent sense of	**Format** ☐ G163 ☐ Manual ☐ **Approach** ☐ Technique **Evidence rating** ☐ Strong ☐ Moderate ☐ **Indicative**

humour, but feel anxious as they miss many of the subtle cues that would help them understand ways to participate more successfully with others in a social context. Emotional processing is also at the heart of human relatedness. **Delivery** The Social Thinking programme is delivered by specialist trainers to teachers and others closely involved with the target children. An extensive range of programme materials are available many on the programme website. The training to individuals is also provided in Social Thinking Clinics where therapy groups are observed by professionals. No specific details regarding delivery (dosage, intensity etc.) are provided. **Level of Evidence** In terms of evidence it clearly has good theoretical and face validity but has only been formally evaluated in studies with relatively weak experimental designs. The social thinking approach has an **indicative** evidence level, with limited evidence available. It is therefore a useful approach to consider, especially when services determine where and when it is most effective for the children they work with. **References** Adams, A. (2008). Mentoring “Social Thinking” ” Groups in Middle & Secondary Schools. Talk presented at NASP, New Orleans. American Speech-Language-Hearing Association (2005). Evidence based practice in communication disorders (position paper). Available at: http://www.asha.org/members/deskreferjournals/deskref/default. (pp1) Bellini, S. & Hopf, A. (2007). The development of the autism social skills profile: A preliminary analysis of psychometrics. *Focus on Autism and Other Developmental Disabilities. 22*, 80-87.	

Crooke, P., Hendrix, R., & Rachman, J. (2008). Measuring the effectiveness of teaching social thinking to children with Autism spectrum disorder. *Journal of Autism & Developmental Disorders*. *38*,581-91. Winner M.G. Crooke, P.J. (2009). Social Thinking®: A developmental treatment approach for students with social learning/social pragmatic challenges *Perspectives on Language Learning and Education Perspectives on Language Learning and Education*, *16*, 62-69.	

Title: **46. SOCIAL USE OF LANGUAGE PROGRAMME**

Description of aims and objectives

Developed by Wendy Rinaldi and currently available from GL publications (1995) the Social Use of Language Programme focuses on Social Communication Skills and Self/Other Awareness. It uses a multi-sensory, metacognitive (building children's awareness of their own knowledge) approach that enables children and adolescents to understand fully the skills being learned, before practising and using them in real-life situations.

It is divided into three parts

- Part 1 teaches basic communication skills and develops self/other awareness.
- Part 2 enables students to apply non-verbal and verbal communication skills to potentially difficult situations.
- Part 3 focuses on supporting students in real life situations.

It was initially developed for use with teenagers with moderate learning difficulties but later proved useful with other groups such as younger children and children on the autistic spectrum.

Delivery

For use by speech and language therapists, SENCOs and educational psychologists. No specific details regarding delivery (dosage, intensity etc.) are provided.

Level of Evidence

Although the programme has been running for a long time and is widely available and referred to on the internet there is little available published evidence of its effectiveness. One study compared Lego therapy with SULP and no intervention with autism children in primary school. Lego therapy proved to be more useful than SULP for reducing autistic symptomatology. Both interventions were better than no intervention at improving

Target group

- Speech
- Language
- **Communication**
- Complex needs

Age range

- Preschool
- **Primary**
- **Secondary**

Focus of intervention

- Universal
- **Targeted**
- **Specialist**

Delivered by

- **Specialist**
- Teacher
- Assistant
- Other

poor behaviour and the SULP intervention was more effective at improving communication (Owens, Granader, Humphrey, Baron-Cohen 2008). The Social Use of Language Programme has an **indicative** evidence level, with limited evidence available. It is included here because of the strength of its face validity and significant use in practice. It is therefore seen a useful approach to consider, especially when services determine where and when it is most effective for the children they work with. **References** Rinaldi W. (1995). *The social use of language programme (primary and pre-school teaching pack).* Windsor: NFER Rinaldi, W. (2001), *Social use of language programme (SULP)* — Revised. Windsor: NFER-Nelson. Owens, G. Granader, Y., Humphrey, A. & Baron-Cohen, S. (2008). LEGO therapy and the social use of language programme: An evaluation of two social skills interventions for children with high functioning Autism and Asperger Syndrome *Journal of Autism and Developmental Disorders, 38*:1944–1957 DOI 10.1007/s10803-008-0590-6.	**Format** □ **Manual** □ Approach □ Technique **Evidence rating** □ Strong □ Moderate □ **Indicative**

Title: **47. STIMULABILITY TREATMENT**

Description of aims and objectives

The aim of this approach is to increase stimulability of non-stimulable sounds (Miccio & Elbert, 1996). The focus on stimulability is based on the intervention research literature which suggests that stimulability for erred phonemes is a prognostic indicator of treatment outcomes. In other words, if a child is stimulable for a target sound, they are more likely to have a positive outcome from intervention. The approach encompasses seven important components: direct targeting of non-stimulable sounds, making targets the joint focus of attention, associating speech sounds with hand and body movements, associating speech sounds with alliterative characters, encouraging vocal practice, ensuring early success through inclusion of stimulable sounds, and ensuring successful communicative attempts.

The stimulability approach was designed for use with very young children aged between 2 and 4 years who have very small phonetic inventories and are not stimulable for production of many or all of the absent sounds. The focus is on improved production but there is some evidence that perceptual skills may also improve as a result of production training (Wolfe et al., 2003). In common with complexity theory, proponents of the stimulability approach argue that acquisition of non-stimulable sounds results in greater system wide change in which improvement is seen in both treated and non-treated sounds.

Delivery

Intervention is typically short with studies reporting approximately 12 sessions, twice a week for 45-50 minutes.

Level of Evidence

While a number of studies have included stimulability training as part of the intervention, relatively few

Target group

- **Speech**
- Language
- Communication
- Complex needs

Age range

- **Preschool**
- **Primary**
- Secondary

Focus of intervention

- Universal
- **Targeted**
- Specialist

Delivered by

- **Specialist**
- Teacher
- Assistant
- Other

have looked exclusively at stimulability therapy. To date, these have used case study designs and have not yet been tested at a group level (Miccio & Elbert, 1996; Miccio, 2009; Powell, 1996).

The stimulability treatment approach has an **indicative** evidence level, with limited evidence available for this approach used exclusively. Current evidence suggests as part of other approaches, it is a useful approach to consider, especially when services determine where and when it is most effective for the children they work with.

References

Miccio, A. W. (2009). First things first: Stimulability therapy for children with small phonetic repertoires. In C. Bowen (Ed.), *Children's speech sound disorders* (pp. 96-101). Oxford: Wiley-Blackwell.

Miccio, A.W. & Elbert, M. (1996). Enhancing stimulability: a treatment program. *Journal of Communication Disorders, 29,* 335-351.

Powell, T. W. (1996). Stimulability considerations in the phonological treatment of a child with a persistent disorder of speech-sound production. *Journal of Communication Disorders, 29,* 315-333.

Wolfe, V., Presley, C. & Mesaris, J. (2003). The importance of sound identification training in phonological intervention. *American Journal of Speech-Language Pathology, 12,* 282-288.

Format

- Manual
- **Approach**
- Technique

Evidence rating

- Strong
- Moderate
- **Indicative**

Title: **48. STRATHCLYDE LANGUAGE INTERVENTION PROGRAMME**	
Description of aims and objectives The Strathclyde Language Intervention Programme was devised by McCartney and colleagues to promote the language development of children with specific language impairments, both understanding and expression of language in primary school and is delivered by teaching or speech and language therapy assistants under the guidance of a speech and language therapist. It includes • *Comprehension monitoring*: designed to help children to work out what is needed to help them understand and to know how to seek help and clarification when they did not understand. • *Vocabulary development*: understanding, learning and using words relating to ideas relevant in schools, and teaching children strategies to help them to remember new words they have learned. The approach includes encouraging the child to think about how the word sounds and what the word means and encourages them to use specific memory and rehearsal techniques. Vocabulary from the maths and literacy curriculum, school topic vocabulary and words relating to concepts, questions and directions were used to focus word learning, but the emphasis was on children reflecting on how they learn and remember words and developing independent strategies for learning words. • *Grammar*: teaching age-appropriate understanding and use of grammar. A list of grammar markers was collated, to be taught in key contexts following the work of Fey and Proctor–Williams. Bryan's work on 'colourful semantics' was adapted to provide activities highlighting the relationships that underlie particular sentence structures. • *Narrative therapy*: This involves teaching understanding and use of narrative, based on the work of Shanks and Rippon using materials from their activities pack.	**Target group** □ Speech □ **Language** □ Communication □ Complex needs **Age range** □ Preschool □ **Primary** □ Secondary **Focus of intervention** □ Universal □ **Targeted** □ Specialist **Delivered by** □ **Specialist** □ Teacher □ **Assistant** □ Other

A straightforward and easy to follow therapy manual explaining and interpreting these areas was written for the research SLT assistants, cross referred to sources of information, with a list of suitable published materials and activities included for each language area. **Delivery** The intervention is presented in a manual and specifically designed for use by therapy/teaching assistants under guidance from a speech and language therapist. **Level of Evidence** The intervention has been developed over a number of years by experienced practitioners and evaluated with primary school aged children in a full scale randomised controlled trial funded by the health technology programme of the National Institute of Health Research in the UK. The results suggest that children made progress as a result of the intervention. A comparison was also made between the intervention being delivered by speech and Language therapists and appropriately trained teaching assistants, which found no real difference between the two. An economic evaluation was a part of this evaluation process. The model in the intervention has been further developed for use with primary school teachers. The Strathclyde language intervention has a **moderate** evidence level. Within the evidence are examples of significantly positive outcomes for children with speech and language difficulties. It is therefore a useful approach to implement where appropriate. **References** McCartney, E., Boyle, J., Bannatyne, S., Jessiman, E., Campbell, C., Kelsey, C., Smith, J. & O'Hare, A. (2004). Becoming a manual occupation? The construction of a therapy manual for use with language impaired children in mainstream primary schools. *International Journal of Language and Communication Disorders*, *39*, 135-148.	**Format** □ **Manual** □ Approach □ Technique **Evidence rating** □ Strong □ **Moderate** □ Indicative

Boyle, J., J., McCartney, E., Forbes, J. & O'Hare, A. (2007). A randomised controlled trial and economic evaluation of direct versus indirect and individual versus group modes of speech and language therapy for children with primary language impairment. *Health Technology Assessment, 11 (25)*, 1-158. Dickson, K., Marshall, M., Boyle, J., McCartney, E., O'Hare, A. & Forbes, J. (2009). Cost analysis of direct versus indirect and individual versus group modes of manual based speech and language therapy for primary school-age children with primary language impairment. *International Journal of Language and Communication Disorders*, *44*, *3*, 369-381. McCartney, E., Ellis, S. & Boyle, J. (2009). The mainstream primary school as a language-learning environment for children with language impairment – implications of recent research. Themed invitation issue: 'Social and Environmental Influences on Childhood Speech, Language and Communication Difficulties.' *Journal of Research in Special Education 9*, *(2)*, 80-90. Boyle, J., McCartney, E., O'Hare, A.., & Forbes, J. (2009). Direct versus indirect and individual versus group modes of language therapy for children with primary language impairment: principal outcomes from a randomised controlled trial and economic evaluation. *International Journal of Language and Communication Disorders*, *44*, *(6)*, 826-846. McCartney, E., Boyle, J., Ellis, S., Turnbull, M. & Kerr, J. (2010). Developing a language support model for mainstream primary school teachers. *Child Language, Teaching and Therapy, 26*, (3), 359-374. McCartney, E., Boyle, J., Ellis, S., Bannantyne, S. & Turnbull, M. (2011). Indirect language therapy for children with persistent language impairment in mainstream primary schools: outcomes from a cohort intervention. *International Journal of Language and Communication Disorders, 46,* 74-82. .	

Title: **49. TALK BOOST**	
Description of aims and objectives Talk Boost is the targeted intervention that is part of a three wave approach under the "A Chance to Talk " initiative funded by ICAN, Every Child a Chance Trust and The Communication Trust. It is aimed at children with delayed language development between 4 and 7 years. The programme, devised from speech and language therapy practice, runs for 10 weeks with 30 sessions of activities. A training package was developed for teaching and support staff to: • *Consider the importance of speech, language and communication* (What is meant by speech, language and communication, What happens when these skills break down, The impact of speech, language and communication needs) and • *Understand principles and processes for the Talk Boost programme* **(**Who, what, when, where, how and why, Principles for teaching language and communication, Importance of programme structure and themes , Linking the targeted intervention to whole class approaches for language teaching • Modelling and practice of activities and session plans The aims of the programme are to : • To close the language gap between language delayed children and their peers • Provide a programme simple to understand and use which can be delivered by trained volunteers and school support staff • Support teachers to identify children with language delays • Support teachers to embed speaking and listening into whole class activities • Secure understanding of the importance of early intervention in language development to prevent	**Target group** ☐ Speech ☐ **Language** ☐ Communication ☐ Complex needs **Age range** ☐ **Preschool** ☐ **Primary** ☐ Secondary **Focus of intervention** ☐ Universal ☐ **Targeted** ☐ Specialist **Delivered by** ☐ Specialist ☐ **Teacher** ☐ **Assistant** ☐ Other

the long term impact of such delays This targeted intervention aims to support children who have language delay to close the gap/catch up with their peers. The programme focuses on the following aspects of language: Listening, Vocabulary, Sentence building, Storytelling, Conversations **Delivery** Teaching assistants (TAs) / teachers received ½ day or 1 day training (flexible, dependent on prior knowledge) provided by a specialist (SLT or specialist teacher) Staff are supported to identify appropriate children for the intervention TAs run sessions with children; Targeted at reception, year 1 and year 2 children Groups of 4 children receive 3x weekly sessions of 30-40 minutes for 10 weeks **Level of evidence** In a single evaluation of the programme 160 children were randomly allocated to an intervention and a control group. 50 teachers and support staff were involved in the intervention across 12 schools. Children were assessed blind before and after the intervention. The results showed statistically significant differences between the intervention and control children with separate analyses for children with English as an additional language. The results were supported by teacher's comments about the effects of the programme. The talk boost intervention has a **moderate** evidence level. Within the evidence are examples of significantly positive outcomes for children with delayed language. It is therefore a useful approach to implement where appropriate. **References** Follow the link below to read the full report	**Format** □ **Manual** □ Approach □ Technique **Evidence rating** □ Strong □ **Moderate** □ Indicative

http://www.thecommunicationtrust.org.uk/sitecore/content/Communication%20Trust/Programme/~/media/Communication%20Trust/Documents/ACTT%20Final%20Wave%202%20Report%20-%20November%2010.ashx	

Title: **50. TALKING MATS**	
Description of aims and objectives Talking Mats is a low tech communication framework involving sets of symbols. It was originally developed by The AAC (Alternative and Augmentative Communication) Research Unit to support people with communication impairment. Since its original conception, additional research has taken place and now it is an established communication tool, which uses a mat with picture symbols attached as the basis for communication. It is designed to help people with communication difficulties to think about issues discussed with them, and provide them with a way to effectively express their opinions. Talking Mats has been used with a wide range of different client groups with communication support needs. It has recently been developed for children and young people with communication difficulties in social care and education settings, to help them feed their back views on the services they receive and to reflect on their own needs and progress. **Delivery** Talking Mats can be used by a wide range of educational and health practitioners following training. It is widely used in the UK and Europe. No specific details regarding delivery (dosage, intensity etc.) are provided. **Level of evidence** Although the approach has good face validity and has been more formally evaluated with other groups it has not been formally trialled and the level of evidence is therefore indicative. The Talking Mats approach has an **indicative** evidence level, with limited evidence available. It is included here because of the strength of its face validity and significant use in practice. It is therefore seen a useful approach to	**Target group** □ Speech □ Language □ **Communication** □ **Complex needs** **Age range** □ Preschool □ **Primary** □ **Secondary** **Focus of intervention** □ Universal □ Targeted □ **Specialist** **Delivered by** □ **Specialist** □ **Teacher** □ **Assistant** □ Other

consider, especially when services determine where and when it is most effective for the children they work with. **References** Dinwoody, D. & Macer, J. (2010). Talking Mats for literacy target setting. *Literacy Today,* 15-16. Macer, J. & Murphy, J. (2010). Talking Mats and Young People: A resource to support consultation with young people using care services. University of Stirling, Scotland: Talking Mats Research & Development Centre. Murphy, J, Gray, C. M. & Cox, S. (2007). The use of Talking Mats as a communication resource to improve communication and quality care for people with dementia. *Journal of Housing, Care and Support, 10(3),* 21-27.	**Format** ☐ Manual ☐ **Approach** ☐ Technique **Evidence rating** ☐ Strong ☐ Moderate ☐ **Indicative**

Title: **51. TALKING TIME**

Description of aims and objectives

Developed by Julie Dockrell and Morag Stuart at the Institute of Education in London, Talking Time is an interactive oral language intervention package designed to support language and to foster communication with and between preschool children. The programme aims to develop children's language before they reach primary school so that they are at a level where they can make the best use of language for learning and socialising when they start school. Talking Time supports the goals of the English foundation stage level curriculum by providing opportunities for children to communicate their thoughts, ideas and feelings and by giving children opportunities to share stories and experiences. It is characterised by targeting three key language skills namely:

• vocabulary development,

• the ability to make inferences, and

• the ability to recount a narrative.(e.g. describe a recent event or retell a simple story)

One of the key features of the programme is the Hexagon Activity. The Hexagon Activity is designed to support the development of narrative language. The first aim of the activity is to provide opportunities for conversation, to allow the children to think and talk about events, which are shown through a sequence of pictures and relate these to their own experiences and feelings. It is also provides good opportunities for staff to model language to the children. By providing (cumulative) summaries of the events the children have discussed (see detailed instructions below), adults are modelling 'story structure' for the children.

Target group

- Speech
- **Language**
- Communication
- Complex needs

Age range

- **Preschool**
- Primary
- Secondary

Focus of intervention

- **Universal**
- Targeted
- Specialist

Delivered by

- Specialist
- **Teacher**
- Assistant
- Other

It is recommended that, particularly with children whose oral language may be delayed, the 'acting out', 'teddy says' and 'story-talk' activities are used with the children for the first ten weeks or so of the programme. When the children are confident in understanding and using vocabulary, one of the tasks can then be replaced by the narrative 'hexagon' task. More able or older children may be ready to start immediately on this task. An evaluation of the programme in nursery schools in Tower Hamlets has shown that it is effective in improving oral language skills when children exposed to Talking Time were compared to those exposed to an alternative intervention (Dockrell, Stuart & King, 2006, 2010). Children in the Talking Time intervention made significantly more progress than children in the alternative intervention in terms of both their understanding and use of vocabulary: they understood and produced more words than the comparison children. Talking Time also improved on children's development of expressive language, with significantly more progress in the Talking Time children's ability to repeat increasingly complex sentences, and to say longer sentences when they were talking. Thus, there was evidence that the building blocks of narrative skill were beginning to be put in place. However, despite this pleasing acceleration of progress, the overall language skills of the children were still a cause for concern. On a standardised test of expressive vocabulary, the overall mean score for the 'Talking Time' children put them at the 15th percentile of the population (i.e. 85 per cent of children of their age would perform better than this). Their mean score on a standardised test of verbal comprehension put them at the 10th percentile (i.e. 90 per cent of children of this age would perform better than this). In contrast, on a standardised measure of non-verbal cognitive ability, their mean score put them at the 45th percentile, i.e. well within the normal range. **Delivery** All of the activities are designed to be used with small groups of children, ideally of no more than 5	**Format** □ **Manual** □ Approach □ Technique **Evidence rating** □ Strong □ **Moderate** □ Indicative

children and, in order to promote conversation, should be representative of different language levels within the setting. To benefit from the language programme, each child needs to take part in two of the language activities each week for about ten or fifteen minutes. The Teachers Handbook and DVD resource for Talking Time is available from:-

http://www.ioe.ac.uk/about/documents/About_Staff/PHD_JD_Publications_TALKING_TIME_Handbook.pdf

Level of evidence

In terms of its evidence base it is clear that Talking Time is well supported in theoretical terms and has been evaluated relative to another intervention.

The Talking Time intervention has a **moderate** evidence level. Within the evidence are examples of significantly positive outcomes for children in the early years with language difficulties. It is therefore a useful approach to implement where appropriate.

References

Dockrell, J., Stuart, M. & King, D. (2006). Implementing effective oral language interventions in pre-school settings. In Clegg, J. and Ginsborg, J. (Eds*) Language and Social Disadvantage: theory into practice*. West Sussex: John Wiley and Sons.

Dockrell, J.E., Stuart, M. & King, D. (2010). Supporting Early Oral Language Skills for English Language Learners in Inner city Preschool provision British Journal of Educational Psychology, 80, 497-516

Title: **52. TEACCH**

Description of aims and objectives

The full name of TEACHH is Treatment and Education of Autistic and related Communication Handicapped Children (TEACCH). This treatment was originally designed by the researchers in The University of North Carolina in 1966 by Eric Schopler (Schopler & Reichler, 1971) and aims to develop Autistic children's communication skills alongside cognition, perception, imitation and motor skills (Eikeseth, 2009), though speech and language problems are not an intervention priority for TEACCH.

Delivery

A TEACHH programme is mainly delivered by the staff or teachers who have been specifically trained. The parents are also encouraged to get involved in the intervention (Schopler & Reichler, 1971). TEACHH sets specific requirements in order to achieve its aims:

- physical organisation – this refers to the principle of place-activity correspondence, i.e. all activities are preferably carried out in a "clear" and "predicable" separated space.
- communication system - The communication between the therapist and child is adapted to the child's developmental level. It uses different methods of communication, e.g. objects, pictures, written words, and talk.
- task organisation, Each activity is presented through specially designed teaching materials. These are very clear and ensure the child can complete the task independently
- intervention, TEACHH has precise routines the therapists need to follow. For example, rewards are given to a child when the work is completed. These routines aim to increase a child's independence as well as reduce the need for help. Activities are all scheduled and presented with visual aid.

Target group

- Speech
- Language
- Communication
- **Complex needs**

Age range

- **Preschool**
- **Primary**
- **Secondary**

Focus of intervention

- Universal
- Targeted
- **Specialist**

Delivered by

- **Specialist**
- **Teacher**
- **Assistant**
- Other

- time visualisation – This aims to reduce children's anxiety and make them know what is going to happen later. But the therapists can control the timing and the duration of an activity according to an individual child.

TEACCH has been used worldwide and is regarded as the most influential special education program for children with autism (Schopler, 2000). It has been applied in different languages, e.g. Chinese (Tsang et al. 2007)

Level of Evidence

Although TEACCH is internationally used, the efficacy studies on TEACCH have not been systematically reviewed. Tsang and her colleague (2007) pointed out that studies on TEACCH had one research problem, which was that they rarely used control groups. A recent review (Eikeseth, 2009) included 3 studies on how well TEACCH worked. Two studies (Mukaddes, Kaynak, Kinali, Besikci, & Issever, 2004; Ozonoff & Cathcart, 1998) were considered to have a low treatment effect. The other study (Lord & Schopler, 1989) was considered to have insufficient scientific value. The TEACCH approach has an **indicative** evidence level, with limited evidence available. It is included here because of the strength of its face validity and significant use in practice. It is therefore seen a useful approach to consider, especially when services determine where and when it is most effective for the children they work with.

References

Eikeseth, S. (2009). Outcome of comprehensive psycho-educational interventions for young children with autism. *Research in Developmental Disabilities, 30*, 158–178.

Mukaddes, N. M., Kaynak, F. N., Kinali, G., Besikci, H., & Issever, H. (2004). Psychoeducational treatment of children with autism and reactive attachment disorder. *Autism*, *8*, 101–109.

Ozonoff, S. & Cathcart, K. (1998). Effectiveness of a home program intervention for young children with

Format

- Manual
- **Approach**
- Technique

Evidence rating

- Strong
- Moderate
- **Indicative**

autism. *Journal of Autism and Developmental Disorders*, *28*, 25–32.
Schopler, E. & Reichler, R. J. (1971). Parents as co-therapists in the treatment of psychotic children. *Journal of Autism and Childhood Schizophrenia*, *1*, 87–102.
Schopler E., Reichler R. J., Bashford A., Lansing M. D. & Marcus L. M. (1990). *Individualized Assessment and Treatment for Autistic and Developmentally Disabled Children, Vol. 1: Psychoeducational Profile Revised* (PEP/R). Pro-Ed, Austin, TX.
Schopler, E. (2000). International Priorities for Developing Autism Services via the TEACCH Model-1. *International Journal of Mental Health*, *29*, 3–97.
Tsang, S. K., Shek, D. T., Lam, L. L., Tang, F. L., & Cheung, P. M. (2007). Brief report: Application of the TEACCH program on Chinese pre-school children with autism. Does culture make a difference? Journal of Autism and Developmental Disorders. 37(2):390-6.

Title: **53. TEACHING CHILDREN TO LISTEN**

Description of aims and objectives

The package is a whole school listening approach to help school staff to develop good listening skills in all the children they work with. This has been provided to 34 primary schools in North Worcestershire. The aims are to teach children the four rules of listening (looking at the person who is talking, listening to all of the words, sitting still and staying quiet) and to empower staff to work with children who have particular difficulties with listening. Teachers are provided with a listening scale based on the four rules with which to rate children's listening skills.

Delivery

Trainers provide a half day training session for staff in each school, followed by six weekly sessions with whole class groups. These sessions consist of whole class listening activities.

Level of evidence.

The final report of the evaluation project details the outcomes for over 2000 children in 34 schools. Immediately post-intervention, the number of children with adequate listening skills had improved from 41% to 66%. After a further term (without further input from the training team), this had increased to 74%. The average improvement in listening scores was 20% for all children and 59% for children whose listening was rated as 'severe'. Since the evaluation method is a pre and post-baseline assessment with no controls or blinding, this can be regarded as **indicative** evidence only. Within the evidence are positive outcomes improving children's listening. It is therefore a useful approach to consider, especially when services determine where and when it is most effective for the children they work with.

Target group

- Speech
- Language
- Communication
- Complex needs

Age range

- Preschool
- **Primary**
- Secondary

Focus of intervention

- **Universal**
- Targeted
- Specialist

Delivered by

- **Specialist**
- Teacher
- Assistant
- Other

References	Format
Spooner, L. & Woodcock, J. (2010). Teaching children to listen: a practical approach to developing children's listening skills. London: Continuum Publishing. Spooner, L. & Woodcock, J. (2011). Teaching Children to Listen. Presentation at the NAPLIC conference, 2011. (*www.naplic.org.uk/files/conferences/2011/PPTS/2011_spooner.ppt)*. Spooner, L. & Woodcock, J. (2001). *The listening project (final report).* Worcester Health and Care Trust.	□ **Manual** □ Approach □ Technique **Evidence rating** □ Strong □ Moderate □ I**ndicative**

Title: **54. THINKING TOGETHER**

Description of aims and objectives

Thinking together is based on over a decade of classroom based research into the relationship between talking and thinking. It is a dialogue-based approach to the development of children's thinking and learning using of talk as a tool for thinking. It connects the development of children's 'thinking skills' to the development of their communication skills and curriculum learning. It emphasises the importance of both teacher–pupil and pupil–pupil talk.

Delivery

Children are explicitly taught about Exploratory Talk – a way of interacting which emphasises reasoning, the sharing of relevant knowledge and a commitment to collaboration

Each teacher and class agree on a set of *ground rules* for talking together

Children work in groups of three, using Exploratory Talk as they work on curriculum-based activities

The teacher acts as model and guide for the use of Exploratory Talk, which is key to success

Activities for implementing this approach are available from the following sources; the books *Talk Box* (ages 6-8), *Thinking Together* (ages 8-11) and *Thinking Together in Geography* (ages 12-14). There are free resources for teachers and further information on the thinking together website http://thinkingtogether.educ.cam.ac.uk/

Level of evidence

In several projects, involving hundreds of children, a programme of Thinking Together lessons has been implemented in a set of 'target' schools

In each project, matched 'control' schools are selected to enable comparisons to be made of the quality of

Target group

- ☐ Speech
- ☐ **Language**
- ☐ **Communication**
- ☐ Complex needs

Age range

- ☐ Preschool
- ☐ **Primary**
- ☐ **Secondary**

Focus of intervention

- ☐ **Universal**
- ☐ Targeted
- ☐ Specialist

Delivered by

- ☐ Specialist
- ☐ **Teacher**
- ☐ Assistant
- ☐ Other

children's talk in groups, the development of their reasoning skills and their curriculum attainment, before and after the implementation (which is normally a period of at least six months) In one typical study, seven 'target' classes of children aged 9-10 in primary schools were taught maths and science for eight months, using an approach which emphasised classroom discussion, group work and the development of children's awareness of talking for learning. 109 children completed the programme. A further 121 children in "control" classes completed the same maths curriculum without any change in teaching style. Both groups were given tests before and after, based on the SAT tests for Key Stage 2. The mean maths SAT score for the target classes before the experiment was 2.43, while for the control classes it was 2.39. After the experiment, the mean score was 5.53 for the target classes but only 4.2 for the control group. The mean science SAT score for the target classes before the experiment was 3.97, while for the control classes it was 4.22. After the experiment, the mean score was 5.70 for the target classes but only 5.04 for the control group. This indicates that the children who had been taught using a dialogue-based approach made better, more rapid progress in both maths and science. One of the 'Thinking Together' studies in the UK assessed the impact of an intervention in primary schools on the development of children's reasoning skills (Mercer & Littleton, 2007). Over 12 lessons, children aged 8-11 were taught by their teachers how to talk and work effectively together, and to apply their developing skills to curriculum learning. In 'control' schools the same subject matter was taught without any intervention. Both the target and control classes completed the same exercises from *Raven's Progressive Matrices* [a standardised test of reasoning] before and after the series of lessons. The results show that being taught how to reason *together* and then practising joint reasoning, enabled children to become better at reasoning *alone*. The research team reported that: "Target class children…became significantly better at doing the Raven's items individually, compared with the control children who had not In summary:	**Format** □ **Manual** □ Approach □ Technique **Evidence rating** □ Strong □ **Moderate** □ Indicative

Quality of group work: students engage more effectively with tasks for longer periods of time, with all participants being included more in discussions *Quality of talk*: the quality of students' talk changes significantly. More features of Exploratory Talk appear in their dialogues, showing more reasoning occurring when they solve problems. *Individual attainment*. Individuals show improvement in educational attainment (as measured by tests of attainment in science and maths) and in non-verbal-reasoning (as assessed by the Raven's Progressive Matrices test) The Thinking Together approach has a **moderate** evidence level. Within the evidence are examples of significantly positive outcomes for supporting children's talk for thinking and evidence of impact on attainment. Adaptations may need to be considered for children with SLCN. It is therefore a useful approach to implement where appropriate. **References** Mercer, N. Hennessy, S. & Warwick, P. (2010). Using interactive whiteboards to orchestrate classroom dialogue. *Technology, Pedagogy and Education*, *19,* 195-209. Mercer, N., Dawes, L. & Staarman, J.K. (2009). Dialogic teaching in the primary science classroom, *Language and Education*, *23,* 353-369. Mercer, N., Warwick, P., Kershner, R. & Kleine Staarman, J. (2010). Can the interactive whiteboard provide 'dialogic space' for children's collaborative activity? *Language and Education*, *24, (*1-18. Soong, B., Mercer, N. & Siew, S.E. (2010). Revision by means of computer-mediated peer discussions. *Physics Education*, *45, (3),* 264-269. Dawes, L. Dore, B., Loxley, P., & Nicholls, L. (2010). A talk focus for promoting enjoyment and developing understanding in science. *English Teaching: Practice and Critique* September, *9,* 99-110.	

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Mercer, N. (2008). The Seeds of Time: why classroom dialogue needs a temporal analysis. *Journal of the Learning Sciences*, *17,* 33-59.
Mercer, N. and Sams, C. (2006). Teaching children how to use language to solve maths problems, *Language and Education*, *20,* 507-528.

Title: **55. VISUAL APPROACHES TO SUPPORT SPEECH AND LANGUAGE**

Description of aims and objectives

The underpinning reasoning for this approach is that children who have language learning difficulties often show strengths in their visual skills (Archibold & Gathercole, 2006). The approach covers a wide range of ways of supporting children's language learning through the use of additional visual clues. A number of programmes are based on this idea, for example, cued articulation, visual phonics. In these cases, hand positions or signs are used to show, give additional visual cues or to visually symbolise different speech sounds, in terms of where or how it is made.

Visual support for language can support different aspects of language such as grammar or word order. These might include colour and shape coding of the grammatical components of sentences (see Colourful Semantics (#3) and Shape Coding (#42). Use of signing or objects of reference are often described as visual strategies (cf, Lal & Bali, 2007)

Delivery

When practitioners refer to visual approaches to supporting language, they are often referring to visual supports offered to help a child's understanding both of specific language (such as vocabulary, aspects of grammar as indicated above) and also to visual means of helping the child understand the general context and environment, such as the use of visual timetables for helping a child deal with the organisational structure and transitions in their day.

Level of Evidence

There are few studies which evaluate the use of visual strategies as a single technique although there are studies with children with autism spectrum disorder which report the positive benefits of a range of visual

Target group

- **Speech**
- **Language**
- Communication
- Complex needs

Age range

- **Preschool**
- **Primary**
- Secondary

Focus of intervention

- **Universal**
- **Targeted**
- **Specialist**

Delivered by

- **Specialist**
- **Teacher**
- **Assistant**
- **Other**

strategies; these are case series with multiple baselines. The reports on the use of visual support techniques are frequently in the context of a named programme such as TEACCH or Colourful semantics. Despite the lack of solid evidence, many practitioners use visual strategies to support different aspects of language development or to create a communication supportive environment for children with SLCN, which is why this approach has been included

The Visual approaches to supporting language has an **indicative** evidence level, with limited evidence available. It is included here because of the strength of its face validity and significant use in practice. It is therefore seen a useful approach to consider, especially when services determine where and when it is most effective for the children they work with

References

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Ganz, J.B., Bourgeois, B.C., Flores, M.M. & Campos, B.A. (2008). Implementing visually cued imitation training with children with autism spectrum disorders and developmental delays. *Journal of Positive Behavior Interventions. 10(1),* 56-66.

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Gajria, M, Jitendra, A.K, Sood, S. & Sacks, G. (2007). Improving comprehension of expository text in students with LD: A research synthesis. *Journal of Learning Disabilities*, *40,*210-225.

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Format

- ☐ Manual
- ☐ **Approach**
- ☐ Technique

Evidence rating

- ☐ Strong
- ☐ Moderate
- ☐ **Indicative**

Title: **56. VISUALISING AND VERBALISING**

Description of aims and objectives

Visualising and Verbalising (Bell, 1987) is a technique used to help understanding of language in a language-impaired students. Bell (1991) argued that children with a “language comprehension disorder” were unable to understand overall meaning because of what he termed “weak imagery”. Visualising and Verbalising aims to improve mental imagery skills, which then help listening and reading comprehension.

Delivery

Visualising and Verbalising has four stages.

1. At the first stage, the student learns to describe pictures with 12 structure words. These words include dimensions of shape, size and perspective (e.g. bird’s eye view, from the side). The objects in the pictures contain familiar objects of known nouns (e.g. tree) and fantasy imaging (e.g. castle).
2. At the second stage, the student learns to visualise a single sentence that is read by the therapist. In this stage, the student visualises the previously imaged noun into a new situation. The stage is optional and provides more practice for the next stage.
3. At the third stage, the student needs to visualise a paragraph sentence by sentence. When the student hears a sentence read by the therapist, he will choose a right image as well as answer a choice question (e.g. “Is the boat a big boat or a little boat? ”). After the student answers the question, he puts down a coloured square as a visual cue for the image visualised. At the end of this stage, the student gives a ‘picture summary’, which verbally describes the images for each square. After that the student verbally repeats the paragraph.

Target group

- ☐ Speech
- ☐ **Language**
- ☐ Communication
- ☐ Complex needs

Age range

- ☐ **Preschool**
- ☐ **Primary**
- ☐ Secondary

Focus of intervention

- ☐ Universal
- ☐ **Targeted**
- ☐ **Specialist**

Delivered by

- ☐ **Specialist**
- ☐ **Teacher**
- ☐ **Assistant**
- ☐ Other

4. The final stage is similar to the third, but the therapist asks more difficult questions, e.g. main idea questions and inferential questions (e.g. why did they...). So the student needs to draw conclusions and evaluate the content.

Level of Evidence

There are few efficacy studies on the Visualising and Verbalising programme. Dixon, Joffe and Bench (2001) compared this programme with a traditional programme. They found both of programmes could improve children's understanding, but Visualising and Verbalising was not more effective than the traditional therapy. The Visualising and Verbalising programme has a **moderate** evidence level. Within the evidence are examples of significantly positive outcomes for children with receptive language difficulties, though no more effective than traditional approaches. It is may therefore a useful approach to implement where appropriate.

References

Bell, N. (1987). *Visualising and Verbalising for language comprehension and thinking*. Paso Robles: Academy of Reading Publications.

Bell, N. (1991). Gestalt imagery: a critical factor in language comprehension. *Annals of Dyslexia*, *41*, 246–60.

Dixon, G., Joffe, B., & Bench, R.J. (2001). The efficacy of visualising and verbalising: are we asking too much? *Child Language Teaching and Therapy*, *17*,127–141.

Format

- ☐ Manual
- ☐ **Approach**
- ☐ Technique

Evidence rating

- ☐ Strong
- ☐ **Moderate**
- ☐ Indicative

Title: **57. WHOLE LANGUAGE**

Description of aims and objectives

Whole language intervention (Norris & Hoffman, 1993) is intended for use with children who have both phonological impairment (speech difficulties) and expressive language impairment. Intervention is structured around interactive story book reading. The following aspects of the child's speech and language are worked on at the same time

- Development of the speech sound system (Phonological development)
- Structuring conversations (discourse structure)
- Word meanings (semantic),
- Different aspects of grammar (syntactic, morphological)
- letter-sound knowledge.

Conventional strategies are used including modelling, expanding and extending children's language and using visual support to encourage understanding of how letters and sounds are linked.

Treatment goals will typically be a combination of targets across a range of areas of need. For example, targets for one child could be

- question forms, such as why....
- use of personal pronouns, such as he, her and his
- and use of the sound /h/ at the beginning of words

Using a specifically selected story book which provides models for the question forms and the pronouns, production of /h/ could be targeted through the words 'he', 'his', 'her' etc. The clinician would first read the

Target group

- **Speech**
- **Language**
- Communication
- Complex needs

Age range

- **Preschool**
- **Primary**
- Secondary

Focus of intervention

- Universal
- **Targeted**
- **Specialist**

Delivered by

- **Specialist**
- Teacher
- Assistant
- Other

story, then retell the story starting with short utterances and gradually building up their length. As the story is retold, the child repeats each brief sentence then, if able, retells the story themselves, possibly to a puppet or toy. The adult uses a range of strategies such as, cloze sentences (He felt very .....), rebus stories (stories that use pictures or symbols dotted through the text), story reading or telling with no picture or object naming. The theory behind the whole language approach is that speech sound development interacts with the development of conversation, sentences, words and grammar. The intervention uses talk and visual tools which represent letter-sound relationships and word meaning relationships to develop speech within storybook reading. **Delivery** Intervention centres around a narrative topic which could include play, snack, art or book reading. The level of play could range from simple actions to highly symbolic narrative play and will depend on the child's general level of development. The interaction between the adult and child appears to be based on topic development but the adult adapts their language on each conversational turn based on what the child has just said. The intention is for the adult to support the child to use speech and or aspects of language that is more complex and better organised. There is no information on how much or how often the approach should be used, so assumed it is dependent on the needs of the child. The approach can be used by SLTs, teachers and parents in a variety of settings as it is using naturally occurring parent-child interactions, though in a structured way. **Level of Evidence** Published peer reviewed accounts of this approach are limited but Hoffman, Norris and Monjure (1990) reported case studies of two children who received whole language intervention compared with minimal	**Format** □ Manual □ **Approach** □ Technique **Evidence rating** □ Strong □ Moderate □ **Indicative**

pairs. In addition, this approach was used in a RCT comparing phonological treatment with whole language (Pamplona et al. 2004) though the whole language approach did not result in a reduced treatment time compared to the phonological approach. The current evidence for this approach therefore is at an indicative level. The whole language approach has an **indicative** evidence level, with limited evidence available. It may be an approach to consider, especially when services determine where and when it is most effective for the children they work with. **References** Hoffman, P.R., Norris, J.A. & Monjure, J. (1990). Comparison of process targeting and whole language treatments for phonologically delayed pre-school children. *Language, Speech and Hearing Services in Schools, 3,* 102-109. Norris, J.A. & Hoffman, P.R. (1993). *Whole language intervention for school-age children.* San Diego: Singular Publishing. Pamplona, M.C., Ysunza, A. & Ramirez, P. (2004). Naturalistic intervention in cleft palate children. *Journal of Otorhinolaryngology, 68,* 75-81.	

Title: **58. WORD WIZARD**

Description of aims and objectives

The intention of this intervention is to teach targeted vocabulary, from the National Curriculum, to children with specific language impairment who are being taught within mainstream schools. The intervention uses word meanings (semantics) speech sounds (phonology) and repetition to help children learn new vocabulary.

Delivery

The delivery procedure below is as outlined by Parsons et al., (2005) (see references, below):

Ten steps to becoming a word wizard

1) Today's new word is ...The written word was read to the child.

2) Have you heard ..... before? The child was asked, 'Have you heard (target word) before?'

3) What do you know about .....If yes to question 2, the child was asked 'What do you know about (target word)?'

4) How do we learn new words? If no to question 2, or after discussion of the child's prior word knowledge the child was asked, 'How do we learn new words?' and were given support using a worksheet

5) Sounds in the word - The child was encouraged to complete the phonological information on the 'How do we learn new words?' worksheet. Help was provided for literacy difficulties.

6) Meaning - If they had existing knowledge the child was encouraged to complete information about the meaning of the word on the 'How do we learn new words?' worksheet.

7) Learn some more! - To expand the child's word knowledge a range of practical activities were conducted. They involved exploring the environment looking for a particular feature (e.g., looking for 'corners'), lying on the floor (for 'horizontal'), making shapes (e.g., 'cubes'), playing shops (for most of the money vocabulary) or

Target group

- Speech
- **Language**
- Communication
- Complex needs

Age range

- Preschool
- **Primary**
- Secondary

Focus of intervention

- Universal
- Targeted
- **Specialist**

Delivered by

- **Specialist**
- Teacher
- Assistant
- Other

sorting (e.g. mathematical 'signs' from non-signs). During all these activities the target words were said by the therapist many times, and linked to particular key vocabulary. The worksheet was then reviewed and extra meaning knowledge added that the child had learnt. 8) Put it all together - At the end of the practical activity the child was encouraged to 'Put it all together.' This was a brief activity where the child and therapist took two turns each to define the target word saying one phonological and one semantic feature for each turn. 9) Choose a game - One of three simple board games was then played. These games varied each day, but the aim was that for each turn the child and therapist would provide sound and meaning features of the target word. For the first part of the game the child could use the written worksheet as a prompt, but after the midpoint the worksheet was removed from view. 10) Write it for the word bank - The word was then written in the 'Word Bank Book,' along with two meaning and one sound feature. This was a record of the child's learning, and a practice at defining the target word. The written word was then taken to class and added to the class 'Word Bank.' The Word Bank was an activity in which the whole of the class was involved. When the children encountered words that they did not know they could write it on a piece of paper, find out its meaning, define it in front of the class and stick it on the chart. **Level of evidence** In this study the intervention was delivered outside the classroom, by a speech and language therapist. Two Year 4 children received 18 sessions in total and learned one new word per session. They had three sessions per week of approximately 30 minutes each. Words were taken from the numeracy strand of the National Curriculum: addition and subtraction, money, shape, and space. At the end of the trial both boys showed significantly higher understanding of the targeted words than of non-targeted vocabulary that had been introduced during that period in normal National Curriculum-based numeracy lessons.	**Format** □ Manual □ Approach □ **Technique** **Evidence rating** □ Strong □ Moderate □ **Indicative**

The word wizard intervention has an **indicative** evidence level. Within the evidence are positive outcomes for relatively small numbers of children with specific language impairment, though it is well regarded and well used by practitioners. It is therefore a useful approach to consider, especially when services determine where and when it is most effective for the children they work with. **References** Parsons, S., Law, J., & Gascoigne, M. (2004). Teaching receptive vocabulary to children with specific language impairment: a curriculum based approach. *Child Language Teaching and Therapy.* 21, 39-59. Steele, S. C., and Mills M T (2011). Vocabulary intervention for school-age children with language impairment: A review of evidence and good practice. *Child Teaching Language and Therapy,* 27, 354-370**.**	

UP AND COMING INTERVENTIONS

Here we include some interventions, identified during the course of our search for evidence based interventions. In all cases they have face validity, where evaluation work is underway and have the potential to be recommended once evaluated but we were not able to identify data evaluating their effectiveness or they were the subject of on-going studies which have yet to report. We anticipate that as the evidence base in the field develops and these interventions are subjected to evaluation they will move into the list above.

Title: **59 . ELCISS – ENHANCING LANGUAGE AND COMMUNICATION IN SECONDARY SCHOOLS**	
Description of aims and objectives □ ELCISS aims to enhance language and communication in secondary school children with primary language and communication impairment through two intervention programmes: narrative/storytelling and vocabulary enrichment. □ The project explores the prevalence and nature of language impairment in secondary school children in two outer London boroughs: Redbridge and Barking and Dagenham. □ It investigates the effectiveness of two speech and language therapy interventions (narrative/storytelling and vocabulary enrichment) in improving language and communication in secondary school-aged children with significant language and communication impairments. □ The study investigates the effectiveness of each therapy and their combination and examines which specific aspects of language are improved. It employs outcome measures from the child, school, parent and staff perspective. The interventions are pedagogically sound in targeting key skills of the National Curriculum: storytelling and vocabulary. **Delivery** □ The therapy is delivered by teaching assistants under the supervision of speech and language therapists thereby using a collaboration of school staff and therapists. There were four treatment groups each receiving eighteen hours of therapy: a narrative group, a vocabulary group, a group getting both treatments and a delayed treatment group which act as a control group. □ The specialist support programmes took place in small groups in the school environment. The project also incorporates a range of different levels of training of school staff in enhancing language and communication in language-impaired students. The training includes strategies in differentiating the National Curriculum to meet the needs of students with language difficulties. **Level of evidence** □ The intervention has been manualised and has been tested in a project led by Dr Victoria Joffe, Senior Lecturer in developmental speech and language impairments from the Department of Language and	**Target Group** □ Speech □ **Language** □ Communication □ Complex needs **Age range** □ Preschool □ Primary □ **Secondary** **Focus of intervention** □ Universal □ **Targeted** □ Specialist **Delivered by** □ **Specialist** □ Teacher □ **Assistant** □ Other

Communication Science at City University □ **References** □ For more information see the project website http://www.elciss.com/index.php	**Format** □ **Manual** □ Approach □ Technique **Evidence rating** □ Strong □ Moderate □ Indicative

Title: **60. LANGUAGE 4 LEARNING**	
Description of aims and objectives Language 4 Learning is an intervention developed for use with preschool children with delayed language development in Melbourne Australia to promote pre-literacy and oral language skills. Carried out by speech and language therapy assistants under the direction of experienced speech and language therapist the children are seen at home with the parent. The manualised programme is colour coded in four sections • Alphabet Action; • Phonological Awareness; • Semantics; • Morpho-Syntax; • Shared book reading. The intervention lasts for a total of 30 weeks. It consists of 3 blocks of intervention that are separated by 2 breaks where no intervention will take place. Each intervention block consists of 6 consecutive weeks with one therapy session per week. Following the completion of each intervention block, there is a 6 week break before the next intervention block will commence. All sessions are individual sessions and consist of 60 minutes. Each session consists of fixed and variable parts that will be individually adapted to each child's needs. Each intervention session consists of 5 different tasks. Four of these tasks are 'fixed' in the sense that they are the same for all children.	**Target group** ☐ Speech ☐ **Language** ☐ Communication ☐ Complex needs **Age range** ☐ **Preschool** ☐ **Primary** ☐ Secondary **Focus of intervention** ☐ Universal ☐ **Targeted** ☐ Specialist **Delivered by** ☐ **Specialist** ☐ Teacher ☐ **Assistant** ☐ Other

The fifth targets a specific language area that will be individually determined for each child. These individual language specific targets will be determined after the first session of each block, where additional testing and screening will be carried out. Areas of language development that need most support will be targeted first. The 'fixed' parts of this intervention programme aim to facilitate children's emerging Literacy skills like Narratives, Print referencing, Phonological awareness and Letter knowledge skills. The language specific targets will specifically address receptive and/or expressive oral language skills like Morpho-syntax and Semantics. Each area follows an explicit sequence that need to be followed according to the manual Care has to be taken not to confuse this with a programme with a comparable name "Language for Learning" developed for use in the UK by **'Worcestershire Health and Care NHS Trust'** for which training materials are available but for which no evaluation has been published http://www.languageforlearning.co.uk/ . **Delivery** The intervention is delivered by assists under the direction of speech and language therapists. **Level of evidence** The intervention has been manualised and is currently being tested in a randomised trial in Victoria, Australia. **References** Wake, M., Levickis, P., Tobin, S., Zens, N., Law, J., Gold, L., Ukoumunne O.C., Sharon Goldfeld, S., Le, H.N.D. & Reilly, S (submitted) .Improving outcomes of preschool language delay in the community: Protocol for the *Language for Learning* randomised controlled trial.	**Format** ☐ **Manual** ☐ Approach ☐ Technique **Evidence rating** ☐ Strong ☐ Moderate ☐ Indicative

Title: **61. PROMPTS FOR RESTRUCTURING ORAL MUSCULAR PHONETIC TARGETS (PROMPT)**	
Description of aims and objectives PROMPT (Hayden, 2006, 2008) is a sensory-motor, cognitive-linguistic intervention model for use with children with speech production disorders. It can be used with children as young as 2 who have sensory, motor, and phonological impairment affecting their speech development. Typically children will have an articulation, motor speech or speech production disorder affecting motor execution, motor planning, fluency or prosody. Intervention begins with a holistic assessment of the child in terms of physical-sensory, cognitive-linguistic and social-emotional domains. This profiling helps to identify the best context for speech intervention and allows the clinician to embed all goals within a larger communication framework. In addition, the Systems Analysis Observation checklist is used to assess the child's speech subsystem control and development (i.e. tone, breath support, valving, mandibular-, labial-facial-, lingual- and sequenced actions and prosody). This tool is used to identify the targets for intervention within the motor speech subsystems. **Delivery** The PROMPT approach works on motor practice within social interaction and activities of daily living such as during book sharing activities or bath time. PROMPT can be delivered at home, in school or in a clinic environment in individual or group sessions depending on the child's needs. Dosage will depend on the child's presentation at the start of intervention but changes in a child's motor speech control and/or language production should be seen within four to eight sessions. PROMPT utilises a holistic framework and requires a knowledge of neuromotor principles and speech subsystems. As a consequence, it can	**Target group** ☐ **Speech** ☐ Language ☐ Communication ☐ Complex needs **Age range** ☐ **Preschool** ☐ **Primary** ☐ Secondary **Focus of intervention** ☐ Universal ☐ **Targeted** ☐ **Specialist** **Delivered by** ☐ **Specialist** ☐ Teacher ☐ Assistant ☐ Other

take a couple of years to train as a PROMPT certified SLT.

Level of evidence

Three studies using the PROMPT approach have been reported in peer-reviewed journals. Two of these have focused on individuals with aphasia and apraxia of speech and so are not relevant for this summary of its usefulness with children. Rogers et al., (2006) compared progress with PROMPT with an alternative intervention in a single subject designed study with ten nonverbal children with autistic spectrum disorder aged between 2 and 4 who were randomly assigned to each group. One child in each group made no progress. The remaining four children in the PROMPT group acquired words during the 12 week intervention period. Although this study included randomisation, the results were reported for single cases rather than for groups of children and the number of participants is small. The evidence for this approach is therefore at an **indicative** level.

References

Hayden, D. (2006). The PROMPT model: Use and application for children with mixed phonological-motor impairment. *Advances in Speech-Language Pathology, 8,* 265-281.

Hayden, D. (2008). *P.R.O.M.P.T. prompts for restructuring oral muscular phonetic targets, introduction to technique: A manual.* Santa Fe, New Mexico: The PROMPT Institute

Rogers, J.J., Hayden, D., Hepburn, S., Charlifue-Smith, R., Hall, T. & Hayes, A. (2006). Teaching young non-verbal children with autism useful speech: A pilot study of the Denver Model and PROMPT interventions. *Journal of Autism and Developmental Disorders, 36,* 1007-1024.

Format

- Manual
- **Approach**
- Technique

Evidence rating

- Strong
- Moderate
- **Indicative**

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