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Becoming a manual occupation? The construction of a therapy manual for use with language impaired children in mainstream primary schools

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Abstract

Background: The construction of therapy protocols for a large-scale randomized controlled trial comparing speech and language therapists and assistants, and group and individual therapy approaches for children aged 6–11 in mainstream schools is outlined.
Aims: The aim was to outline the decision-making processes that led to the construction of the research therapy manual, and to give a preliminary report on compliance with the manual.
Methods & Procedures: A search of the research and professional literature and of published therapy materials was conducted to locate usable examples of effective language therapy for primary school children. Results were collated into a manual of therapy principles and activities to structure research intervention. The use of the manual with children ($n = 30$) receiving individual or group direct therapy from a speech and language therapist in the first phase of intervention was audited.
Outcomes & Results: Very few high-level research studies were found, but the professional literature gave added information. Therapies for comprehension monitoring, vocabulary development, later grammar and narrative were adapted for the research intervention, and procedures compiled into a manual to guide research speech and language therapists and assistants. The audit of direct

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therapy suggested that the manual was useable, providing a suitable range of activities and materials for therapy intervention. Its use helped to record the therapy offered to research children, and formed a sound basis for discussion amongst speech and language therapists and between speech and language therapist/assistant pairs.
Conclusions: The construction and use of a therapy manual allowed the provision of replicable therapy within the research project whilst maintaining flexibility.

Introduction

This discussion paper is set within the context of an ongoing research project[1] that aims to compare the costs and effectiveness of direct therapy, delivered by a speech and language therapists (SLTs), with indirect therapy, where SLT assistants undertake delivery; and of individual therapy with intervention delivered to groups. These service delivery contexts give four research intervention modes, and there is also comparison with a fifth set of children receiving ongoing therapy from their local SLT services. The research design is a randomized controlled trial (RCT), which anticipated up to 250 children being randomly allocated to the five intervention modes. Research intervention is carried out in Glasgow and in Edinburgh, and involves five qualified SLTs and five SLT assistants, working in therapist–assistant pairs. Each research intervention child receives around 22 hours of language therapy delivered thrice weekly in 30–40-min sessions in school settings over a 4-month period. The care aim is habilitative.

The children in the study have primary language impairment, defined as a non-verbal IQ score above 75 on the Wechsler Abbreviated Scale of Intelligence (WASI; Wechsler 1999) and receptive and/or expressive language scores less than –1.25 SD on the Clinical Evaluation of Language Fundamentals (CELF-III^{UK}; Semel *et al.* 2000). They have no reported hearing loss (>20 dB) and no speech, motor, dysfluency or other impairment that would necessitate direct SLT intervention. They are aged 6–11 years, and so are of an age where their language problems are unlikely to remit spontaneously (Bishop and Edmundson 1987, Stothard *et al.* 1998). The children attend mainstream schools, which is the normal educational setting for such children in line with UK policies of social inclusion. These eligibility requirements are intended to be sufficiently broad to represent the wider clinical group of language-impaired children of concern to SLTs (Plante 1998), and to reflect the commitment of many SLT services to working in schools (RCSLT 1996: 54). Mainstream school children in the UK frequently receive therapy indirectly via SLT or classroom assistants (Law *et al.* 2000), and many issues are raised by such wholesale transfer of therapy to unqualified staff (Law *et al.* 2002). Effectiveness research into modes of service delivery for this population is therefore timely.

The research study is ongoing, and therapy outcomes and results will be reported elsewhere. However, to compare modes of service delivery it was necessary to determine and provide therapy for each research intervention child. This is not a simple matter, and this paper discusses the ways in which the research team constructed the manual of therapy protocols used in the research intervention.

Components of a manual

The practical requirement was to plan and deliver appropriate therapy in each research intervention mode for up to 200 children across five therapist–assistant

pairs working in two cities. The remaining 50 or so children would receive therapy services from their local NHS Trusts. Although the children's language impairments were broadly specified by the eligibility criteria, their age range was wide, spanning the primary school years, and the children's language needs were predicted to vary. Language therapy had to be sufficiently flexible to adapt to each child's needs; to be delivered in any of the four therapy modes; to allow for child progression; to be mediated through games and activities of interest to primary school children; and to fit in with the Scottish 5–14 School Curriculum. However, therapy also had to be specified carefully enough to guide research SLTs towards providing comparable child experiences, and to allow future research replication. As Rutter (2000: 283) stated:

> It is crucial to have a specification and measurement of the 'treatment'. Unless there is further specification, it is no more useful to find out that 'speech therapy is effective' than it is to obtain a similar answer for 'psychotherapy' or 'medication'. Practitioners cannot apply the findings until much more is known about the treatment involved.

Rutter argues that one way of dealing with the competing requirements of flexibility and replicability is to use a therapy manual. A manual specifies the rules and procedures to be followed in complex interventions, and may provide decision-making criteria to guide practice. It also offers opportunities for modification and elaboration within the overall package, placing relatively few constraints on therapists while allowing an overall similarity of approach. Manuals are widely used in other therapy professions that deal with complex human change, such as psychotherapy, counselling and clinical psychology (Wilson 1996, Beutler 1999), and some of the language kits designed for early language intervention reviewed by Harris (1984) contain instruction manuals that adopt comparable approaches. No similar work could be found that met the needs of the research population, requiring the research SLTs to spend the first months of the project constructing a suitable manual.

The dimensions that a therapy manual should use to specify intervention are not profession specific, and the four components listed by Carroll (1997) were adopted for the research project. A manual should detail the following:

- *Structural* aspects of treatment, in terms of the frequency and duration of sessions. In the present project, these are prescribed by the research design, as outlined above.
- *Boundaries* of treatment. This specifies what intervention is expected to occur, and what would be discouraged. These limits were also set by the project design. Research intervention was expected to focus on language therapy, with limits resulting from the use of assistants. Children were excluded from the project if their primary type of communication difficulty suggested that they could not reasonably be randomized to work with an assistant, and there could be no research intervention that required specialist SLT skills. This excluded work on phonology, dysphagia, dysfluency, alternative/augmentative communication, pragmatics and other complex aspects of communication pathology.
- *Goals* of therapy and the *processes* used to reach them. The overall goal was language gain, but it was necessary to define specific goals and language

targets for each child. Ways of using assessment information on entry to the project to suggest intervention targets and broad priorities were needed. Means of achieving targets would ideally be based on current therapy practices of proven efficacy, in line with the principles of evidence-based medicine. Finding such therapies required a detailed literature search, as outlined below. Suggestions about activities and materials through which language learning would take place were also required. Drawing up this component proved to be a major task in devising the manual.

- *Active ingredients* or unique features of interventions through which effects are expected to occur. This is a concept derived from drug studies, and may be hard to determine for other types of intervention. Klein (1997), for example, contends that it is debatable whether there are any 'active ingredients' specific to psychotherapies. The Medical Research Council argues, however, that there are benefits to identifying 'active ingredients' within complex interventions such as the current research project, to distinguish essential elements from those that are not related to any treatment effect. The MRC (2000: 7) also recognizes that the paucity of high-quality literature available in many complex interventions means that some level of original research to determine active ingredients may have to be undertaken in the early phases of intervention evaluation. It recommends using theoretical principles, modelling and qualitative research to identify them. This was the situation pertaining within the present research project, and consideration was given to the elements considered necessary for therapy to 'work'.

The principal decisions taken in developing the manual were therefore concerned with the last two components, determining the areas and activities of therapy, and deciding upon and listing 'active ingredients'. How these components were developed is discussed in the following sections.

Goals and activities of therapy

Research literature

To determine the areas of language therapy where goals could be set and the processes through which they could be achieved, a search was made of the research literature for examples of language therapies of proven effectiveness with the relevant population. A recent systematic literature review (Law *et al.* 1998) had examined treatment efficacy in children up to 7 years and this was extended to the age range 6–11 years. A search for treatment efficacy from group design studies showing benefits relative to untreated controls was carried out using search strategies based upon those used by Law *et al.* A search of the four major databases relevant to the study (Medline, PsyInfo, ERIC and Linguistics and Language Behaviour Abstracts) yielded only four published controlled studies of intervention. A further unpublished research study was also identified (Johnson and Thomas 1995) that gave results pertaining to indirect therapy, but no details of therapy activities. A summary of these studies and of their outcomes is shown in table 1.

All five of the studies targeted expressive language, with three utilizing individual, 'didactic' approaches to treatment delivered by an SLT (Law *et al.* 1998). Only Johnson and Thomas (1995) reported outcomes for receptive language.

Methany and Panagos (1978) carried out an RCT to compare the effects of

Table 1. Details of group design intervention studies

Study	Language domain	Details of sample	$N_{t+}N_e$	Treatment	Duration of treatment	Study design[1]	Instrumentation	d^2 (95% CI)
Methany and Panagos (1978)	expressive language	mean CA 73 months	8+8	direct individual didactic	5 months n/a hours n/a sessions	RCT	norm-referenced (PCLT)	+1.00 (0.04/+2.03)
Wilcox and Leonard (1978)	expressive language	mean CA 63 months 67% males	12+12	direct individual didactic	n/a months n/a hours n/a sessions	Q/E	criterion-referenced	+2.38 (+1.33/+3.42)
Hirschman (2000)	expressive language	Group 1: mean CA 112 months mean NVIQ 114	18+8	direct group hybrid	9 months 137.5 hours 55 sessions	Q/E	criterion-referenced	+0.80 (−0.16/+1.76)
		Group 2: mean CA 126 months mean NVIQ 109	10+5					
Hyde-Wright (1993)	expressive language (word finding)	mean CA 78 months 50% males	4+4	direct individual didactic	4 weeks 6.67 hours 20 sessions	Q/E	criterion-referenced	+2.50 (+0.65/+4.35)
Johnson and Thomas (1995)	expressive and receptive language	mean CA 90 months	30+20	indirect group didactic	16 months n/a hours n/a sessions	Q/E	norm-referenced (CELF-R) (Bus Story)	+1.05 (+0.45/+1.65)

Programmed Conditioning Language Test (PCLT) (Gray and Ryan 1973).
Clinical Evaluation of Language Fundamentals (Revised) (Semel and Wiig 1987).
The Bus Story—A Test of Continuous Speech, 2nd (Renfrew 1991).
[1]RCT, randomized control trial; Q/E, quasi-experimental design.
[2]d, Standardized effect sizes, the difference between the post-test means of treatment and non-treatment control groups divided by the pooled standard deviation for each study, corrected for population effect size bias. This provides a means of converting outcome measures from studies into a comparable metric.

articulatory training and syntax training upon articulation and syntax skills over a 5-month intervention period. Training was provided using the highly structured Monterey Language Programs (Gray and Ryan 1973) that use imitation and reinforcement of correct production of language forms. Expressive language outcomes are reported, and results revealed that the articulation and syntax training were equally effective, although caution was needed on account of the small number of participants ($n=16$).

Wilcox and Leonard's (1978) study was designed to evaluate the effectiveness of a training programme to help SLI children to produce correctly /wh/ question forms by means of modelling with instructions and differential reinforcement. The experimental procedure was highly effective, and there was also evidence of generalization to untrained /wh/ forms. However, it was not possible to ascertain from the paper how much therapy took place, and some of the 24 children were below 6 years.

Hyde-Wright (1993) personally delivered elaboration and retrieval training as part of an intervention to improve the word-finding skills of four school-age SLI children. Following 4 weeks of training, the children in the experimental group had significantly higher accuracy scores on a picture-naming task compared with controls, although it should be noted that one of the experimental and two of the control children were aged less than 6 years.

In contrast to the individual approaches, Hirschman's (2000) study was designed to provide group-based metalinguistic training by the author (a 'hybrid' approach) to help SLI children increase their use of complex sentence structures. Two experimental groups (one aged 9 years plus, $n=18$; the other 10 years plus, $n=10$) and their associated control groups ($n=8$ and 5) participated in the oral part of the study. Results revealed significant outcomes for the younger children in terms of the structure of their expressive language (in terms of a criterion-referenced complexity index and a subordination ratio: $p<0.05$) but only marginally significant outcomes for the older children ($p<0.10$). A pooled effect size based upon the combined data for the two groups (table 1) reveals that the overall effect fails to reach statistical significance.

Finally, Johnson and Thomas (1995) carried out an evaluation of school-based indirect group therapy delivered by speech and language assistants working under the direction of qualified therapists. This involved 50 children in mainstream primary schools with language delay (age range 5;1–11;2, mean 7;6), 30 in a group-based treatment group and 20 controls receiving routine clinic-based speech and language therapy where appropriate, but no school-based therapy. The results revealed that the children in the intervention group made highly significant progress over the three school terms of the project, for example making average increases in standard scores of up to 16 on norm-referenced tests such as the CELF-R (Semel and Wiig 1987), corresponding to standardized effect sizes of $+1.85$. Further, direct comparisons of the outcomes for the intervention and control groups also yielded standardized effect sizes of $+1.05$ (95% confidence intervals $+0.45$/$+1.65$) on the Bus Story Test (Renfrew 1991).

These five studies involved 139 children in the 6–11-year age group and demonstrate significant and substantial outcomes based on table 2.

There was therefore evidence for the efficacy of both direct and indirect, group and individual, didactic and hybrid approaches to intervention, although establishing the *relative* benefits of direct versus indirect and individual versus group modes

Table 2. Standardized effect sizes × intervention condition from five RCT and quasi-experimental group designs 1970–2001 involving 139 children in the 6–11-year age group

Direct intervention		Indirect intervention	
Individual	*Group*	*Individual*	*Group*
+2.37[1]	+.80[2]		+1.05[3]
+1.00[4]	+2.50[5]		

[1]Wilcox and Leonard (1978).
[2]Hirschman (2000).
[3]Methany and Panagos (1978).
[4]Hyde-Wright (1993).
[5]Johnson and Thomas (1995).

of speech and language therapy for children with primary language impairment requires a full-scale clinical trial as undertaken by the present project. The research literature gives evidence mainly of gains in expressive language, with a shortfall of studies focusing on language comprehension. All but two studies rely on criterion-referenced measures, and studies using standardized measures are needed. The small number of studies, their varied language targets, the small number of children involved and the lack of standardized measures indicates severe limitations in the body of effective language therapies published. However, there was at least some evidence that therapy could be effective in developing aspects of syntax and vocabulary.

Professional literature

The research literature forms the highest level of evidence, but the limited amount uncovered meant that further examples of effective language therapy were sought in the professional literature. This 'grey literature' consists of textbooks and non-indexed materials, where much practical work is published. It supplies evidence of a lesser order of validity (NHS Centre for Evidence-Based Medicine 2002), but given the limited amount of high-level evidence available, such that efficacy of language therapy had not been proven: 'existing standard practice for the disorder should be considered, that is, whether a group of one's peers would reasonably expect to carry out similar strategies' (RCSLT 1997: 6). The professional literature provides evidence for existing SLT practices, often in small-scale and uncontrolled studies. Therapists who disseminate their work usually do so because they think it is successful, and publish therapy materials that they consider useful enough to share after refinement and development by publishers. It was appropriate to investigate these sources. Information was sought on therapies that detailed their procedures and activities, and which had considered effectiveness in some way.

A library search of textbooks was made and relevant papers, project reports, course handouts and booklets were collected from the main organizations concerned with therapy in schools in the UK: Association for All Speech Impaired Children (AFASIC); Invalid Children's Aid Nationwide (I-CAN); National Association of Professionals Concerned with Language Impairment in Children

(NAPLIC); Royal College of Speech and Language Therapists (RCSLT) and also from the American Speech, Hearing and Language Association (ASHLA). These provided an up-to-date overview of some current therapy practice.

Case studies by Lewis and Speake (1997) on vocabulary learning added to the research data retrieved, confirming the benefits of teaching elaboration and retrieval strategies for vocabulary development. Casework by Bryan (1997) and a review by Fey and Proctor-Williams (2000) gave further information on sentence development therapies. A cohort study by Johnson (2001) based on the work of Dollaghan and Kaston (1986) was effective in helping school pupils with language impairment monitor their comprehension. Work by Catherall (1998) on children's narrative abilities had been developed via a pilot project in mainstream primary schools in Stockport, UK (Shanks 2000) into a pack of activities and ideas by Shanks and Rippon (2001). These therapies therefore had some empirical support for effectiveness, albeit short of controlled intervention studies, and provided details of the materials and activities carried out with children. Other materials retrieved showed that similar approaches were being carried out by SLTs, although without published evidence of effectiveness.

Published therapy materials

Despite the limited number of research studies, there proved to be a considerable amount of published therapy material for school children. A search of publishers' catalogues produced a range of materials freely available for reproduction that gave further insight into current therapy practice. The value of such material was informally validated in meetings with referring SLTs in Glasgow and Edinburgh, who gave their opinions on its usefulness.

Language therapy in the manual

The language content of the research therapy was determined using the results of the searches reported above. Areas to be targeted were the development of comprehension strategies, vocabulary, later grammar and narrative. Some therapies had been found in each area that gave details of procedures, had been validated in the field and could be supported by a selection of widely used and copyright-free published materials, supplemented with Clipart and Boardmaker software.

The research SLTs therefore determined on the following main areas of intervention for inclusion in the manual:

- Comprehension monitoring: adapted from Johnson (2000), helping children to identify speaker and listener aspects of successful comprehension, and to seek clarification when they did not understand.
- Vocabulary development therapy: comprehending, learning and using words relating to concepts relevant in schools, and teaching children self-cueing strategies to help them retrieve new vocabulary items. Following Hyde-Wright (1993) and Lewis and Speake (1997), the approach included reflecting on the meaning, phonological and semantic aspects of selected words and using 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 child self-reflection and the development of independent strategies for learning words.

- Grammar therapy: teaching age-appropriate understanding and use of grammar. A list of later grammar markers was collated, to be taught in salient contexts following Fey and Proctor-Williams (2000). The work of Bryan (1997) on 'Colourful Semantics' was adapted to provide activities highlighting the relationships that underlie syntactic structures.
- Narrative therapy: teaching comprehension and use of narrative. This was based on Shanks and Rippon (2001) and used materials from their activities pack.

A straightforward account explaining and interpreting these areas was written to be intelligible to the research SLT assistants, cross-referenced to the original sources, and a list of suitable published materials and activities was collected for each area.

Deciding amongst language goals

The criterion for admission to the study was completion of the CELF-III^{UK}, and when children entered they then carried out the British Picture Vocabulary Test (BPVS-II: Dunn *et al.* 1997) and an informal narrative sample. CELF parental and (if possible) teacher questionnaires (Semel *et al.* 1996) were also collected. These assessments indicated broad areas of language difficulty. A criterion was chosen somewhat arbitrarily of a relevant CELF subtest score at 6 or below as giving evidence of eligibility for an intervention area. Thus, eligibility for comprehension monitoring was assessed as any CELF receptive subtest score at 6 or below or a Standard Score of 80 or below on BPVS (i.e. the 10th centile). Any CELF expressive subtest score at 6 or below gave evidence of potential eligibility for vocabulary development. A syntactic error analysis (Crystal *et al.* 1976: 78ff.) based on the narrative sample backed up by observations of surface grammar errors in free speech was used to determine potential eligibility for grammar therapy, with an episode analysis of the narrative sample to determine needs for intervention in that area. In addition, note was taken of any pre-existing Individualized Education Plan (IEP) or SLT targets in relevant areas; parental and teacher comments on the CELF questionnaires; the CELF rapid automatic naming optional subtest; and CELF item analyses.

Where a child had more than one eligible area (as was common), a sequence of intervention areas was suggested:

- It was assumed that comprehension monitoring was a fundamental coping strategy, important for classroom success. It was therefore anticipated that this would be the first area of therapy tackled for the majority of eligible intervention children.
- Vocabulary development is an area of growth throughout the primary school years, and most language-impaired children require strategies for learning and retrieving new words. It was probable that vocabulary development would be important for most of the research children, and would be sequenced in intervention just after comprehension monitoring. However, its importance relative to grammar would vary from child to child.
- Spoken grammatical errors were considered important for several reasons: they were developmentally inappropriate, they were noticeable and might

serve to particularize a child, and they were unlikely to be dealt with other than by direct grammar therapy. This meant that grammar would normally be a priority for children showing marked difficulties, to be dealt with in parallel with or instead of vocabulary development.

- Narrative development depends upon the use of relevant vocabulary and grammatical markers, and is also tackled to some extent in the Scottish 5–14 Literacy curriculum. It was expected that narrative would be tackled if grammar was sufficiently well developed, and for many children word knowledge would take precedence.

The manual was therefore indicative but not prescriptive about the sequences of intervention. It was also recognized that factors other than assessment results could influence decisions: child factors such as concentration and motivation, and external factors such as existing therapy targets, parent or school priorities, and perhaps individual SLT preferences might also be relevant. For children randomly allocated to groups, common therapy aims might be sought that would affect intervention areas and language goals. Detailed goal setting within the manual's therapy areas was therefore not predetermined, but decided upon by SLTs for each child at the start of the intervention period, and reviewed as progress was made. Activities could be selected to cope with such variation. 'Probes' consisting of short, unaided language tasks that could be carried out by an SLT or assistant were written into the manual in order to help monitor children's progress towards therapy targets.

Determining 'active ingredients'

The therapy team discussed the 'active ingredients' of language therapy, using brainstorming techniques, and consulting recent UK models of the therapeutic process. These models stress the need for therapy activities to take place in a facilitating environment, where there is respect for the child and the communication context is adapted to meet best the child's needs. This 'artistry' aspect of intervention is variously described in the SLT literature as the *philosophy* level of therapy (Bray *et al.* 1999); as characteristic of an *effective and empathic* practitioner (Williamson 2001: 16–18), and by managing good relationships with others as an aspect of *emotional literacy* (Williamson 2003: 21). Discussion of these ideas resulted in the consensus that for therapy to 'work', it should develop a child's ability to reflect on language; provide them with information on appropriate language formulations; and encourage them to take responsibility for change. Activities that took account of these powerful factors underpinning change would involve the following:

- Formation of a strong therapeutic alliance between the SLT/assistant and child, focussed on the alleviation of communication problems.
- Encouragement of child self-reflection and self-monitoring.
- Repeated exemplification and practice of language features in a motivating context.

These 'active ingredients' were developed into 'golden rules' to guide the implementation of therapy activities for assistants, and a set of suggestions for setting up a 'communication friendly' classroom to be given to teachers. The golden

rules contained guidance on explaining tasks, setting up 'fun' therapy, giving systematic feedback, helping child comprehension, and using appropriate adult language levels and question forms. Specific techniques to reinforce child talk and self-reflection were listed.

Advice on creating a 'communication friendly' classroom involved adapting and extending guidance for teachers issued by the Scottish Office Education and Industry Department (SOEID 2000: 23) as part of its development of the Scottish 5–14 Curriculum for pupils with language and communication disorders. This was elaborated into general guidance, supplemented with a list of helpful suggestions with specific ideas highlighted for classroom teachers to meet the needs of individual children.

The resulting therapy manual therefore gave advice about the context of language learning; contained broad suggestions about which children might be eligible for which areas of intervention; advised on selecting intervention areas; outlined overall approaches with relevant games and activities; and listed materials that could be useful. A draft version of the manual was sent out to consultants in the SLT and primary teaching fields for comment, and adopted for the research intervention with minor additions and amendments.

Using the manual

Once a manual is written, it is important to monitor how practitioners adhere to its use. In the project research, SLTs decide upon therapy targets for all children, but additional factors may be relevant when they are working through assistants. Intervention areas and targets were therefore audited for the first set of children entered into direct therapy around 6 weeks after the start of the intervention period, as a preliminary check on therapist compliance with the manual.

At the point of audit, 30 children were receiving direct therapy, having completed varying numbers of sessions depending upon when they joined the project, 18 individually and 12 in groups of three to five. All met the project entry criteria, and the group had the following characteristics: 23 males, seven females; age range 6;03–10;04; WASI mean 90, SD 10, range 76–120; BPVS mean 86, SD 9, range 60–108; CELF Receptive mean 74, SD 8, range 64–80; CELF Expressive mean 68, SD 5, range 64–83; CELF Total mean 69, SD 5, range 64–80. Four children had expressive language problems, with CELF receptive scores above the cut-off point: the other 26 had mixed receptive/expressive problems.

Twenty-nine children had received comprehension-monitoring therapy as the first part of their intervention. The remaining child's SLT had also tried to begin therapy in this area, but had changed tack immediately as the child could not cope with the ideas presented. Twenty-nine of the children had been assessed as 'eligible' for comprehension monitoring therapy on the suggested criterion of at least one CELF receptive subscore of 6 or below. The remaining child had relatively good receptive language skills, but the therapist devoted the first three sessions to comprehension monitoring to 'break the ice'. All five SLTs felt comprehension monitoring provided opportunities to form good relationships with children, to explain what therapy entailed and how 'good listening' worked. It also provided a prosocial and facilitative environment for forming relationships in groups.

Sixteen of the 18 individual children had then moved on to vocabulary development therapy: all met the eligibility criterion. One had moved on to

grammar therapy and the last to narrative. This reflects the wide range of work encompassed by vocabulary development therapy, and as anticipated a large number of children required intervention in this area.

Research SLTs were also thinking ahead, and planning future areas of work. Fourteen of the 18 individual children had outline plans to complete therapy in three of the four areas in total; three children for two areas and one child for all four areas.

SLTs had also constructed group aims from the manual. All three groups had completed comprehension monitoring and were working on vocabulary, differentiating tasks for children, and two were planning to move on to aspects of grammar. Thus, two groups were planning to work on three major therapy areas, and one group within two. In groups, pragmatic aspects of language may assume importance, and one child was receiving additional reminders about turn-taking skills that were not specifically addressed in the manual. Otherwise, for the 30 children audited, SLTs had been able to select language areas, set targets and select activities from the manual, and were undertaking intervention that they felt met the children's therapy needs.

Conclusion

At each stage of writing the manual, decisions had to be made. The wisdom of each of these is open to debate, and the bases for decisions are presented here to stimulate discussion amongst SLTs faced with comparable issues. It became clear that there was an overall lack of evidence on therapy effectiveness for this population of children, and that an RCT was being embarked upon without a substantial body of exploratory and cohort studies to map the route.

However, a useable guide to therapy has been constructed. The manual was produced before meeting the research children, but when tested against the first set of children to receive direct therapy, it suggested interventions, activities and materials with which research SLTs felt comfortable. Predictions about the major areas of therapy need were borne out, and no substantial additions or deletions were required. It proved possible to record the therapy undertaken by each research child, and to form a sound basis for discussion amongst SLTs and between SLT/assistant pairs. In these ways, the manual has encouraged replicable therapy, and compliance with manual procedures could be monitored. It allowed the research team to ensure that children were receiving comparable therapy experiences, and to explain to non-therapists, parents and teachers what was taking place.

Further evaluation of the manual and its effectiveness must be related to children's therapy outcomes when therapy is over, which will be measured as gains on CELF scores. The preliminary conclusion, however, is that working through a manual can have positive benefits for the sharing of knowledge, for teamwork and for collaborative therapy planning. There are considerable cost implications in constructing a manual (and a cost–benefit analysis forms part of the project design), but the research intervention team felt that there had also been real benefits in terms of replicability, comparability across therapy modes and guidance to assistants. By being specific about the protocols in this way, future child outcome measures should be related clearly to therapy procedures, which is a fundamental requirement for effectiveness researchers.

Note

1. '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.' This research is funded by the UK National Co-ordinating Centre for Health Technology Assessment, acting on behalf of the NHS Executive and is a large-scale trial of SLT approaches for children with language impairments in mainstream schools. The grantholders are James Boyle, Elspeth McCartney, Anne O'Hare, John Forbes (Edinburgh University) and Pauline Beirne (Yorkhill NHS Trust, Glasgow). The views and opinions expressed in this paper do not necessarily reflect those of the commissioning bodies.

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