THE EFFECT OF TRAINING SETTING
ON PARENTS' USE OF LANGUAGE FACILITATION SKILLS
WITH THEIR LANGUAGE DELAYED
PRESCHOOL CHILDREN

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Barry S. Newcombe

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Abstract

When young children do not acquire language skills at an appropriate rate before entering school, the delay can impact detrimentally on later learning opportunities. Particularly during the preschool years the children’s immediate caregivers, usually the parents, are likely to have the most frequent opportunities to interact through language with the children and are therefore recognised as significant intervention agents in cases where delay is evident. A review of studies which had involved training parents in the use of language facilitation skills found that training programmes are generally successful in assisting parents to acquire new skills, that parents can maintain their use of skills for some time after the training has ceased and that parents use of new skills can have a positive impact on the language development of their children. The effect of the setting in which training takes place on all of these factors has not been systematically evaluated. The present study was designed to compare the effects of home-based and centre-based training on parents’ continued use, after the completion of training, of particular conversational behaviours, and on their children’s language development. Parents were trained to use enthusiastic expression, scaffolding questions and scaffolding contributions of new information in conversations about past events with their children who had delayed language skills, as strategies for extending the time spent in conversational interaction with their children. Eight parent-child dyads participated in a training programme. Four received training in their homes and four in a clinic. Data on the parents’ conversational skills were collected via analysis of audio-tapes of conversations carried out in generalisation settings in the home prior to training, during the training phase and after training. Data on children’s participation in conversations was also obtained from the recorded conversations. The children’s language development over the duration of the programme was assessed. The findings suggest that the
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CHAPTER ONE
INTRODUCTION

There is an increasing belief in the community generally, and certainly amongst parents and educators, that the early childhood years are of vital importance for the establishment in young children of foundational skills upon which much of later learning depends (White, 1990). Central amongst these skills is an effective communication ability in a first language and with this a knowledge about how language works. These skills permit young children to most effectively participate in and benefit from opportunities and experiences available to them, express their needs and wants, and formulate and share their own developing theories about their world.

For the majority of children, acquisition and fluency of these early skills develops with amazing apparent ease. However, the rate of skill development for many children is somewhat slower. In many cases there are neurological explanations for the different rates of development but for others the reasons are not evident.

Previous attempts to find ways to minimize delays in development occurred mainly in research contexts. Reports of these interventions (e.g., The Consortium for Longitudinal Studies, 1983) most often described the work of therapists working with children applying intervention programmes and assessing their effectiveness over varying periods of time.

This was essential foundational work. It helped to identify numerous techniques and procedures which were efficacious in improving rates of development (e.g., Schweinhart & Weikart, 1985; Schweinhart, Weikart & Larner, 1986). This work also helped to identify limitations in both intervention procedures and evaluation procedures (e.g., Simeonsson, 1985).
Significant amongst the issues identified as requiring further clarification and assessment, was the role of parents as intervention agents with their own children. There may be many explanations for the increased prominence of this matter. It is likely that included amongst these would be the fact that earlier research had provided professionals with evidence of the kinds of interventions strategies most likely to be effective and so they could more confidently guide parents.

Additionally, principles of normalisation had received increased attention in discussion about the learning needs of those whose development was not proceeding in a typical manner and this is likely to have influenced thinking about the role of parents in programmes addressing the needs of young children. The attention of many professionals became directed at ensuring that parents were empowered to fulfill their responsibilities towards their children. Ecological theory emphasized the importance of natural environments, such as family interactions in the case of young children (Wells, 1981), as the most appropriate learning contexts to bring about normalising effects. Further, data from the application of these principles provided some support for the efficacy of interventions with such a basis.

Added to this was increasing evidence that children's early skill with language was a major determiner of educational outcomes (e.g., Snow, 1983) and with the most immediate impact on progress in the area which the majority of children identify as providing their prime reason for wanting to start school - learning to read. Thus, a challenge to research was to identify means of assisting parents, whose children were showing delays in their development of language, to acquire and continue to implement strategies that would facilitate children's increased skill with language.
The present study fits within this context. A good deal of research has been carried out on the topic of parent training but it seems that only a small portion of this has involved the systematic measurement of use of trained language facilitation skills and the impact of this on children. Parent training research is considered to have not yet adequately addressed questions about the generalisation of trained behaviours from training situations to natural, real life contexts nor about the maintenance of use of new behaviours over time.

The present study was designed to investigate the effects of two different training settings - a clinic setting and home settings, on parents, maintenance of conversation facilitation behaviours with their children who had delayed language. The children's language levels were also monitored.
CHAPTER TWO
LANGUAGE INTERVENTION
AND PARENT TRAINING

Introduction

This chapter provides a rationale for intervening in language with children who show delays, followed by overviews of attempts to remediate language deficits in young children. The chapter then discusses the important issue of generalisation of newly learned behaviours and examines a justification for involving parents as primary therapists with their children.

Rationale for Intervention in Oral Language

"... language is the sharpest and most flexible tool man has for passing on the cumulative discoveries of his culture" (Lawrence, 1971, p.7).

"Failure to acquire language normally is a developmental disaster. If unremediated, a language disorder will have pervasive effects on many aspects of a child's life..." (Warren & Kaiser, 1988, p.89).

There have been many attempts to reduce the cumulative negative effects that result from disadvantaged early childhood experience (The Consortium for Longitudinal Studies, 1983). Many of these early intervention programmes involved wide ranging, multi-faceted interventions spanning lengthy periods of time. The immediate benefits
of these programmes were often reported as gains on measures of general ability such as intelligence tests. Programme effectiveness has often been discussed in terms of the long-term benefits to the individuals with respect to such factors as college entry statistics, employment level and parenting competence. The present study addressed a similar area of concern but was short term and was concerned solely with one behaviour or aspect of development - oral language.

Studies have shown that there is a strong correlation between language skill on entry to school and later academic achievement (eg Shane & Silva, 1987; Snow, 1983; Walker, Greenwood, Hart & Carta, 1994). Measures of language taken prior to school entry are highly predictive of later verbal ability and achievement across most curriculum areas (Silva, McGee & Williams, 1983; Silva, Williams & McGee, 1987, Hart & Risley, 1995).

Research into early language learning suggests that the most efficient learning occurs when an interaction between a child and an adult centres on the focus of the child’s attention at a particular time (Wells, 1981). Further, Wells and Gutfreund (1984) highlighted conversational interaction between adults and children as the most important language learning experience for young children. As most children learn about language very effectively before they enter school, the typical kinds of early childhood activities which children have available would seem to provide good contexts for language learning (Snow, 1983). Snow also argued that there is ample evidence to support a strong connection between the development of literacy skills and distinctive features of
language used by children and their parents during preschool years.
Particularly important in this connection was the use of oral descriptions
of past events. Snow called this type of language 'decontextualized'
because the topic of conversation was not part of the immediate context.
Snow considered that children's experience with language of this type is
connected to later success with reading.

Several other writers have discussed this type of language
experience. Sachs (1983) discussed the emergence of 'displaced reference'
in parent-child language interactions and related this to children's
developing ability to handle discussion of abstract meaning. 'Displaced
reference' also refers to topics not in the 'here and now', but not
necessarily only in the past. Fey (1986) noted that, from the age of about
three years, children increasingly talk about topics that are not in the
immediate context. Miller and Sperry (1988) identified that, in early talk
about the past, young children used high levels of evaluative language
that communicated their attitudes about events and the emotional
significance of these for the children. Miller and Sperry postulated that
this language skill replaces non-verbal means of evaluative expression.

There have been attempts to identify causal connections between
particular types of parent language use and those same kinds of language
use by children at later stages. For example, Fivush (1991) found strong
correlations between parent use and later child use of orienting
information, causal/conditional information and number of statements
per turn in accounts of events. Orienting information is that which sets a
context for a listener. There was also a connection between parental and
child use of evaluative information in which thoughts and feelings about events are expressed.

McCabe and Peterson (1990) also examined relationships between parents' interaction styles and the development of children's skill at recounting their experiences in the form of oral narratives. They concluded that there are elaborative and repetitive styles of parental interaction. An elaborative style involves extending topics through appropriate questioning to fill in detail of the context of an event. A repetitive style involves higher frequency of topic changes and initiations by parents. Peterson (1990) observed that parents facilitate topic elaboration by providing a scaffolding of 'who', 'where' and 'when' questions which seek contextual information from children. These features are gradually included into the oral narratives constructed by young children as their language skills improve. So long as the questioning is open-ended it can function to guide the child to recall further relevant information within a conversation (Smith, 1992). A skilled parent will use questioning this way as scaffolding to assist in the construction of meaning between the conversational partners.

A further characteristic of parent speech to young children is the use of a range of strategies often referred to as motherese. These include the use of repetition, exaggerated intonation and expressions of delight (Wells, 1981). The significance of some of these features is not fully understood. However, they do appear to engage children's attention and help to extend conversational interactions (Wells, 1981; Smith, 1992).
The fact that children who start school with an advantage continue to extend that advantage has long been recognised (Walberg & Tsai, 1983). This phenomenon and its corollary, where those starting with a disadvantage tend to fall further behind at school, are frequently referred to as the 'Matthew effect' and have been discussed by Stanovich (1986) in relation to achievement in reading. A strong positive correlation has been found between children's preschool measures of language and their rate of progress in learning to read (Catts, 1993; Menyuk et al., 1991).

Skill in reading is foundational in the sense that it impacts on achievement in most aspects of classroom programmes at all levels of schooling. It is therefore important to attempt to identify factors that will give children the greatest opportunities to efficiently acquire reading skills on entry to school. A high level of fluency with oral language seems to be a major factor in determining this.

**Effect of Strategies to Remediate Language Deficits**

It is by no means clear that intervention programmes which target language delay in children are necessary or effective (Whitehurst et al., 1991). Some researchers report that spontaneous recovery of delays in children's language can occur without intervention especially where the delay is a delay in phonological development (Bishop & Edmundson, 1987; Paul, 1993; Paul, Spangle Looney & Dahm, 1991). Phonological delays influence the clarity of articulation and may impact on the comprehension of a child's language.

The most systematic attempts to evaluate the effectiveness of

Campbell and Stremel-Campbell (1982) used a multiple baseline across behaviours design to assess the effectiveness of training children to use 'is' and 'are' in question forms and statements. Their intervention involved provision of a series of positive reinforcers for the child's correct use in instructional and free play situations. Results showed a steady increase in correct use and gradual reduction in incorrect use of the target behaviours by the children.

In a study which used a multiple baseline across subjects design, Matson, Sevin, Fridley and Love (1990) used time delay, modelling and reinforcement procedures with children described as autistic, to bring about spontaneous use of "please", "thank you" and "you're welcome". The treatments were effective in establishing the desired behaviours performed without a model that were maintaining at six month follow up. Yamamoto and Mochizuki (1988) reported success in training three children with disordered language to use the response - "That's not it; give me ......." when they were offered an unrequested object. The target responses generalised to the free play setting.

Attempts to train larger classes of behaviours have also been reported. Charlop and Milstein (1989) assessed an intervention with
autistic children aimed at the acquisition and generalisation of conversational skills. Follow-up probes using untrained topics of conversation indicated that the conversational skills had maintained. In a study that looked at changes in both specific and general language behaviours in a single subject, Pecukonis and Pecukonis (1991) also reported positive treatment effects. A child described as an elective mute was trained to make eye contact, imitate object names and respond to open-ended questions. Praise and tokens were used as reinforcers. Parents were present during training and gains were reported to have generalised to spontaneous interactions with family and peers.

Warren and Kaiser (1988) reviewed the research in early language intervention in terms of the nature of the interventions. They questioned didactic training in which specific language forms and content are trained using adult controlled repeated trial approaches. Such approaches, they claim, have lead to difficulties in achieving generalisation of the target response classes to the natural environments of the child. Milieu approaches, on the other hand, provide for teaching in more naturalistic circumstances where language can be used for a real purpose. These approaches should therefore allow for greater generalisation of language behaviours. However, it is suggested that more research is needed to see whether this is so. Hybrid approaches, which combine features of didactic and milieu approaches, are still relatively unresearched yet may provide the most useful intervention strategies in situations where more severe delays exist or where intensive intervention is required to bring about changes in parents’ interactions with their children.
An initial structured learning experience in which there is opportunity for rehearsal of, and feedback on, new strategies may be most successful at the acquisition stage. When this is combined with planned procedures for applying the new strategies in natural, everyday contexts a powerful intervention may result with effects that will sustain.

Effect of Quantity of Language Experienced by Children

Hart and Risley (1995), in their work that began in the 1960s, were interested in developing language interventions to help overcome lower educational achievements in communities in the United States, particularly those with low social and economic levels. Their observations of children had suggested that the majority who did not have major organic causes impacting on their learning, were generally competent and had adequate language for all functional communication purposes. This gave some uncertainty about which particular aspects of language to target for improvement. In order to get some clarification on this, Hart and Risley (1995) observed the language experiences of one and two year old children with their parents. They then assessed the children at age three and again at nine years of age.

The general finding when the children were aged three years confirmed the earlier observations that the children were all talking fluently and were using language appropriately. Measures were made of both the quality features (summarised as encouragements) and quantity of the language used by the parents across three groups differing in level of social and economic status. The most important differences found among
the families was in the amount of talking that went on with greater amounts as the social and economic status of the families increased.

At age three years, the children were assessed on measures of vocabulary and Stanford Binet IQ. The IQ was used in this instance as a measure of how much general learning had occurred, rather than as a measure of ability. A direct positive relationship was found between these measures and the amount of language experienced by the children – measured as the number of words their parent said per hour. The strong positive relationship was still evident, between amount of early language experienced by children and their school performance, when the children were aged nine years.

Data on the quality features of language experienced by the children showed that there were not substantial differences between the groups in the richness of parent language. The quality features included diversity of vocabulary, symbolic emphasis (assessed through measures of nouns, adjectives, adverbs and past-tense verbs), emotional tone (assessed through comparing rates of affirmatives and prohibitors), and responsiveness. Major differences were evident in the amount experienced per hour by each group and therefore major differences in the total amount of experience the children had with these features over the years when their language skills were developing. These cumulative differences had an impact on the children’s language. The cumulative differences in the amount of language experienced by children in the different family groups became sufficiently large to lead Hart and Risley
(1995) to conclude that, by about the age of four years, it would become impossible for intervention programmes to close the gap.

Hart and Risley (1995) suggest full-time day care as one possibility for children whose parents are not likely to provide the amount of language experience necessary to ensure successful educational outcomes. Alternatively, through parent coaching, a focus on helping parents ensure that their children get enough early language experience is suggested. Hart and Risley have directed a considerable amount of research effort at determining appropriate content for language intervention programmes. These efforts have focused on naturally occurring events in the daily activities of children as language teaching opportunities.

**Milieu and Hybrid Intervention Strategies**

Incidental teaching, as defined by Hart and Risley (1975), refers to a specific procedure used to prompt language use by children in naturally arising interactions between an adult and a child in unstructured or semi-structured situations. A key feature of incidental teaching is that the child who is in need of help initiates the interaction. The strategy has been widely applied in intervention programmes. However, Hart and Risley’s research established the power of the strategy as a means of prompting language use in children. The child’s request for assistance may be either verbal or non-verbal and when it arises the adult must decide what language behaviour is required from the child. Physical cues from the adult, such as eye contact with the child and a questioning facial expression, are first given to signal that attention is focused on the child.
If this does not prompt a statement from the child then a verbal cue is added. This cue can be varied depending on the kind of language behaviour required from the child and what is known about the child's language skills. The cue may be a question or mand eg. "What do you want?" - or it may include a model of the response required eg. "Say - Push please", or it may involve both of these cues in a mand-model procedure.

Clearly the adult's choice of the language which is to be required from the child must be appropriate in the sense that the child's existing language skills are known and slightly more elaborate language is cued by the adult. If the task is too difficult then there is a risk that the child will opt to do without the assistance or find some other way to obtain it.

Hart and Risley (1968, 1974) have used incidental teaching procedures to bring about substantial changes in the oral language behaviour of children with delayed language development. Through gradual changes, the required language behaviour was elaborated from single word or short utterances to the stage where children were using compound sentences. Because of the possibility that children might have found the incidental teaching procedures aversive, the children's choice of play materials was monitored in the Hart and Risley (1974) study. A marked decline was evident in choice of freely available play materials and a preference shown for items and activities associated with incidental teaching procedures - that is, those available only following the language interaction with the teacher. This observation was taken to indicate that
the children in this study were not finding the procedures aversive and might indeed have been strongly reinforced by the interactions.

In a further study, Hart and Risley (1980) examined the spontaneous language of children who had previously participated in incidental teaching programmes aimed at increasing their use of compound sentences and found a range of generalised benefits. These included an increase in the amount of talk, the use of more elaborate vocabulary and the use of more complex sentence types. The pattern of language use had become very similar to that of a comparison group of children from middle class families who were considered to have normally developing language skills. It seems that, through the earlier intervention, the children’s language skill had moved to a level where the children were independently able to continue learning about language and acquire new skills.

Halle, Baer and Spradlin (1981) examined teachers’ use of delayed prompting as a language teaching procedure and found that children’s verbal initiations increased substantially when this procedure was introduced. The teachers were able to maintain their use of this teaching technique. While this study confirms that delayed prompting can be used to prompt initiations, the strategy can be regarded as one component on a continuum of the adult responses that comprise the incidental teaching procedure.

The Enhanced Milieu Teaching Programme described by Kaiser and Hester (1994) is an example of a hybrid intervention. In this programme environmental arrangement and incidental teaching strategies were used
with conversational interactions by trainers who were special education teachers. Particular child language targets were trained and the extent to which these generalised and were maintained was evaluated. Intervention took place in preschool classrooms and child language behaviours were only monitored in these settings. The target behaviours generalised to peers and to parents within the training settings.

Studies discussed in this section have attempted to identify effective intervention strategies and have had an interest in the issue of generalisation of children’s new language behaviours. However, the main intervention agents with the children in these studies have been therapists. While the studies do show that a range of intervention types can be effective in developing the language skills of young children, the children's parents have had little or no role in the majority of studies. It would seem that parents could have a significant role in extending the benefits of interventions with young children beyond training situations and in continuing to build on the benefits after training programmes have stopped.

**Generalisation and Maintenance Defined**

Encouraging parent involvement in language intervention programmes provides a number of advantages. Parents and children are together for greater amounts of time and frequently participate together in naturally arising interactions. Hence parents have more opportunities to intervene with their children in the desired ways than does a professional therapist. Most will be highly motivated to assist their children’s language
development. Once appropriate therapeutic skills had been acquired by the parents, through training or coaching, they would then able to use these in other situations and at other times, and continue to do this, to a greater extent because of limitations on professional time and financial resources. The language learning experiences for the children might also be more naturalistic and meaningful. Naturalistic in the sense that the conversations would be more likely to occur in an uncontrived manner, and meaningful in that conversational topics would be more likely to reflect events important to the children. These are important reasons to involve parents in programmes targeting language delay in children.

Whether such an apparent advantage occurs depends almost entirely on the extent to which the newly trained behaviours generalise to non-training contexts and continue to be used in those contexts. These aspects of the generality of trained behaviours are referred to respectively as setting generality and temporal generality (Stokes & Baer, 1977; Forehand & Atkeson, 1977) or as generalisation and maintenance (Stokes & Osnes, 1989). Perhaps with the addition of generalisation of skills trained in one parent to the other parent, these would seem to represent the most important aspects of the generality of behaviour in the context of attempts to address developmental concerns relating to one particular child in a family. For that reason, setting and temporal generalisation are focused on here.

Temporal generalisation and maintenance are very similar concepts, and both relate to stimulus generalisation. However, a distinction between them can be made. When stimuli that are similar to those
present when a behaviour was acquired function to cause the behaviour to occur, then stimulus generalisation is operating. Cooper, Heron and Heward (1986) indicate that a distinction between temporal generalisation and maintenance lies in the setting in which the measure is made. A measure of temporal generalisation shows the extent to which a new behaviour continues to occur, after cessation of training, in the setting in which acquisition took place. A measure of maintenance shows the extent to which a generalised new behaviour continues to occur in settings other than those in which it was acquired.

Sanders and James (1983) summarised attempts to refine the concepts of generalisation and maintenance. A useful distinction was made between 'time-generalisation', in which there is durability of trained behaviours without any post-training contingencies, and maintenance, where specific post-training contingencies are arranged to support the maintenance of generalised behaviours. A single concept, 'setting-time generalisation' is suggested which covers changes in targeted behaviours in non-training settings that continue to occur when training is withdrawn.

**Facilitating and Measuring Generalisation**

The extent to which parent-training programmes have been successful in achieving generalisation of behaviour changes has been the subject of a number of reviews. In an early review Miller and Sloane (1976) concluded that where the only condition operating to aid generalisation from the training settings was the physical similarity of the
settings, this one strategy was insufficient to ensure adequate
generalisation. Stokes and Baer in 1977 were able to provide a summary of
the technologies that could be applied to bring about this transfer, or
increase in the generality, of new behaviours.

Koegel, Glahn and Nieminen (1978), while indicating that
numerous training techniques have been demonstrated as effective in
training professionals and para professionals, were interested in the
extent to which different approaches to training influenced maintenance
and generalisation. Two types of approaches to training were identified.
Firstly, training with the trainer present in specific procedures to change
particular child target behaviours and secondly, teaching a general set of
skills which might be effective with a variety of child behaviours. In the
Koegel et al. study these were mainly discrimination tasks. Results for the
first approach, training specific procedures, showed that parents were
quickly able to copy and implement particular skills when these were
demonstrated by a trainer and they had an immediate effect in bringing
about change in child behaviour. When given a new target child
behaviour to work on however, parents showed no generalisation of
skills learned in the previous context. The second approach involved
therapists (some of whom were parents) viewing examples of behaviour
change procedures being used and then monitoring levels of therapist use
of these in changing child behaviours. Two videotapes of examples were
used; one showing use of antecedent stimuli (prompts) and another
showing use of consequences (reinforcers and punishers). Training in
both approaches was required before significant change in child behaviour
was evident and the therapists were able to transfer the training to new
target behaviours for the children.

Although this experiment was about generalisation across
behaviours, it is of interest here for several reasons. The experiment did
illustrate the need to programme in order for generalisation to occur and
maintain. It also demonstrated the use of a strategy that was effective in
facilitating generality of behaviour change - the provision of multiple
exemplars, a strategy identified by Stokes and Baer (1977) and further
described by Stokes and Osnes (1989). Although evaluation of the effects
of the use of videotaped material in training was not the main purpose of
their study, Koegal et al. (1978) report anecdotally that parents trained
using the first method, with a parent trainer present, were more confident
in their implementation than were those trained via videotape.

Sanders and James (1983) noted in their review an increasing trend
towards the collection of data on the behaviour of parents as well as
children where earlier studies had predominantly focused on children's
behaviour. The provision of parental data permits judgements about the
extent to which the children are experiencing the contingencies of interest
and it provides a direct demonstration of generalisation. Commonly
reported procedures to facilitate generalisation were similar to those at the
time of Forehand and Atkeson's (1977) review and included the use of
parent homework assignments and simulated home environments in
clinics.

Rogers Wiese (1992) reviewed parent training research and suggested
that follow-up measures in naturally occurring situations are vitally
needed to provide the most direct assessment of the generality of intervention effects. While there have been claims regarding the value of parent involvement, in terms of cost-effectiveness and better maintenance of the benefits resulting from interventions, reviewers caution about the inadequacy of informal measures, such as parent reports, as a strong enough basis for such claims.

Recent reviews of parent training literature (McPherson, Skok & McLaughlin, 1990; White, Taylor & Moss, 1992) concluded that the areas of maintenance and generalisation of newly acquired behaviours have still not been adequately addressed. These reviewers concluded that many of the claims made regarding beneficial effects of parent involvement could not be substantiated on the basis of available data. White et al. (1992) suggested that decisions to increase the direct participation by parents in treatment programmes for children with developmental delays of various kinds were largely the result of influences of "politics, persuasion and personal preference" (p. 120). White et al. concluded that the only area in which there was some evidence that parent involvement may have some additional benefits was that in which interventions targeted speech-impaired children.

**Setting Generalisation of Child Language Behaviours**

A few studies have assessed the generalisation of the effects of particular changes in adult language behaviours towards children. Generalisation from training to non-training settings has been demonstrated for elaboration of vocabulary and sentence structure (Hart
& Risley, 1980) and for child initiated language (Dolley, Wheldall & Glynn, 1989). Warren, Yoder, Gazdag, Kim and Jones (1993) observed generalisation of imitation, requesting and turn taking in children aged between two and three years who were described as having mild to moderate intellectual disability. Training involved the use of enhanced milieu procedures in which the training environment was arranged so that the children would be stimulated to initiate interactions with the adults present in the course of play activities. Generalisation to their usual classroom settings was observed, and to the children’s regular teachers. The report of this study gives no details of strategies designed to facilitate this generalisation.

Whitehurst, Falco, Lonigan, Fischel, DeBrayshe, Valdez-Menchaca and Caulfield (1988) assessed the effect of parents generalised use of picture book reading strategies following a one-month home-based training programme. Experimental group parents were trained, in a research clinic, to use open-ended questions and expansions in their discussions with their children about picture books. They were given a written handout describing the techniques. A control group of parents read to their children in their customary manner. All parents were required to audiotape sessions at home. The parents were telephoned each week to remind them to carry out the audio-taping and they were asked to keep a record of how frequently they read to their children.

Analysis of the tapes showed that the trained parents generalised use of the trained strategies to their homes. The children of the experimental group parents showed superior performance, relative to the control
group, on measures of mean length of utterance and standardised tests of expressive language at the end of training. An advantage for the experimental group children was still evident, though slightly diminished, after a nine month Follow-up period. Clearly evident in this study are features of the intervention intended to facilitate generalisation of skills from the training setting to home settings. It is likely that the written handout, telephone prompts and record keeping requirement would all have influenced generalisation. It needs to be noted that, while some level of maintenance of the trained skills seems to have occurred for the experimental group parents, there is no discussion in the report of this study of factors that might have influenced maintenance.

**Generalisation in Parent Training**

The test of the value of a programme is the extent to which it brings about improvement in child behaviour. Most of the literature on parent training and child intervention has focused on dealing with children's troublesome social behaviours, rather than language skills (Forehand et al., 1979; Gordon & Davidson, 1981; Graziano & Diament, 1992; Horton, 1982; Moreland, Schwebel, Beck & Wells, 1982; O'Dell, 1985; Serketich & Dumas, 1996). However, the principles that have emerged are likely to have some relevance to all areas of development. Findings of studies discussed in these reviews have generally shown that the training of parents is successful when it focuses on specific child problems, rather than on providing general knowledge.
The importance of the transfer of skills learned in one particular set of circumstances to others, so that the skills can have greater functionality, has long been recognised. Despite early recognition of the significance of the issue and increasing clarity in the methods by which it can be achieved (Stokes & Baer, 1977), generalisation is considered to have remained a rather neglected area in research on parent training (Stokes & Osnes, 1989).

An early comprehensive review of the generality of treatment effects, specifically in parent training literature, was carried out by Forehand and Atkeson (1977). They grouped generality into four types: temporal, setting, behavioural and sibling. These had been investigated with varying levels of intensity. In studies reviewed, Forehand and Atkeson found no consistent pattern of interval in assessments of temporal generalisation with intervals ranging from five days to three years and from one to three measures provided. The most common procedures reported for implementing setting generalisation involved use of self-reporting by parents of their behaviour or child behaviour at home, and attempts to simulate features of the home environment in clinic settings. The assessment of generalisation of trained skills to other child behaviours, behavioural generality, had been difficult because designs have frequently aimed to minimise this in order to allow assessment of a particular treatment effect on a particular behaviour.

Generalisation of training to the siblings of a target child was often reported to have occurred but not to significant levels, whether assessed through extent of parent implementation of skills or through change in
target behaviours across siblings. The main recommendation made by Forehand and Atkeson (1977) was that studies should make use of multiple assessment procedures to determine the extent of generalisation and maintenance. Measuring the impact on children of changes in their parents would be consistent with this recommendation. Forehand and Atkeson (1977) identified features of programmes that were likely to have an influence on the setting generality of trained behaviours. These were the extent to which the importance of generalisation was discussed directly with parents, the use of parental homework assignments and the use of a simulated home environment in the clinic for parent training.

In studies reviewed by Forehand and Atkeson (1977), temporal generality had been addressed through incorporating fading of treatment. Examples of fading strategies are refresher courses or booster sessions in which less intensive or less frequent intervention follows a more substantial training programme. However, they noted that programmes that produced change in parent and child behaviour during therapy did not necessarily produce durable change. This observation has been repeated in subsequent reviews (Graziano & Diament, 1992; Serketich & Dumas, 1996).

Forehand and Atkeson's (1977) review concluded that there had been insufficient attention to the measurement of generalisation of skills trained in parents to non-training settings. At the time of their review, Forehand and Atkeson were not too surprised by their findings as research efforts had been directed towards developing effective treatment procedures. However, this meant that it was impossible to attribute to any
aspect of a parent-training programme, changes that might have occurred in children's behaviour.

In a later analysis of setting generality, Sanders and Dadds (1982) concluded that the use of multiple strategies in training to facilitate generalisation to non-training situations will produce stronger generalised effects. However, more recently Graziano and Diament (1992) found that, in the parent training literature, little emphasis had been given to encouraging parents to maintain the skills acquired once training had finished.

In a meta-analysis of studies that included control groups, Serketich and Dumas (1996) confirmed the short-term effectiveness of behavioural parent training in modifying child behaviour and improving parental adjustment. However, it was still evident that research had not adequately examined the maintenance over time of positive changes. Serketich and Dumas suggest that measures of maintenance are the real measures of the social validity of programmes.

A New Zealand Parent Education Intervention

In 1992 the New Zealand Ministry of Education introduced the Parents and First Teachers programme. This is probably the most significant parent education intervention undertaken in this country using education resourcing. The programme was modelled on the Missouri State programme, New Parents as Teachers (White, 1990; Winter, 1985).
The programme’s underlying philosophy is that an adequate knowledge of child development principles and sound level of parenting skills are instrumental in helping parents to enhance the general development of their children, including the development of language skills, of interest in the current study. The programme is available to first time parent from the time of the child’s birth to three years of age. In New Zealand the programme has operated in selected geographical districts and participants have been volunteers. Premises on which the programme is based are that parents are the first and most important teachers of their children, the home is the child’s first learning context, children learn more during these early years than at any other time, parents want to have knowledge about their children’s development and parents want to parent effectively.

The programme has two key components. These are personal visits and group meetings. The personal visits occur approximately monthly and are undertaken by trained Parent Educators. These may be to homes or to a centre depending on parent preference. During these visits parents are given information to help them understand their child’s development and guidance on how to enhance language, cognitive, social and motor development mainly through play interactions. Periodically, monitoring and recording of the child’s overall development is carried out during the visits. If concerns arise families are linked with special services. Health related issues are also raised and referral links made if necessary. Monthly group meetings are also offered to parents. These are intended to provide opportunities for parents to share achievements and
common concerns and to discuss topics of interest to their child’s stage of development.

The appeal of the programme to the Ministry of Education in New Zealand was based on positive, independently conducted evaluations of the immediate and longer term effectiveness of pilot programmes in the state of Missouri, United States of America. The immediate benefits reported were increased knowledge of child development and parenting practices in participating parents, better cognitive, language and social development by their children compared to a control group, lower undetected incidence of handicapping conditions especially hearing problems, positive feelings about the programme by the parents and positive attitudes towards their school district (Pfannenstiel & Seltzer, 1985). Further evaluation was carried out when the children had completed the first grade at school (Pfannenstiel, Lambson & Yarnell, 1991). The children who had been involved in the New Parents as Teachers programme scored higher than a comparison group on measures of reading and mathematics and the parents were twice as likely to be involved in their children’s school experiences.

An evaluation of data obtained through the pilot implementation of the Parents as First Teachers programme in particular areas of New Zealand (Livingstone, 1998) concluded that there was very little in the way of positive, measurable results that could be unequivocally attributed to the programme. Parents reported favourably about the programme overall and they reported that the home visits made them feel more comfortable about being a parent. No differences were found between
parents who participated in the programme and a comparison group in
levels of knowledge about health, development or child rearing, in
attitudes towards parenting, in parent-child interaction, the home
environment, or levels of family stress. In terms of outcomes for
children, there were no significant differences found between programme
and comparison groups in cognitive, language, social or motor
development, in attainment of developmental milestones, incidence of
behaviour problems, contacts with health, education or welfare services,
days in hospital, injuries requiring medical treatment, immunisation
rates, experiences and activities reported.

The group data reported on here will hide individual instances in
which benefits may have been gained from involvement in the Parents as
First Teachers programme. The general findings may also be influenced
by the fact that the programme was not targeted at families with greater
potential for change. Although there was a requirement that participants
be first time parents, it seems likely that a programme that does not have
particular criteria for participation that refer to areas of need, may tend to
attract subjects with higher levels of awareness of the significant issues
involved. This factor may have been influential in the minimal benefits
reported for the Parents as First Teachers programme. Further, while
periodic monitoring of the children’s development took place, there does
not appear to have been any systematic assistance with, or assessment of,
the application and generalisation by parents of the information provided
by Parent Educators during home visits or group meetings.
The Role of Parents in Language Intervention

"The home is the primary language learning environment of the normal learner" (McCormack & Goldman, 1984, p. 213).

Recognition of the role of parents as the earliest teachers of their children has been given considerable emphasis in recent years (Ehlers & Ruffin, 1990; Farquhar, 1990; Hannon & Weinberger, 1990; White, 1987). Children who develop oral language skills at rates considered normal, do so largely as a result of the language learning experiences provided by their parents. Much has been learned about this normal language learning experience from observation of parent interaction with their children and this has provided therapists with useful guidelines for planning interventions where development is not following normal expectations. Somewhat less attention had been given to assisting parents to use these skills in everyday circumstances with their children and to keep on using them in these circumstances over an extended period of time (Forehand & Atkeson, 1977; Janko & Bricker, 1987; Koegel, Glahn & Nieminen, 1978; Miller & Sloane, 1976; Mitchell, 1987; O'Dell, 1985; Sanders & James, 1983; Warren & Kaiser, 1986).

Kaiser, Hancock and Hester (1998) summarised the findings of studies that had implemented naturalistic language interventions. The research had addressed questions related to: parents acquisition of new language learning procedures, the use of these with their children, the generalisation of use of the procedures to their homes and over time, and the effects on the children's language performance on child language
measures. Kaiser, Hancock and Hester concluded that parents can learn intervention strategies and implement these with their children and this can occur regardless of educational or social/economic level of the parents. The reviewers noted that in studies reported there was variability in parents' generalised use of newly trained skills in home settings. This appeared to be influenced by the parents' performance during training, the extent to which changes in children's behaviour occurred during training and the parents' perceived support.

Kaiser, Hancock and Hester (1998) further observed that, when children who had been taught by therapists were compared to children who had been taught by their parents, all showed similar performance on measures of language at the end of training. However, after six months the children whose parents had been trained were performing better than those children who had received only therapist intervention. This interesting finding suggests that parents may continue to use trained strategies after training has ended and the children continue to benefit. Questions still remain about factors that influence variability in this.

In order to determine the extent to which parents have been involved in such interventions, and the effects of these, a review was undertaken of studies in which parents were the therapists with their own children in interventions that targeted the language development of preschool aged children with delayed language skills. This review is described in the following chapter.
CHAPTER THREE
REVIEW OF PARENT TRAINING PROGRAMMES TARGETTING
CHILDREN'S LANGUAGE

*Method*

Searches were made of journal articles, listed in both PsycLit and
ERIC data bases, that fitted combinations of the following descriptor
terms: Preschool Age Children, Early Childhood, Kindergarten, Language
Development, Language Delay, Language Acquisition, Language Disorder,
Developmental Delay, Speech Development, Speech Therapy, Early
Literacy, Oral Language, Parent Training, Parents as Teachers, Parent
Education, Early Intervention, Parent Child Interaction, Generalisation,
and Maintenance.

A copy was obtained of articles which appeared relevant based on the
title and abstract. A manual search of the reference lists within these
articles was also carried out. Studies that met the following criteria were
included in the main analysis:

1. The subjects were children of preschool age and at least one of their
   parents.

2. The children's language development was measurably delayed.

3. The intervention involved some level of parent training.

4. The skills trained to the parents were aimed at developing the
   children's oral language skills.

5. The parents implemented the trained skills directly with their
   children.
6 Data were included on either parent or child behaviour, or both of these, as empirical evidence of experimental effect.

Children in some of the studies reviewed had disabling conditions or developmental delays in addition to delayed language. Consideration was given to excluding these studies from the review because of uncertainty about extraneous effects, on parent skill and child language, of interventions targeting other needs of these children. Applying such a criterion would have had an extremely limiting effect on the number of studies in the review. It was believed that more useful information would come from a slightly wider range of studies. It does seem, however, that there have been very few empirical studies involving parents whose children show only delayed language skills and no other difficulties. Fifteen articles that met the criteria set out above were identified from the searches undertaken. These fifteen articles are discussed in this chapter.

Studies were summarised under the following headings: Author, Subjects, Design, Dependent Variables, Training Setting, Length of Training, Training Procedures, Training Content, Effects (Training, Generalisation and Maintenance). The most obvious omissions of information from studies were in the areas of generalisation and maintenance as not all studies included these measures. Effects were summarised in three ways. Firstly, for studies in which improvement in parent skills occurred immediately following the onset of training, the effect of training was summarised as a ratio of the training phase level over the baseline level. In these cases a ratio of x1.00 indicates no change
in the parent skill targeted for training. Secondly, where improvements in parent skill occurred gradually through the training phase, net effects were calculated using the procedure outlined by Liberty (1986). This involves the ratio of the split middle trend of actual performance at the end of the training phase over the split middle trend of predicted performance if baseline levels had continued without intervention to the end of the training phase. In these cases a net effect of x1.00 also indicates no change. Thirdly, for the studies in which only mean pre- and post-test raw scores or percentages were given, the differences between the two means were used to summarise effects. In these cases 0.00 indicates no change.

Subjects

A total of 186 children and one or both of their parents were involved in the interventions in the studies reported in these articles. As can be seen from Table 1, numbers of subjects in the studies ranged from 2 to 60. In five of the studies reviewed (Alpert & Kaiser, 1992; Eiserman, Weber & McCoun, 1992; Hornby & Jensen-Proctor, 1984; Kaiser, Hemmner et al. 1996; Slater, 1986) the child subjects had language delays but no other delays or disabilities. The children in the remaining ten studies all had difficulties in addition to their language delays. The additional conditions included autism, Down syndrome, mental handicap and general developmental delay. As far as can be ascertained, the subjects in four of the studies (Alpert & Kaiser, 1992; Kaiser,
Table 1

*Characteristics of Subjects in Studies Reviewed*

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<tr>
<th>Authors</th>
<th>Subjects</th>
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(Data for 3 mothers only reported)             |
(Control groups of 6 non-handicapped children matched approximately for age, and 3 siblings.) |
| Slater (1986).                               | 60 disadvantaged children and their mothers (20 treatment group one, 20 treatment group two, 20 control group). |
Hemmeter et al., 1995; McConkey & O'Connor, 1982; Seifer, Clarke & Sameroff, 1991) were participating in ongoing early intervention programmes and were selected as a subgroup for participation in a specific study. In at least five of the studies the subjects were volunteers who responded to advertisements and in two studies the subjects were referred for intervention by education or health professionals. In one study children with disabilities were identified from hospital outpatient records. For the remaining four studies, the specific details of subject selection are not clear.

Design

As can be seen from Table 2, five of the experiments used multiple baseline designs, four involved group comparisons, three used pre- to post comparisons, two used ABC designs and one used an AB design.

Dependent Variables and Recording Procedures

As shown in Table 2, in the twelve studies in which data on parent behaviours were collected (Alpert & Kaiser, 1992; Anderson et al., 1987; Dodd, McCormack & Woodyatt, 1994; Hemmeter & Kaiser, 1994; Hornby & Jensen-Procter, 1984; Kaiser, Hemmeter et al., 1995; Kaiser et al., 1996; Kaiser, Hester et al., 1995; McConkey & O'Connor, 1982; Seifer, Clarke & Samaroff, 1991; Slater, 1986; Wolchik et al., 1986) frequency counts were used to measure the various skills targeted for training either during or at the end of training. In the three other studies reviewed (Eiserman, Weber & McCoun, 1992; Laski, Charlop & Schriebman, 1988; Price & Bochner,
### Table 2

*Designs and Measures in Studies Reviewed*

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<tr>
<th>Author</th>
<th>Design</th>
<th>Measures</th>
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| Alpert & Kaiser (1992)     | Multiple baseline | **Parent:** Frequency of use of:  
1. Modelling child language targets,  
2. Mand-model procedure,  
3. Time delayed prompting,  
4. Incidental Teaching.  
**Child:**  
1. Mean length of utterance,  
2. Total words,  
3. Novel words,  
4. Frequency of requests. |
| Anderson, Avery, Di Pietro, Edwards & Christian (1987). | Pre to post comparison | **Parent:** 5-minute pre and post video samples of parent/child interaction rated for correct use of:  
1. Instructions,  
2. Prompts,  
3. Consequences.  
**Child:** Pre to post change in:  
1. Language Age (months),  
2. Communication scores (percentage correct). |
| Dodd, McCormack & Woodyatt, (1994). | Pre/Post | **Parent:** Frequency of:  
1. Facilitation behaviours (ratings),  
2. Responsive Behaviours (ratings),  
3. Interaction behaviours (ratings).  
**Child:**  
1. Phonological consistency in repeats of same words.  
2. Total phonological errors (for children using multiword utterances at pre-assessment).  
3. Number of utterances (for children using single or no words at pre-assessment). |
| Eiserman, Weber & McCoun (1992). | Group comparison | **Child:** A range of phonological, grammatical and social data were obtained but not reported in this review.  
1. Receptive communication,  
2. Expressive communication. |
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<th>Author</th>
<th>Design</th>
<th>Measures</th>
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<tr>
<td>Hemmeter &amp; Kaiser (1994).</td>
<td>Multiple baseline</td>
<td><strong>Parent:</strong> Frequency of use of:</td>
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<td>1. environmental arrangement,</td>
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<td>2. feedback to child,</td>
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<td>3. model child language targets,</td>
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<td>4. use of incidental teaching,</td>
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<td><strong>Child:</strong> Frequency of:</td>
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<td>1. use of child specific language targets,</td>
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<td>2. use of spontaneous communicative utterances,</td>
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<td>Pre to Post change:</td>
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<td>3. Receptive language,</td>
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<td>4. Expressive language,</td>
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<td>5. Mean length of utterance,</td>
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<td>6. Number words used in 30-minute language sample.</td>
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<td>Hornby &amp; Jensen-Procter (1984).</td>
<td>AB</td>
<td><strong>Parent:</strong> Rate per minute of:</td>
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<td>1. questions,</td>
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<td>5. punishment,</td>
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<td><strong>Child:</strong></td>
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<td>1. One word utterances,</td>
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<td>2. Two word utterances,</td>
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<td>3. Three word utterances,</td>
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<td>Kaiser, Hemmeter,</td>
<td>Multiple baseline.</td>
<td><strong>Parent:</strong> Frequency of use of:</td>
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<tr>
<td>Ostrosky, Alpert &amp;</td>
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<td>1. Environmental arrangement,</td>
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<td>Hancock (1995).</td>
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<td>2. Milieu teaching (using mand-model, time delay,</td>
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<tr>
<td></td>
<td></td>
<td>incidental teaching)</td>
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<td></td>
<td></td>
<td>1. Modelling child language targets.</td>
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<td></td>
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<td><strong>Child:</strong></td>
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<td></td>
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<td>1. Frequency of prompted use of targets.</td>
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<td>2. Frequency of spontaneous use of targets.</td>
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<td>3. Frequency of responsiveness to parent teaching.</td>
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<td>Kaiser, Hemmeter,</td>
<td>Multiple baseline.</td>
<td><strong>Parent:</strong> Frequency of:</td>
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<td>Ostrosky, Fischer,</td>
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<td>1. Semantic feedback to child,</td>
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<td>Yoder &amp; Keefer (1996).</td>
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<td>2. Modelling of child language targets,</td>
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<td>3. Not following child’s lead (Reduced measure desirable).</td>
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<td><strong>Child:</strong> Frequency of:</td>
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<td>1. Spontaneous use of language targets,</td>
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<td>2. Child initiated utterances,</td>
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<td>3. Expressive language,</td>
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<td></td>
<td>4. Receptive language (missing data for E3),</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. MLU.</td>
</tr>
<tr>
<td>Author</td>
<td>Design</td>
<td>Measures</td>
</tr>
<tr>
<td>-------------------------</td>
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</tr>
<tr>
<td>McConkey &amp; O'Connor</td>
<td>Pre to post comparison</td>
<td><strong>Parent</strong>: Pre, post and follow-up 10-minute audiotaped interactions during play at home (3 tapes per family) were coded.</td>
</tr>
<tr>
<td>(1982).</td>
<td>with follow-up</td>
<td>1. Number of declarative statements,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. Number of utterances of 3 words or less,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3. Number of responses to child speech or actions.</td>
</tr>
<tr>
<td>Price &amp; Bochner</td>
<td>ABC</td>
<td><strong>Parent</strong>: No data obtained on parent behaviour.</td>
</tr>
<tr>
<td>(1984).</td>
<td></td>
<td><strong>Child</strong>:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1. Receptive language.</td>
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<tr>
<td></td>
<td></td>
<td>2. Expressive language.</td>
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<tr>
<td></td>
<td></td>
<td>3. Environmental Prelanguage Battery</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4. Environmental Language Inventory.</td>
</tr>
<tr>
<td>Seifer, Clark &amp;</td>
<td>Group comparison</td>
<td>**Pre- and Post-frequency measures of: **</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. Force (-),</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3. Responsive (+),</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4. Stimulate (+).</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Child</strong>: 1. Disengaged (-),</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. Fussy (-),</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3. Responsive (+),</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4. Spontaneous(+)</td>
</tr>
<tr>
<td>Slater (1986).</td>
<td>ABC</td>
<td><strong>Parent</strong>: Frequency of higher level concept-oriented utterances.</td>
</tr>
<tr>
<td></td>
<td>Group comparison</td>
<td><strong>Child</strong>: Frequency of higher level concept-oriented utterances.</td>
</tr>
<tr>
<td>Wolchik, Harris, Milch</td>
<td>Group comparison</td>
<td><strong>Parent</strong>: Rating of level of occurrence of teaching skills.</td>
</tr>
<tr>
<td>&amp; Thorwirth (1986).</td>
<td>A. First treatment group</td>
<td><strong>Child</strong>: Rating of level of occurrence of language skills.</td>
</tr>
<tr>
<td></td>
<td>B. Wait-list control</td>
<td>20 st hierarchy of speech skills (e.g. eye contact, imitating vowel words, functional speech nouns, social questions, counting</td>
</tr>
</tbody>
</table>

In all fifteen studies, data on children's language skills were gathered at the beginning of
the programme and then either ongoing through the training phase or at the end of training. A variety of measures of language development were used: mean length of utterance, total words, novel words, frequency of requests, phonological accuracy, speech intelligibility, frequency of spontaneous communication, frequency of use of specific language targets, number of one, two and three word utterances, frequency of disengagement, fussiness, use of phrases, imitation of vowels, nouns, social questions, eye contact and enjoyment of interaction. Six studies reported child scores on specific language assessment instruments including the Sequenced Inventory of Communication Development (Hedrick, Prather & Tobin, 1975), and the Environmental Pre-Language Battery and Environmental Language Inventory (Horstmeier & McDonald, 1978).

Reliability

Measures of inter-observer agreement were provided for parent and child data in eleven of the fifteen studies reviewed. Generally the mean levels of agreement were above 80 percent for most measures. However, ranges were from 0 (Laski, Charlop & Schreibman, 1988; Wolchik et al., 1986) to 100 percent (Alpert & Kaiser, 1992; Anderson et al., 1987; Hemmeter & Kaiser, 1994; Kaiser, Hemmeter et al., 1995; Kaiser, Hester et al., 1995; Laski, Charlop & Shriebsman, 1988; Wolchik et al., 1986).

Training Interventions

Training setting. As shown in Table 3, two of the studies in this review provided only home-based training (Anderson et al., 1987; Hornby &
### Table 3

**Training Settings, Intensity, Procedures and Programme Content in Studies Reviewed**

<table>
<thead>
<tr>
<th>Authors</th>
<th>Settings &amp; Intensity</th>
<th>Procedures</th>
<th>Content</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alpert &amp; Kaiser (1992).</td>
<td><strong>Training:</strong> Clinic and home, Individual. <strong>Measurement:</strong> Clinic.</td>
<td>Lecture, video examples, modelling by trainer, practice with feedback. Home visits of 15 minutes per week by trainer to give feedback until criterion reached.</td>
<td>Milieu language training techniques</td>
</tr>
<tr>
<td></td>
<td>4 weekly 30-60 minute sessions.</td>
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<tr>
<td>Anderson, Avery, Di Pietro, Edwards &amp; Christian (1987).</td>
<td><strong>Home, Individual.</strong> <strong>Parent:</strong> 10 hours per week over either 1 or 2 (6 subjects) years. <strong>Child:</strong> 15-25 hours per week of instruction with parents and/or therapist over 1 year.</td>
<td>Modelling, practice with feedback, Training Manual, parent-child games.</td>
<td>Behavioural teaching techniques (concise instructions, prompting, consequences) through training manuals, modelling, feedback.</td>
</tr>
<tr>
<td>Dodd, McCormack &amp; Woodyatt, (1994).</td>
<td><strong>Clinic, Group.</strong> Twelve 1 per week 3-hour sessions.</td>
<td>Specific topic re phonology taught each week using explanation, video.</td>
<td>Trained to; identify phonologic errors, respond to child’s speech attempts through giving feedback and reinforcement, interact to elicit acceptable production.</td>
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<tr>
<td></td>
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<tr>
<td></td>
<td><strong>Clinic:</strong> Weekly 1-hour sessions over 2 years.</td>
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<td></td>
</tr>
<tr>
<td>Author</td>
<td>Setting &amp; Intensity</td>
<td>Procedures</td>
<td>Content</td>
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<tr>
<td></td>
<td>Twice weekly 45 minute sessions over approx 10 weeks.</td>
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</tr>
<tr>
<td>Hornby &amp; Jensen-Procter (1984).</td>
<td>Home, Individual.</td>
<td>Modelling use of questions and comments with play material. Mother instructed to have one 10-minute session per day with each child.</td>
<td>Use of questions and comments with play material</td>
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<td>Two 1-hour training sessions.</td>
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<td></td>
<td><strong>Group:</strong> Eight 60-90 minute sessions. <strong>Individual:</strong> Two home sessions per week, (Range of total sessions 7 to 18 across families).</td>
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</tr>
<tr>
<td>Kaiser, Hester, Alpert &amp; Whiteman (1995).</td>
<td>Clinic, Individual.</td>
<td>15 minutes teaching new information, viewing own video, feedback from trainer, 15 minutes video new interaction, 15 minutes practice with prompting and coaching.</td>
<td>Engagement, following child lead, feedback, reinforcement, turn-taking, multiple exemplars, shared control.</td>
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<tr>
<td></td>
<td>20 twice weekly 45-minute training sessions.</td>
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<tr>
<td></td>
<td></td>
<td>Training protocol involved providing written and oral descriptions of techniques, modelling use, parent practice with feedback from trainer.</td>
<td>Milieu language training strategies</td>
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<tr>
<td></td>
<td>Eight twice weekly sessions of 30 to 60 minutes with parents.</td>
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</tr>
<tr>
<td>Author</td>
<td>Setting &amp; Intensity</td>
<td>Procedures</td>
<td>Content</td>
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</tr>
<tr>
<td>Laski, Charlop &amp; Schriebman</td>
<td>Clinic initially, Individual</td>
<td>Discussion of techniques, in vivo coaching then practice with feedback through observation mirror/intercom.</td>
<td>Reinforce verbal attempts, turntaking, multiple exemplars, shared control.</td>
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<tr>
<td></td>
<td>Between five and nine 15 minute sessions.</td>
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<tr>
<td></td>
<td>Seven sessions including five 30-minute vidotaped programmes.</td>
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<tr>
<td></td>
<td>10 weekly sessions.</td>
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<tr>
<td></td>
<td>Up to 6 weekly sessions.</td>
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</table>
Table 3 continued

<table>
<thead>
<tr>
<th>Author</th>
<th>Setting &amp; Intensity</th>
<th>Procedures</th>
<th>Content</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Seven sessions (durations not reported).</td>
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<tr>
<td></td>
<td>Clinic: Ten weekly 2-3 hour sessions.</td>
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<tr>
<td></td>
<td>Home: Five 1-hour sessions.</td>
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</tbody>
</table>

Jensen-Proctor, 1984). One of the studies (Eiserman et al., 1992) included a set of parents who were trained in a clinic and a set trained in their homes. Unfortunately no training phase data were obtained in this study to provide a direct comparison of effects.

In ten of the studies, training took place in a clinic setting. Two included a phase of training which involved therapists visiting the homes of subjects (Alpert & Kaiser, 1992; Kaiser, Hemmeter et al., 1995) but this was done only to facilitate generalisation of training and was not intended to contribute directly to skill acquisition by the parents. The
remaining eight studies that provided clinic-based training (Dodd et al., 1994; Hemmert & Kaiser, 1994; Kaiser et al., 1996; Kaiser, Hester et al., 1995; McConkey & O'Connor, 1982; Seifer et al., 1991; Slater, 1986; Wolchik et al., 1986) all produced substantial effects for the majority of parents but without a comparable set of studies involving home-based training, little can be said regarding the relative effect of different settings on the acquisition of skills by parents.

This particular issue represents a somewhat neglected area and further investigation into the influence of training setting is warranted.

*Training intensity.* The intensity of programmes is defined in terms of the number of hours of training provided. Details on this for each of the studies reviewed are shown in Table 3. Duration of training ranged from one hour to approximately 1000 hours.

*Training procedures.* Within Table 3 are details of the procedures used to conduct training. The most frequently occurring elements of the training procedures in the studies reviewed were; the use of introductory explanation or description to parents of the new skills - (used in nine studies), the modelling of these by trainers - (used in seven studies), practice or rehearsal of the skills by parents with their children while feedback or coaching was given by the trainer - (used in nine studies). Three further training elements used less frequently were videotaped examples of the skills - (used in four studies), videotapes of parents interaction with their children used for analysis and feedback - (used in
five studies), and written material in the form of handouts or a handbook - (used in four studies).

Seven studies used at least four of these elements in their training programmes. The range of effects achieved in these studies does not differ from that achieved in studies utilising fewer elements. Excluding the study that involved 1000 hours of training (Anderson et al., 1987) the mean training durations were almost the same for the set of studies that used four or more elements and the one that used fewer than four. The means were approximately 11 hours in each case.

The clearest conclusion that can be drawn from an examination of the training procedures is that a small range of training strategies are typically employed in parent training programmes and individual programmes select from that range. Positive outcomes from programmes are reported whatever combinations of these strategies are used.

Training content. Details of the training interventions are shown in Table 3. In four of the studies under review, parents were trained to use a set of strategies that could be employed in the general milieu of the child and family (Alpert & Kaiser, 1992; Hemmeter & Kaiser, 1994; Kaiser, Hemmeter et al., 1995; Kaiser, Hester et al., 1995). These "milieu teaching strategies" included environmental arrangement (eg. materials of interest within view and out of reach, sabotage strategies in which, for example, an object the child is likely to want is withheld by the parent to prompt a request), modelling, mand-model (in which a question is asked and the appropriate response modelled by an adult), time delay (where the adult
sustains a pause as a stimulus and opportunity for the child to respond) and incidental teaching. Two studies trained parents in use of basic behavioural teaching strategies such as prompting and reinforcement (Anderson et al., 1987; Wolchik et al., 1986). Four studies trained the use of interaction strategies including engagement, following the child’s lead, feedback, expansion, reinforcing verbal attempts, turntaking, giving multiple exemplars and shared control (Kaiser et al., 1996; McConkey & O'Connor, 1982; Siefer et al., 1991; Slater, 1986). In one study parents were trained in a somewhat more specific behaviour which was to identify phonologic errors and to correct these using feedback and reinforcement procedures (Dodd et al., 1994). In a further study parents received training in use of questions and comments in play situations (Hornby & Jensen-Proctor, 1984).

Effects of Training on Parent Behaviours.

A correlation appears to exist between the amount of time spent in training and effects on parents. Effects are summarised in Table 4. The number of subject dyads involved in the training programmes is shown within the author column in Table 4. An expanded table, showing effects for individual subjects for the studies in which these were reported, is shown in Appendix 1.

Hornby and Jensen-Proctor (1984) provided only about one hour of home-based training and achieved improvements of x6 and x9 on two of the three positive behaviours trained in the one parent involved in this
### Table 4

**Summarised Experimental Effects in Studies Reviewed**

<table>
<thead>
<tr>
<th>Authors</th>
<th>Measures</th>
<th>Training Effects</th>
<th>Setting</th>
<th>Maintenance</th>
<th>Generalisation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alpert &amp; Kaiser (1992). N = 3</td>
<td>Parents: Frequency of use of: 1. Modelling child language targets, 2. Mand-model procedure, 3. Time delayed prompting, 4. Incidental Teaching.</td>
<td>Parents: 1. x13.00 2. x3.00 3. x8.00 4. x4.30</td>
<td>Parents: 1. x12.00 2. x5.00 3. x6.80 4. x7.00</td>
<td>Parents: Immediate maintenance. 1. x6.30 2. x2.80 3. x9.30 4. x5.30 At six months. 1. x0.73 2. x1.26 3. x0.68 4. x0.23</td>
<td>Child 1. x2.10 2. x2.48 3. x2.63 4. x1.66</td>
</tr>
<tr>
<td>Authors</td>
<td>Measures</td>
<td>Training Effects</td>
<td>Setting Generalisation</td>
<td>Maintenance</td>
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</tbody>
</table>
| Dodd, McCormack & Woodyatt, (1994). | **Parent:** Frequency of:  
1. Facilitation behaviours (ratings),  
2. Responsive Behaviours (ratings),  
3. Interaction behaviours (ratings). | Pre to post change  
**Parent:**  
1. +2.25/10  
2. +2.75/8  
3. +4.28/13 | Not assessed | Not assessed |
| N = 9                   | Child:  
1. Phonological consistency in repeats of same words (missing data for E and F).  
2. Total phonological errors (for children using multiword utterances at pre-assessment).  
3. Number of utterances (for children using single or no words at pre assmt). | Child:  
1. +23%  
2. -22.5%  
3. +26.16 (168.5%) | | |
| Eiserman, Weber & McCoun (1992). | **Child:** A range of phonological, grammatical and social data were obtained but not reported in this review.  
1. Receptive communication,  
2. Expressive communication. | Child: Pre to post change in group mean developmental quotients.  
1. Home +11.1  
2. Clinic +10.6  
2. Home +8.0  
2. Clinic +6.9 | Not assessed | Not assessed |
<table>
<thead>
<tr>
<th>Authors</th>
<th>Measures</th>
<th>Training Effects</th>
<th>Setting Generalisation</th>
<th>Maintenance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hemmeter &amp; Kaiser (1994).</td>
<td>Parent: Frequency of use of: 1. environmental arrangement, 2. feedback to child, 3. model child language targets, 4. use of incidental teaching.</td>
<td>Parent: Ratio of treatment to baseline data. 1. x1.44 2. x1.96 3. x5.49 4. x6.25</td>
<td>Parent: Generalisation to home. Pre to post change. 1. x1.17 2. x1.96 3. x3.37 4. x2.00</td>
<td>Not assessed</td>
</tr>
<tr>
<td>N = 4</td>
<td>Child: Frequency of use of: 1. child specific language targets, 2. spontaneous communicative utterances, Pre to Post change: 3. Receptive language, 4. Expressive language, 5. MLU 6. Number words used in 30-min. language sample.</td>
<td>Child: Net effects. 1. x7.43 2. x1.80 3. x2.25 4. x1.19 5. x1.07 6. x3.47</td>
<td>Child: Pre to post change. 1. x5.86 2. x3.38 Generalisation not assessed for 3, 4, 5 &amp; 6</td>
<td></td>
</tr>
<tr>
<td>Hornby &amp; Jensen-Procter (1984).</td>
<td>Parent: Rate per minute of: 1. questions, 2. statements, 3. rewards, 4. demands, 5. punishment.</td>
<td>Parent: Ratio of level of treatment data relative to baseline. 3 measures taken in the 10 minutes following each training session. 1. x9 2. x6 3. 0 4. x1 5. x2</td>
<td>Parent: No data</td>
<td>Not assessed</td>
</tr>
<tr>
<td>N = 2</td>
<td>Child: 1. One word utterances. 2. Two word utterances. 3. Three word utterances.</td>
<td>Child: 1. x2.92 2. x3.75 3. x2.00</td>
<td>Child: Not assessed.</td>
<td></td>
</tr>
<tr>
<td>Authors</td>
<td>Measures</td>
<td>Training Effects</td>
<td>Setting Generalisation</td>
<td>Maintenance</td>
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<tr>
<td>Kaiser, Hemmeter, Ostrosky, Alpert &amp; Hancock (1995).</td>
<td><strong>Parent:</strong> Frequency of use of: 1. Environmental arrangement, 2. Milieu teaching (using mand-model, time delay, incidental teaching), 3. Modelling child language targets.</td>
<td><strong>Parent:</strong> Net effects for group/clinic training, 1. x 4.72, 2. x 3.10, 3. x 7.66</td>
<td><strong>Parent:</strong> Continued effects for individual, home training, 1. x 5.07, 2. x 5.40, 3. x 9.10</td>
<td>Not assessed</td>
</tr>
<tr>
<td>N = 5</td>
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<tr>
<td>Child:</td>
<td></td>
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<tr>
<td></td>
<td>1. Frequency of prompted use of targets.</td>
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<tr>
<td></td>
<td>2. Frequency of spontaneous use of targets.</td>
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<td></td>
</tr>
<tr>
<td></td>
<td>3. Frequency of responsiveness to parent teaching.</td>
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</tr>
<tr>
<td>Kaiser, Hemmeter, Ostrosky, Fischer, Yoder &amp; Keefer (1996).</td>
<td><strong>Parent:</strong> Frequency of: 1. Semantic feedback to child, 2. Modelling of child language targets, 3. Not following child's lead (Reduced measure desirable).</td>
<td><strong>Parent:</strong> Pre to post change, 1. x 2.61, 2. x 21.77, 3. x 0.20</td>
<td><strong>Parent:</strong> At 6-month follow-up, 1. x 1.25, 2. x 0.60, 3. x 1.33</td>
<td></td>
</tr>
<tr>
<td>N = 12</td>
<td></td>
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<tr>
<td>Child:</td>
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</tr>
<tr>
<td></td>
<td>1. Spontaneous use of language targets.</td>
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<tr>
<td></td>
<td>2. Child initiated utterances.</td>
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<tr>
<td></td>
<td>Pre to post change in: 3. Expressive language, 4. Receptive language (missing data for E3), 3. MLU.</td>
<td></td>
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</tr>
<tr>
<td>Kaiser, Hester, Alpert &amp; Whiteman (1995).</td>
<td><strong>Parent:</strong> Parent data collapsed into one measure of number of milieu strategies used.</td>
<td><strong>Parent:</strong> Net effect, x29.33</td>
<td><strong>Parent:</strong> Data not shown</td>
<td>Not assessed</td>
</tr>
<tr>
<td>N = 3</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Authors</td>
<td>Measures</td>
<td>Training Effects</td>
<td>Setting Generalisation</td>
<td>Maintenance</td>
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<tr>
<td>McConkey &amp; O'Connor (1982).</td>
<td>Parent: Pre, post and follow-up 10-minute audiotaped interactions during play at home (3 tapes per family) were coded. 1. Number of declarative statements, 2. Number of utterances of 3 words or less, 3. Number of responses to child speech or actions. Child:</td>
<td>Parent: Pre to post change. Mother and Father data given separately. 1. Mothers +14% Fathers +10% 2. Mothers +27% Fathers +13% 3. Mothers +18% Fathers +6%</td>
<td>Pre and post assessments based on data obtained in generalisation (home) settings.</td>
<td>Four-month follow up. Post test to follow-up change in median percentage. No data for fathers 1. Mothers-2% 2. Mothers No change 3. Mothers-8%</td>
</tr>
<tr>
<td>Price &amp; Bochner (1984).</td>
<td>Parent: No data obtained on parent behaviour. Child: 1. Receptive language. 2. Expressive language. 3. Environmental Pre-language Battery 4. Environmental Language Inventory. N = 11</td>
<td>Child: Pre to post change. Ratio of months of language gain to months passed. 1. x0.96 2. x0.84 3. x15.30 4. x18.90</td>
<td>Not assessed</td>
<td>Child: 12 month post-test to follow-up change. 1. x0.90 2. x0.74 3. x4.87 4. x22.37</td>
</tr>
<tr>
<td>Authors</td>
<td>Measures</td>
<td>Training Effects</td>
<td>Setting Generalisation</td>
<td>Maintenance</td>
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<tr>
<td>Seifer, Clark &amp; Sameroff</td>
<td>Pre- and Post-frequency measures of:</td>
<td>Ratios of pre to post residual change mean scores.</td>
<td>Not assessed</td>
<td>Not assessed</td>
</tr>
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<tr>
<td>Slater (1986).</td>
<td>Parent: Frequency of higher level concept-oriented utterances.</td>
<td>Ratio of group training data mean levels to baseline.</td>
<td>One month follow-up group mean ratio to training level.</td>
<td></td>
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<tr>
<td>N = 60</td>
<td></td>
<td>Parent:</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>Treat 1 x 1.67</td>
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<td></td>
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<td>Treat 2 x 4.33</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Control x 1.67</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Child: Frequency of higher level concept-oriented utterances.</td>
<td>Child:</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Treat 1 x 3.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Treat 2 x 7.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Control x 0.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wolchik, Harris, Milch &amp;</td>
<td>Parent: Rating of level of occurrence of teaching skills.</td>
<td>Parent: Group means reported.</td>
<td>Not assessed</td>
<td>3-month follow-up assessment data not reported.</td>
</tr>
<tr>
<td>Thorwarth (1986).</td>
<td></td>
<td>Group A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>N = 11</td>
<td></td>
<td>Pre 30.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Post 62.10</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Group B</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Pre 29.89</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Post 49.60</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Child: Rating of level of occurrence of language skills.20 step hierarchy of speech skills (eg. eye contact, imitating, vowels, words, functional speech nouns, social questions, counting).</td>
<td>Child: Data for groups not reported.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
study. There was no improvement on the third measure thus an effect was achieved on 66 percent of measures. This study, and the other that made use of home-based training (Anderson et al., 1987), differed so markedly in duration of training - 1 hour and 1000 hours, that to look for similarities in effects based on other factors might not be particularly meaningful.

Six studies involved between three and seven hours of training (Kaiser, Hester et al., 1995; Seifer et al., 1991; Hemmeter & Kaiser, 1994; Alpert & Kaiser, 1992; McConkey & O'Connor, 1982; Slater, 1986). Those studies that reported data for single subjects achieved effects between x3 and x33 or between 6 percent and 27 percent, for between 83 percent and 100 percent of parents. The two studies that employed group comparison designs (Eiserman et al., 1992; Seifer et al., 1991) achieved improvements of x4 for the treatment group in one case, and 12 percent and 16 percent on 2 out of 4 measures in the other case.

Two studies involved 8 to 15 hours of training (Kaiser, Hemmeter, Ostrosky, Alpert & Hancock, 1995; Kaiser, Hemmeter, Ostrosky, Fischer, Yoder & Keefer, 1996). In these studies approximately 90 percent of parents improved performance on all measures. Improvements ranged from x1.51 to x115.00.

Two studies involved 25 to 36 hours of training (Dodd, McCormack & Woodyatt, 1994; Wolchik, Harris, Milch & Thorwarth, 1986). Dodd et al. provided data for individual subjects and 95 percent of parents improved on all measures with improvements ranging from 12 percent to 60 percent. The two groups trained in the Wolchik et al. study showed
improvements of 50 percent and 60 percent. The proportion of parents achieving these improvements cannot be determined. One study provided about 1000 hours of training (Anderson et al., 1987). As data for individual parents is not reported, the percentage of parents improving cannot be determined. However, the groups in this study showed improvements ranging between averages of 30 percent and 70 percent per group.

From this analysis it seems that, while too short a training duration may reduce the impact of the training, extending the training of parents in language related behaviours much beyond about 15 hours may achieve little additional effect at least in the short term.

Summary of Training Effects

Each of the groupings of studies identified above shows a range of effects and there are similarities across the groups in the lower end of each range. However, as can be seen in Table 4, the studies in the set of four identified above as having provided training in a package of 'milieu teaching strategies' all show considerably larger upper limits of effects. Two of these studies (Alpert & Kaiser, 1992; Kaiser, Hemmeter et al., 1995) included a home-training component. One possible explanation for the relatively strong effects is that the type of content is easier for parents to acquire than other types. Alternatively, support in the application of the content in their everyday contexts at home may facilitate easier acquisition by parents.
These suggestions are speculative only. However, it is evident from the studies reviewed that parents do generally acquire the skills targeted in the content of training programmes.

*Effects of Changes in Parent Behaviour on Child Language*

Thirteen studies included measures of child language during the training phase. These are summarised in Table 4. An expanded table in Appendix 1 shows effects for individual children where these were reported. Four of the studies were group designs so the proportions of subjects improving in language cannot be determined (McConkey & O'Connor, 1982; Seifer et al., 1991; Slater, 1986; Wolchik et al., 1986). Nine studies showed individual subject data and in four of these (Dodd et al., 1994; Hemmeter & Kaiser, 1994; Hornby & Jensen-Proctor, 1984; Kaiser et al., 1996), more than 80 percent of children improved on the language measures during the training phase. In the remaining five studies which provided single subject data (Anderson et al., 1987, Eiserman et al., 1992; Kaiser, Hemmeter et al., 1995; Kaiser, Hester et al., 1995; Price & Bochner, 1984), fewer than 60 percent of children improved.

It is evident that when the training of parents is effective, then their children also show gains on language measures. The strongest effects for children were evident in one of the group design studies (Slater, 1986) where a treatment group improved by x7 relative to the control group. Strong effects for children were also evident in three of the four single subject studies in which the greatest proportion of children also improved (Hemmeter & Kaiser, 1994; Hornby & Jensen-Proctor, 1984; Kaiser et al.,
1996) suggesting that features of the interventions may have been particularly effective. In these studies children, on average, doubled their baseline rates of language use.

An attempt was made to identify common features of studies which showed the strongest gains for the children (Hemmeter & Kaiser, 1994; Hornby & Jensen-Proctor, 1984; Kaiser et al., 1996; Slater, 1986). The durations of parent training for the three single subject studies were respectively, 7.5 hours, 1 hour and 15 hours, and for Slater's (1986) group study which produced strong effects for children, 7 hours. This is generally supportive of the conclusion drawn earlier, regarding influences of training duration on effects for parents, that training in excess of 15 hours does not continue to show further benefits.

A significant common factor across these four studies that produced strong results for the children during the training phase was training setting. In three of the studies, training programmes were implemented in clinics. Only Hornby and Jensen-Proctor (1984) provided home training. This observation, that clinic training produced the strongest effects for children, is interesting as no similar such training setting effect was evident for parent skills. It also contrasts with Eiserman et al. (1992) who found consistent, though smaller, benefits on their two child language measures for children whose parents received training in their homes.

Studies reviewed have shown somewhat mixed results and the influence of setting is still unclear. No clear indication is evident that one type of training setting is necessarily more effective than another in
producing superior training effects for parents and subsequent benefits for children.

Effect of Setting on Generalisation

For the purpose of this review, generalisation is considered to have taken place when a behaviour that has been trained occurs at times other than when training is being undertaken or in places other than those in which training occurred. This is the definition which Sanders and James (1983) gave to the concept of ‘setting-time generalisation’. The generalisation measures shown in Table 4 are expressed in relation to levels or net effects in the training phase where training setting data are provided. In those studies that did not include training phase data (Alpert & Kaiser, 1992; Laski et al., 1988; Wolchik et al., 1986), generalisation effects are shown in relation to baseline data. Five of the 15 studies measured the generalisation of behaviours trained to parents from training to non-training settings and three of these also measured the generalisation of new child language behaviours from training to non-training settings.

Generalisation of Parent and Child Behaviours during Training

In two studies (Hemmeter & Kaiser, 1994; Laski et al., 1988) training effects were achieved with 75 percent of the parents. The sizes of these effects averaged approximately x2 and x5.8 respectively. Both of these studies provided data on generality of child language in non-training settings. In the Alpert and Kaiser (1992) study, 100 percent of children
showed generalised use in non-training settings of their improved language and increased their gains on language measures with the additional increases being x4 above training phase levels. Laski et al. (1988) achieved gains in non-training generalisation settings with 75 percent of children but the increases were stronger at x7 above training phase levels.

In three studies (Alpert & Kaiser, 1992; Kaiser, Hemmeter et al., 1995; Kaiser et al., 1996) parents’ newly acquired skills generalised to non-training settings in 90 percent or more cases. The effect sizes ranged from x5 to x18. Kaiser, Hemmeter et al. also showed generality of language gains to non-training settings with 80 percent of children in their study and increased gain in the generalisation settings averaged approximately x3 above training levels.

Training duration across these studies ranged from 2 hours to 15 hours but there was no relationship evident between effect sizes and duration. Each of these studies involved very similar training procedures. These included introductory lectures or explanation of skills, modelling and practice with feedback. Four studies also made use of video recordings during training with Laski et al. (1988) being the only study not making use of this element.

All five of these studies provided training in clinic situations. However, three (Alpert & Kaiser, 1992; Kaiser, Hemmeter et al., 1995, Laski et al., 1988) also provided a home visiting component intended to foster generality of training effects. Two of these studies (Alpert & Kaiser, 1992; Kaiser, Hemmeter et al., 1995) produced strong generalisation effects
for large proportions of parents, with 100 percent and 93 percent respectively showing generalisation from training to non-training settings. The positive influence of the home visiting component is the only factor that seems to provide some discrimination between these studies. Although this is a logical outcome, as home settings were the most usual source of data on generality of effects, it may represent a significant factor to take account of in planning training interventions with parents.

Assessment of Maintenance of Training Effects for Parents and Children Following Completion of Training

Four studies assessed maintenance. Data obtained are summarised in Table 4. Individual subject data, where these were reported are shown in Appendix 1. The follow up periods varied from one to five weeks (Laski et al., 1988), one month (Slater, 1986), four months (McConkey & O'Connor, 1982) and six months (Kaiser et al., 1996) following the end of training. Alpert and Kaiser (1992) assessed only parent maintenance (after six months) and Price and Bochner (1984) assessed only maintenance of gains in children's language skills (after twelve months).

All of the parents and children in the Laski et al. (1988) study showed further increases in performance at levels of x2 and x7 above training phase levels over the maintenance period. It needs to be noted that over this period, although the training package had been completed, parents continued to be visited in their homes and this factor will undoubtedly have contributed to the maintenance of trained skills.
Slater (1986) found, one month after the end of training, that the parent treatment group maintained skills at a level of x1.15 relative to the control group. However, the children, who had shown quite strong gains during the training phase, did not maintain their language gains. Four months after the end of training, McConkey and O'Connor (1982) found that parents had regressed to, on average, about 5 percent below training levels. The children however, maintained gains at about 5 percent above training phase levels.

Six months following training, Alpert and Kaiser (1992) found that only 33 percent of parents had maintained trained skills although some had increased performance at levels between x1.6 and x3. Similarly, Kaiser et al., (1996) found that 33 percent of parents maintained skills. However, 83 percent of the children showed maintenance of language gains. Some of the parents and children in this study, increased performance over the maintenance period at levels averaging about x1.5 and x1.9 respectively. Price and Bochner (1984), 12 months following training, found that about 60 percent of children maintained language gains and some continued to improve performance at levels averaging x1.16 above training phase measures.

**Summary of Maintenance Effects**

The study showing the strongest maintenance effects for parents (Laski et al., 1988) assessed this over a relatively short period. Those which assessed maintenance over four and six month periods tended to show reduced numbers of parents maintaining their use of trained skills but
child gains continued at quite strong levels. It may be significant that the
two studies which showed the strongest maintenance effects for children
over the longer maintenance periods of six and twelve months (Kaiser et
al., 1996; Price & Bochner, 1984), involved longer training periods than
other studies reporting maintenance data. Also significant is the
observation that increases in children’s language skills can maintain even
when the newly acquired parent language behaviours that contributed to
these increases do not.

The influence of the setting in which training took place was not
specifically discussed in the studies reviewed. This, along with the fact
that a small proportion of studies included maintenance data, is
supportive of the view that assessment of factors influencing the
maintenance of gains achieved in training has not received sufficient
attention by researchers.

Conclusions about Training Parents in Language Facilitation Skills

The training programmes used in the 15 studies in this review were
mostly effective in assisting parents to acquire language facilitation skills.
A small number of these studies assessed the generalisation of language
facilitation skills to non-training settings. The results of these studies
suggest that parents do transfer skills, especially to home settings. Features
of the training procedures may influence this transfer. One such feature
that deserves further investigation is home visiting by therapists.

A small number of these studies also measured the maintenance of
trained skills following training. The results of these studies indicate
some level of maintenance of language facilitation skills by parents. However, close examination of the data indicates some decline in the frequency of use of trained skills at follow-up. Follow-up measures were at intervals varying from one month to twelve months. There is no specific discussion in these studies of factors that might be having an effect on the extent to which maintenance occurs.

Outside of training situations, it is mainly home settings that have been of interest in previous studies. This is reasonable given that the studies were selected for review because they involved preschool children and their homes would certainly be the places in which parents with preschool children would spend most time together and thus have the most opportunity to implement newly acquired behaviours. The significance of the home as a training setting seems to have been largely ignored in studies of parent training in language related skills. One study (Eiserman et al., 1992) provided training to one set of parents in a clinic and another at home but only assessed child language in the training phase. No data was provided on the parents who were the direct agents of child change.

*Specific Issues Identified from the Literature*

The studies reviewed give a clear indication that training parents to intervene with their children is effective in changing parent behaviour and that benefits for the children then result. Effects are evident even when programmes vary in their content, their method of delivery and the setting in which parent training takes place.
In other research discussed, Wells (1981) highlighted the importance of children's experience with conversational language used in interaction with competent language users. This may be most appropriate for children with mild to moderate language delays, rather than specific functional statements that may be more appropriate in the case of children with more severe language delays. The use of decontextualised language and displaced reference (Snow, 1983; Sachs, 1983; Fey, 1986) are considered powerful language experiences for children in terms of their later impact on literacy. Motherese (Snow, 1972) and scaffolding (Smith, 1992) have been identified as features of parents' interaction style that are intended to provide modelling of conversational language and support child participation in conversations. In scaffolding conversations, parents use questions intended to prompt the sequence of information typically included in conversational narratives (Peterson, 1990), and they make their own contributions to narratives (Smith, 1992). Through the use of behaviours such as those summarised, parents can provide substantial amounts of language experience for children (Hart & Risley, 1995). Hart and Risley also discovered that all parents generally make use of high quality strategies in their interactions with their children. However, some do this to a greater extent than others.

The issue that seems to have received the least attention in the literature reviewed relates to the influence of the setting in which training occurs on the maintenance of trained behaviours by parents. This seems an important matter as the extent to which parents' of young
children continue using language interaction strategies is likely to directly influence the amount of language experienced by the children.

Similarly, questions about possibly associated changes in children’s language behaviour, particularly in the maintenance phase, also remain unanswered. These issues give rise to a number of questions which deserve investigation.

**Research Questions**

The present study aimed to illuminate the issues of maintenance of behaviours trained in parents and associated effects on children’s language development. It addressed the following research questions:

1. What are the relative effects, if any, of home-based and clinic-based training programmes on parents' use of trained conversational behaviours with their children in generalisation settings after training ceases?

2. What are the effects, if any, of the training setting on the duration of child talk and the number of words used by children in conversations between the parents and their children in generalisation settings?

3. What are the effects, if any, of the training setting on selected measures of the children's language development?
CHAPTER FOUR

METHOD

Subjects

Recruitment of Subjects

Recruitment procedures and formats were formulated in accordance with guidelines from the New Zealand Psychological Society Ethical Standards, the Department of Health Statement on Informed Consent, and the guidelines of the University of Canterbury Human Ethics Committee. All procedures were approved by the University of Canterbury Human Ethics Committee and by a committee of representatives of the Christchurch Methodist Mission. Three parents who were informed of the project elected not to take part.

The child subjects who took part in the present study were children who had been assessed as having language delay, whose first language was English and who were between three and five years of age. Potential subjects were initially identified by staff of early childhood facilities (play groups, day care centres, and Kindergartens) who suspected that the child had delayed language or by a Speech Language Therapist to whom the child had been referred. Initial contact was via the preschool staff or Speech Language Therapist who sought approval from the parents for an approach to be made by the Programme Coordinator. The staff then notified the Coordinator as to the names and telephone numbers of potential participants.

The Coordinator gave oral and written explanations to the parents of the obligations of the researcher (and the parents who joined the project)
and gave the parents an information sheet and consent form for them to consider further before deciding whether to sign. The information sheet and consent form are reproduced in Appendix Two.

Parents were asked to return the consent form a few days later either signed (if willing to participate further) or unsigned (if not willing). Once consent was received, arrangements were made for a Speech Language Therapist to carry out initial assessments of the child's language.

Initial Assessments of Child Language

The second step in recruitment was to ascertain if potential child subjects were language delayed. Language delay was determined by the administration of language tests by a Speech Language Therapist at a local clinic. The following screening assessments were undertaken: the Reynell Verbal Comprehension Test, the Peabody Picture Vocabulary Test, syntactic analysis of a sample of the child's spoken language and a hearing test.

The Reynell Developmental Language Scale (Reynell, 1977) is a frequently used, individually administered instrument which gives a measure of a child's control of the structures of English language. The Verbal Comprehension sub-test from this instrument was administered to all child subjects to give a measure of receptive language. Tables of norms were used to determine the degree of language delay. Children who scored at a level that indicated delay on this measure greater than six months of age equivalence were included in the programme.
The Peabody Picture Vocabulary Test (Dunn, 1981) is a frequently used test. In this study it was used to provide a measure of vocabulary knowledge. This instrument produced useable results for five of the eight children. The remaining children were reported to be either not sufficiently cooperative or accurate with their responses to permit reliable scoring. Age equivalence scores were used to determine the level of language delay. Children who showed delay on this measure of six months, relative to chronological age, were included in the programme.

Analysis of language samples was carried out using the Language Assessment, Remediation and Screening Procedure - LARSP (Crystal, Fletcher & Garman, 1977). Language samples, consisting of about twenty utterances for each child, were taken from tape recorded conversations. A child was confirmed as a suitable candidate for the programme when the profile of grammatical forms contained in the sample indicated knowledge of language structures at a level of about six months below chronological age.

Information on hearing thresholds for each child was obtained as part of the initial assessments because it was necessary to exclude the possibility that any sensori-neural impairment of hearing had contributed to delay in language. Results of audiometric assessment carried out within a six-month period were accepted. Otherwise, assessment was requested through an Audiologist. Hearing thresholds had to be within normal limits for children to be eligible for participation. There were no children excluded from the programme because hearing thresholds were outside the normal range.
Descriptions of subjects

Eight subjects and their parents took part in the study. Table 5 shows the order in which each child entered the programme, gender, age, position of child subjects in the family, and ethnicity. Allocation to the two training conditions was carried out in an alternating manner as subjects entered the programme. A mother and father were both present in all participating families. However, in all cases it was the mother who participated in training and therefore recorded the conversations from which data were obtained. Although one of the families was Maori, English was the language of the home.

Settings

There were three settings of interest in this study. Two were training settings, and these were the independent variables in this study. One setting was a generalisation setting.

Training Settings – Independent Variables

The training settings were the independent variables in this study. A clinic setting was used during the training of one set of parents, C1 to C4, in the desired language behaviours. This was a room within the premises of the Christchurch Methodist Mission set up for a range of uses including group and family meetings and assessments. The room was furnished with a variety of chairs, tables, small cupboards and pictures on the walls. This was intended to provide a setting with similar stimulus
Table 5

Order of entry to programme, gender of participating parent, entry age of child and family information on dyads

<table>
<thead>
<tr>
<th>Dyad No.</th>
<th>Order of entry</th>
<th>Parent gender</th>
<th>Child gender</th>
<th>Child age at entry</th>
<th>Position in Family</th>
<th>Family size</th>
<th>Family ethnicity</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1</td>
<td>1</td>
<td>Female</td>
<td>Female</td>
<td>36.1 mths</td>
<td>2</td>
<td>2 children</td>
<td>European</td>
</tr>
<tr>
<td>H2</td>
<td>3</td>
<td>Female</td>
<td>Male</td>
<td>39.0 mths</td>
<td>1</td>
<td>2 children</td>
<td>European</td>
</tr>
<tr>
<td>H3</td>
<td>6</td>
<td>Female</td>
<td>Male</td>
<td>52.6 mths</td>
<td>2</td>
<td>4 children</td>
<td>European</td>
</tr>
<tr>
<td>H4</td>
<td>8</td>
<td>Female</td>
<td>Male</td>
<td>38.0 mths</td>
<td>1</td>
<td>2 children</td>
<td>European</td>
</tr>
<tr>
<td>C1</td>
<td>2</td>
<td>Female</td>
<td>Male</td>
<td>40.0 mths</td>
<td>1</td>
<td>1 child</td>
<td>European</td>
</tr>
<tr>
<td>C2</td>
<td>4</td>
<td>Female</td>
<td>Male</td>
<td>41.2 mths</td>
<td>3</td>
<td>3 children</td>
<td>Maori</td>
</tr>
<tr>
<td>C3</td>
<td>5</td>
<td>Female</td>
<td>Female</td>
<td>39.9 mths</td>
<td>2</td>
<td>2 children</td>
<td>European</td>
</tr>
<tr>
<td>C4</td>
<td>7</td>
<td>Female</td>
<td>Male</td>
<td>53.5 mths</td>
<td>2</td>
<td>2 children</td>
<td>European</td>
</tr>
</tbody>
</table>
features to those typically appearing in home settings (Forehand & Atkeson, 1977). Living/dining areas in their homes were the training settings for parents H1 to H4.

The purpose of the project was to determine if there were differing effects of parent training in clinic and home settings on parents' continued use of trained conversational behaviours in generalisation settings use after training had ceased, and on child language behaviours.

**Generalisation Settings**

Generalisation settings were identified by parents that were most typical for their particular families. The majority of conversations were recorded while parent and child were sitting either in a lounge or dining area in their homes. However, parents were encouraged to use a variety of home settings in which to record conversations and these included unstructured relaxation, bath times, meal-times, meal preparation times and bed times. These were the generalisation settings for both sets of parents.

**Observation Procedures**

Parents were provided with a battery powered tape recorder, instruction on its use, and audiotapes. Each parent was asked to record, in situations at home, conversations between the parent and target child. In the baseline phase parents were asked to provide up to five recorded conversations on the initial recording tape. The guidelines given to parents stated that these conversations should be about events which had
happened relatively recently and in which the child was involved and these should be talked about in a way in which these conversations usually occurred in the family. Possible examples were discussed with each parent to help ensure understanding of the requirement. Examples included such things as; a shopping outing, an event at kindergarten, a visit to a friend, a game with a playmate. Parents were asked to exclude events where the focus was on the child misbehaving or being punished. An arrangement was made to collect the completed audiotape.

Over the training and Follow-up phases, parents were asked to record three conversations with the target child in home settings each week. In the training phase these conversations were recorded in the days between training sessions when the parents were practicing the skills discussed in training. A final probe conversation was also obtained after an interval of several weeks. Conversations in the training sessions were not recorded so no data were obtained from the training settings.

A paid research assistant, who was an undergraduate student studying psychology and linguistics, coded the tapes from the generalisation settings. The researcher trained the research assistant in use of the coding procedures. Training involved familiarisation with the coding form and symbols, explanation and illustration of parent and child utterance types and coding practice sessions with the researcher using conversations recorded in a pilot study. Training time totalled about five hours. Coding involved three separate passes through the tape. The first was to tally the words used by the parent and the child on separate counters. The second was to measure the durations of parent and child
talk time on separate digital stop watches, and the third time to code frequencies of the various types of parent utterances and to tally child utterances. A copy of the form used for coding is contained in Appendix Three. All parent utterances were coded and all child utterances tallied.

As the parent training sessions proceeded, measures of parent use of target language behaviours in generalisation settings were collected by asking parents to continue to audiotape conversations with their children at home in the days between training sessions. The conversations were to continue to be about events that had previously occurred and in which the child had been involved.

Parent H1 had some difficulties with faulty tape recorder functioning on a couple of occasions but the parent readily made contact to get these resolved quickly. In the case of Dyad H3, there were numerous difficulties with the tape recording process. Although repeated demonstrations and trials were given in the operation of the recorder, there were two occasions when tapes were provided for coding which contained no conversations and a few which contained only one conversation despite the parent attempting to record more.

These taping errors were not all reported back to the parents because it was felt such repeated feedback would be too punishing for them. It meant however, that the total number of recorded conversations provided for coding was fewer than it might have been. Parent H3 was given one additional training session to provide further training in sustaining conversation duration.
The training phase for Dyad C3 was extended at two points. There was a two-week gap between the second and third training sessions because no recording had been possible owing to a tape recorder malfunction. This turned out to be flat batteries. Also, because there was only one conversation recorded after the fifth training session and this showed a reducing trend on the duration and word use measures, this session was repeated.

In the case of Dyad C4 there was a tape recorder malfunction at one stage during the training phase but the parent detected this before it interfered with recording or produced any blank tapes and a replacement was promptly delivered. A lengthy conversation on the tape following Session 4 was not suitable for coding for this project as the discussion related to going to school that was to be a future event for this child. There was one conversation recorded following Session 4 in which the father and mother shared in the conversation with the child. Although initially thought to be unsuitable for coding, this conversation was included because, while he had not participated in training sessions, the father used appropriate prompting strategies. It was evident that there had been communication between the parents about the content of training.

When training sessions were completed, parents were asked to continue to provide a further three audio-tapes each with up to three conversations over three consecutive weeks. The recording requirement then stopped and parents were informed that they would be contacted after several more weeks for a further recording. This provided the final probe. The data obtained following the completion of the training phase
was of primary interest to the research questions as this provided the measures of maintenance in the generalisation settings.

**Dependent Variables**

The major objective of the training programme was to assist parents to use strategies which would extend conversations by increasing their own talk and encouraging their children to talk more about past experiences. Strategies were trained that would facilitate longer conversations. The primary research questions related to the parents’ continued use of these longer conversations after training had ceased. Baseline data were obtained in order to provide a basis for later determining the effect of training and training phase data were obtained to establish these effects. Once training outcomes were established, it was the data obtained in the Follow-up phase that would be used to answer the research questions.

The trained strategies together comprise the set of behaviours characteristic of adult-child everyday conversations that are facilitative of children’s language development. They therefore offered a naturalistic framework in which longer adult-child conversations (and hence increased talk by both parent and child) would be likely to be achieved.

**Measures of Parent Behaviour**

Tape recorded child conversations were coded to provide the following measures of parent conversational behaviour in generalisation
settings. Data on the following parent measures were obtained from all recorded conversations.

1  *Duration of Parent Talk per Conversation*

The amount of time that parents spent talking in each conversation was measured in seconds. This was measured on a stopwatch manually activated at the onset and end of each statement by the parent. Although periods of silence can be a legitimate part of conversational interaction, only the time spent talking was measured and silences were not timed. Parents were encouraged in training to keep conversations going for longer, while keeping the information meaningful to the child. Measuring the total duration of time spent talking in conversations provided the most direct measure of this. The strategy trained in the parents was to extend the time their child engaged in a conversation and this included attempts to re-engage the child.

2  *Number of Words Spoken by the Parent per Conversation*

The number of words spoken by the parent in each conversation was counted by the coder using a tally counter. This data was obtained to provide supportive evidence of a relationship between time engaged in conversation and the amount of language used.

3  *Rate of Enthusiastic Expression*

Where a parent statement of any kind was made with enthusiasm in the quality of expression, this was coded with a specific symbol (e) to
enable separate tallying. Included were enthusiastic responses from the parent such as, "That's interesting/amazing/funny!" Enthusiastic expression could be evident in any statement made by a parent within a conversation and this was therefore not a separate measure of quantity. This measure was considered to be a measure of parent responsiveness or quality of parent interaction style, rather than a measure of quantity. It was therefore most usefully measured as a rate of occurrence rather than as a total per conversation. The count of enthusiastic expressions was therefore converted to a rate per minute.

4 Percentage and Number of Conversation Scaffolds

The proportion of scaffolding statements within the total of all statements made by each parent in each conversation was calculated. Use of these language behaviours by the parents was considered to provide optimal experience of conversational language for the children. A high proportion of these in conversational interaction with children who had delayed language skills was therefore considered desirable. The proportions were presented as percentages. The total number of scaffolds used in each conversation would provide confirming evidence that parent use of these trained behaviours was contributing to the extended conversations.

Conversation Scaffolds comprised two types of parent statements. These were Questions and Contributions.
Questions. There were three types of questions which parents were encouraged to use and these were tallied separately to allow specific feedback to be given to parents as training proceeded. The first type was questions requesting context information. Included here were questions which requested information on where events occurred, when they took place, who was involved, what objects were used and why events occurred. Also included were questions which sought information on the child’s thoughts or feelings about events and questions which took the form “Do you know...?”, “Will you tell me...?” etc. For example, “Will you tell me who was with you?” Questions about context were counted and data used to show frequency per conversation.

The second question type was questions about actions or events. Included here were any requests to describe actions or events that occurred as part of the topic. These mainly involved information on what happened and how things occurred and could take the form "Tell me about...?". Questions which could be answered with a "yes" or "no", but which generated a longer answer were also included eg "Do you remember...?" or "Do you know...?". These questions were counted to show frequency per conversation.

The third type of question was questions that sought to clarify or refine comprehension. Included were any direct repetitions by the parent of preceding utterances made by the child, which had a rising intonation to imply a clarifying question. Also included were questions like "Did they?", "Was she?", "Is it?" as these served a similar function to those repetitions made with rising intonation. These questions were counted
on the grounds that they might be functioning as reinforcing responses for child contributions.

The use of questioning was trained as a strategy which parents could use to prompt child talk. Training required thoughtful questioning by the parents to assist their child in structuring an account of an experience and extending that account with information meaningful to the child. Because it was a strategy for extending conversations, the total number of questions per conversation was considered to provide a more useful measure than would a measure of rate of use. To have encouraged an increased rate of questions by parents would have risked stifling opportunities for children to extend responses. A tally was therefore made of the total number of questions used per conversation by each parent.

Contributions. The parents were encouraged to increase their own contributions to conversations. These contributions included any statements, made spontaneously or in response to a question or other prompt, which contributed new information to the conversation. This included elaborations of previously mentioned events. These statements sometimes included a tag question eg "We went in the car - didn't we?", and such cases were coded as one statement in this category.

Training the parents to contribute to conversations was intended as a strategy to extend conversations and to model conversational language to the children. Tallies were therefore made of all parent non-question contributions in each conversation.
The number of parent questions and the number of parent contributions were combined to provide the measure of scaffolds.

5 Other Parent Utterances

In addition to coding the measures above, three other parent behaviours were coded from the recorded conversations. These variables were monitored so that parents could be provided with feedback on their frequency of use during training. Also, adding these to the numbers of parent questions and contributions gave the total of all parent statements from which the proportion of scaffolds could be determined. No further analysis was carried out on these three measures.

Parent Statements Signalling Understanding and Attention. Any vocalizations which signalled understanding and attention but which did not seek specific responses were coded here eg "Mmm", "Oh!" and those repetitions of child statements made with a neutral tone. Such attention was regarded as a reinforcing response to a statement by the child. A frequency tally was made of these parent behaviours.

Parent Use of Inhibitors. These were statements by the parent that were critical or perfunctory. Included were any comments which attempted to correct the child's imperfect sentence structures or pronunciation, requests where the child was asked to repeat a statement, references to innaccurate content, eg "That's not right!", and signs of indifference to a
child's contribution. Frequency of parent use of such statements was counted.

*Parent Use of Yes/No Questions.* Included here were those questions that were not seeking an elaborated response but only affirmation or negation of the information contained within the question. For example, Child: "We went to the pool." Parent: "Did you have a swim?" Yes/No questions which resulted in only a "yes" or "no" response (rather than an elaborated response) were coded in a separate category on the grounds that their excessive use might stifle opportunities for elaborated statements by children and their use therefore needed to be monitored.

Using the categories described above, every utterance made by the parents, in each of the conversations recorded in generalisation settings, was coded.

*Measures of Child Language*

There were two types of child measures; those obtained from the language samples (from the recorded conversations with parents in the generalisation settings) and those obtained from standardised instruments administered at other times. The features of child language which were measured in the language samples were: the number of words spoken by the child, the amount of time the child spent talking, the length of child statements and the grammatical complexity of child statements.
The standardised measures used were the Reynell Verbal Comprehension Test (Reynell, 1977) and the Peabody Picture Vocabulary Test (Dunn, 1981). The measures of grammatical complexity, the Reynell Verbal Comprehension Test and the Peabody Picture Vocabulary Test were administered by two paid Speech Language Therapy professionals who were blind to each others assessments and did not have access to any of the conversational data.

1. *Duration of Child Talk per Conversation*

The amount of time that the child spent talking in each conversation was measured in seconds. This was measured on a stopwatch manually activated at the onset and end of each statement by the child. Therefore, only the time spent talking was measured and silences were not timed. It was decided to not include silences in this measure as it was not possible to determine from the audiotapes the extent to which the child had disengaged from the conversation.

2. *Number of Words Spoken by the Child per Conversation*

Each word spoken by the child in each recorded conversation was counted by the coder using a tally counter. This gave a measure of the total number of words the child used. Word counts were obtained for all recorded conversations.
3. Child Scores on the Reynell Verbal Comprehension Test (Reynell, 1977)

These measures were reported as age equivalents in months as indicated in the norms for the instrument. The test was administered to each child by a Speech Language Therapist as part of screening and again near the end of the whole programme. There were variations across children in the timing of the final assessment on this instrument within the Follow-up phase. This came about mainly because of factors related to the availability of the Speech Language Therapist.


This test was administered by a Speech Language Therapist and scores were reported as age equivalents in months as indicated in the norms for the instrument. It was intended that the test be administered to each child as part of screening and again at the completion of the whole programme. However, not all children cooperated with this and Peabody age equivalent scores were obtained only for subjects H3, H4, C2, C3 and C4. This test was administered at about the same time as the Reynell Verbal Comprehension Test and, as was the case with that instrument, variations occurred in the timing of the test within the Follow-up phase.

5. Syntactic Complexity of Child Language

Grammatical profiling using the LARSP procedure (Crystal et al., 1977) was carried out, by a trained analyst who was a Lecturer in Speech Language Therapy, on samples of children's language used in
conversations. This procedure involves matching, and tallying, each of the child’s utterances with coded English sentence structures which progressively increase in complexity. The content of profiles was described and measures were reported as age equivalent bands. In order to allow summarisation of these data in the same manner as that from other assessments, the practice adopted was to report the centre age of the band in which a child’s performance fell. Samples were obtained at the start of baseline, at the end of training and at the end of Follow-up.

6. *Length of Child Utterance*

Mean length of utterance was determined for samples of each child’s language used in conversations. These measures were reported as mean lengths and as age equivalents in months (Brown, 1973; Nelson, 1977). This analysis was carried out on samples of language obtained at the start of baseline, at the end of training and at the end of Follow-up.

**Design**

The effects of parent training were measured using a single case ABC design (Hersen & Barlow, 1976; Kratochwill, 1978) with a final Follow-up probe. This was replicated across all dyads as they entered the programme. Within the B phase (the training phase) for each dyad, specific conversation facilitation behaviours were sequentially trained in the parents. Measures were made of these language behaviours from the time of entry to the programme. There were two groups of parents. One group was trained in their homes and one was trained in a clinic. There
were four parent/child dyads in each group. Subjects entered the programme one at a time. When voluntary consent to participate was received from the parents, they were assigned to one or the other treatment group in an alternating manner as shown on Table 5.

During the first condition (Baseline), data on parent and child behaviours were collected in the generalisation settings. Parents were asked to provide five tape-recorded conversations with their children and baseline data were obtained from these.

During the second condition (Parent Training), parents were trained to use specific language facilitation behaviours and this training took place either in a clinic setting (for Dyads C1 to C4) or in their own homes (for Dyads H1 to H4). Condition B was the training phase. The skills targeted for training were introduced in sequence at intervals of one or two weeks.

Through the training phase measures of parent and child behaviours in the generalisation settings continued. This was achieved, in the days between training sessions, by the parents tape recording some of the conversations they had at home with their child as they practised the skills trained. Some of the data from these tapes were used to provide feedback to parents and to make decisions about whether or not to proceed to the next training step. Requiring the parents to record conversations each week in their homes may also have assisted in the generalisation of skills from the training settings to the generalisation settings. No data were obtained from the training settings. All data reported were from generalisation settings.
The conclusion of training signalled the onset of phase C, the Follow-up phase. There were two components to this phase. For a period, measures in the generalisation setting continued and then were stopped. Some weeks later, a Follow-up probe on each dyad was carried out and this completed data collection. Table 6 shows the dates of assessments, the commencement date of each phase, the number of training sessions and the durations in weeks of the training and Follow-up phases for each dyad. The focus of the study was on the data obtained over the Follow-up phase as these provided the measures of maintenance of the training outcomes in the generalisation settings.

**Training Procedures**

During the training phase the trainer met with the parent for individual weekly sessions. The trainer was a woman who had worked as a family counsellor and as a primary school teacher. This person had participated in the planning of the project and had observed and practised the training procedures during a piloting of the programme with two mother-child dyads.

The parent's own child participated with them. Each training objective was introduced and explained in a separate training session as described in the Trainer's Manual in Appendix Four. Instruction was given, in the manner outlined in the manual, on how to use the behaviours required to achieve the objective. It was expected that the number of training sessions required to increase these behaviours would vary from one parent to the next.
Table 6

Summary data on programme sequence for each dyad

<table>
<thead>
<tr>
<th>Subject</th>
<th>First child assessmt</th>
<th>Start of baseline</th>
<th>Start of training</th>
<th>Number of sessions</th>
<th>Second child assessmt</th>
<th>Duration of training period</th>
<th>Start of Follow-up</th>
<th>Final child assessmt</th>
<th>Final probe</th>
<th>Duration of follow-up</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1</td>
<td>20. 9.94</td>
<td>21.10.94</td>
<td>25.10.94</td>
<td>6</td>
<td>17.12.94</td>
<td>8 weeks</td>
<td>19.12.94</td>
<td>8. 3.95</td>
<td>10. 3.95</td>
<td>12 weeks</td>
</tr>
<tr>
<td>H2</td>
<td>4.10.94</td>
<td>21.10.94</td>
<td>28.10.94</td>
<td>5</td>
<td>19.12.94</td>
<td>8 weeks</td>
<td>28.12.94</td>
<td>22. 2.95</td>
<td>26. 4.95</td>
<td>17 weeks</td>
</tr>
<tr>
<td>H3</td>
<td>30. 6.95</td>
<td>6. 7.95</td>
<td>24. 7.95</td>
<td>6</td>
<td>5. 9.95</td>
<td>9 weeks</td>
<td>23. 9.95</td>
<td>6.10.95</td>
<td>27.11.95</td>
<td>9 weeks</td>
</tr>
<tr>
<td>H4</td>
<td>24. 9.95</td>
<td>4.10.95</td>
<td>25.10.95</td>
<td>5</td>
<td>22.11.95</td>
<td>5 weeks</td>
<td>27.11.95</td>
<td>23.12.95</td>
<td>12. 1.96</td>
<td>7 weeks</td>
</tr>
<tr>
<td>C1</td>
<td>20. 9.94</td>
<td>22.10.94</td>
<td>4. 1.94</td>
<td>5</td>
<td>21.12.94</td>
<td>7 weeks</td>
<td>22.12.94</td>
<td>16. 3.95</td>
<td>12. 4.95</td>
<td>15 weeks</td>
</tr>
<tr>
<td>C2</td>
<td>31. 3.95</td>
<td>25. 4.95</td>
<td>5. 5.95</td>
<td>5</td>
<td>5. 6.95</td>
<td>6 weeks</td>
<td>16. 6.95</td>
<td>7. 8.95</td>
<td>31. 7.95</td>
<td>6 weeks</td>
</tr>
<tr>
<td>C3</td>
<td>26. 5.95</td>
<td>4. 6.95</td>
<td>16. 6.95</td>
<td>6</td>
<td>28. 7.95</td>
<td>7 weeks</td>
<td>5. 8.95</td>
<td>12. 9.95</td>
<td>25.11.95</td>
<td>14 weeks</td>
</tr>
<tr>
<td>C4</td>
<td>14. 6.95</td>
<td>17. 7.95</td>
<td>5. 8.95</td>
<td>5</td>
<td>12. 9.95</td>
<td>7 weeks</td>
<td>23. 9.95</td>
<td>2.11.95</td>
<td>15.11.95</td>
<td>7 weeks</td>
</tr>
</tbody>
</table>
The trainer conducted the training following the Trainer's Manual to ensure maximum treatment fidelity across subjects. The manual was prepared specifically for this programme and detailed target parent language facilitation behaviours and the format of training sessions. The manual specified particular activities for use as contexts for interactions involving parent, child and trainer. The activities were selected in advance and were intended to provide circumstances where parent and child were in close proximity so that conversation could occur and both feel at ease. The activities included such things as having a snack, peeling and cutting fruit, and cutting and pasting.

The activities used with each dyad for the introduction of target conversational behaviours were as nearly identical as possible to ensure consistency in the manner in which language behaviours were introduced, but there was of course, variation across parent/child dyads in their choice of conversational topics. Sessions were of thirty to forty minutes duration.

Training sessions took the following format: (a) the trainer described the target training objective relevant to the particular session; (b) the trainer briefly explained how the training objective influences children's language; (c) the trainer provided the parents with a brief written statement describing the language behaviours related to the objective, for parents to take home, (d) the trainer modelled the target language behaviour with the child; (e) practice trials by the parent in using the target language behaviour with their child; (f) the trainer praised
instances of parent behaviour which successively approximated desired performance.

Once an objective was introduced, it was expected that some acquisition time would be necessary. If independent performance by the parent in the training session on a particular target behaviour was not reached after two weeks then some specific retraining was to be undertaken. During the practice trial phase of each session, the parent was encouraged to use all previously introduced behaviours so that a cumulative effect would occur over the training period.

Each training session continued until the parent demonstrated reasonably competent use of the behaviours within training sessions. Performance in training was judged to be reasonably competent when the trainer did not have to provide any corrective feedback during or following instances of parent implementation of the target behaviour. Parents were given feedback on their use of trained language behaviours in the tapes of conversations from generalisation settings.

Certain features of the parent training were designed to assist the process of generalisation of the trained skills from the training settings to the generalisation settings. First, all training was undertaken with the parents' own children. The children were a common discriminative stimulus for the trained behaviours across settings. The purpose of this was to establish commonality of stimulus conditions that might aid generalisation. Secondly, the initial verbal reinforcement given to parents by the trainer was specific with regard to parent skill use. In later stages of training the content of some of the praise statements shifted to contain
reference to child language use within conversations with the intention of establishing the child’s language as natural maintaining contingency for the parent.

The first training session for Dyad H1 was repeated in an attempt to see if the enthusiasm measure could be increased through provision of further training. An additional training session was taken with Parent H3 after session one because the one recorded conversation provided had a low enthusiasm measure.

Training Objectives

Objective 1. Parents will increase their use of encouraging and enthusiastic responses to children’s statements.

The rate per minute of parent’s use of enthusiastic expression was determined for each conversation.

Objective 2. Parents will identify natural opportunities to talk with children during their daily routine.

Natural opportunities in this context were firstly, those which involved minimal disruption to parent’s typical routines. Interventions that required parents to make significant immediate changes to their regular activities may have provided organisational difficulties for the parents. Such interventions would likely have taken longer to implement and may have generated resistance or resentment. It was, therefore, important to help parents to see the potential within existing routine activities for concurrently engaging their child in conversation. Secondly, natural opportunities included those where the child may have
been more likely or even be expecting to talk about recent past events. Times such as those immediately after the child’s arrival home from a preschool centre or outing were given as examples.

Parents only reported informally on this and no data were recorded.

Objectives. Parents will generate a range of relevant questions about the decontextualized topic that will help the child to construct a narrative.

In the current study, questions asked by parents during conversations with their children were categorised as seeking context, action or clarifying information. During training, the parents’ use of various question types was affirmed and the number of questions used by parents in scaffolding their children’s narratives was progressively extended.

Objective 4. Parents will use strategies to provide elaborated information to model a fully elaborated narrative topic for their children.

Training included explanation, modelling and practise of elaborating strategies as means of facilitating more parent talk about topics and thus longer conversations. The elaborating strategies were labelled Contributions.

Objective 5. Parents will use strategies to extend the duration of conversations including encouraging their children to return to a topic when it is prematurely ended or interrupted.

It was important that parents demonstrate continuation of the topic and encourage this in the child’s behaviour during a conversation. Although it is natural that attention be given to a young child’s interest in distracting events, parents were encouraged, in training, to then return
the child's attention to the conversation topic by use of relevant prompts and thus attempt to extend the conversation. The lengths of time the parent and the child spent talking in each conversation were timed to give a measure of the duration of conversations.

Training in Home Settings

Training sessions in homes followed the same general format. The trainer scheduled regular weekly sessions at times convenient to parents. Home-based training always took place in living or dining areas.

Training in Clinic Setting

One set of parents received training in a clinic setting away from home. This was located at premises belonging to the Christchurch Methodist Mission within a building also accommodating childcare and administrative facilities. Training of parents in the clinic setting followed the same general format as outlined above. Clinic training sessions were arranged at times convenient to the parents involved. The clinic setting was furnished with living room furniture of a type that might be seen in a family lounge or dining room. This provided stimulus conditions common to the clinic and to the homes to assist in the generalisation of the trained behaviours to the generalisation settings.

Transport needs were discussed with parents in the clinic-trained group before the training programme commenced. All parents in this group were able to provide their own means of transport.
Inter-coder Agreement

Inter-coder agreement checks were carried out on the first conversation from the first audiotape in the baseline phase and on the second conversation from the second audiotape in the training phase for six dyads. The experimenter independently coded data from the audiotapes that had previously been coded by the research assistant. Reliabilities were expressed as percentage agreement scores for the totals of each measure independently obtained by the coders from each conversation in the reliability sample (Cooper, Heron & Heward, 1987).

More stringent tests of inter-coder agreement are possible but require the use of categorical or occurrence-nonoccurrence data obtained through simultaneous coding. Kappa, for example, makes use of such data and corrects for chance agreements (Hartmann, 1977). However, in the present study the inter-coder checks on recorded conversations were carried out at a time after the original coding of taped conversations and whole session data were obtained. Percentage agreement calculations were therefore used.

Percentage agreements were calculated for a total of 84 measures from 12 conversations representing about six percent of all measures. Although it would have been desirable to have inter-coder agreement checks span the whole period over which data were collected, limitations on time available to the author did not permit this.

Table 7 shows the first coder counts, the percentage agreements for each conversation measure from each of the twelve tapes used to obtain inter-coder agreement measures and the median agreements for each
Table 7

*First observer counts, percentage agreements and median agreements for conversation measures*

<table>
<thead>
<tr>
<th>Tapes</th>
<th>Duration Parent Talk</th>
<th>Duration Child Talk</th>
<th>Parent Words</th>
<th>Child Words</th>
<th>Enthusiastic Expression</th>
<th>Questioning</th>
<th>Contributing</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>Percent</td>
<td>N</td>
<td>Percent</td>
<td>N</td>
<td>Percent</td>
<td>N</td>
</tr>
<tr>
<td>1</td>
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<td>100.00</td>
<td>133</td>
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<td>55.00</td>
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<td>99.00</td>
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<td>6.87</td>
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<td>60.53</td>
<td>86.65</td>
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<td>71.63</td>
<td>97.87</td>
<td>88.47</td>
<td>304</td>
<td>97.36</td>
<td>169</td>
</tr>
</tbody>
</table>

| Median | 88.75 | 77.83 | 95.50 | 85.15 | 62.29 | 86.66 | 78.23 |
measure. The greatest variability is evident for the measure of enthusiastic expression. The lowest rates of agreement tended to occur with low occurrence of behaviours and the highest rates with non-occurrence of behaviours.
CHAPTER FIVE

RESULTS

The eight parent/child dyads who entered the programme remained actively involved until completion. In total they provided 39 baseline conversations prior to the start of training. Forty-two individual training sessions were held and 101 conversations were recorded during the training phase. During the Follow-up phase, 51 conversations were recorded and a further nine conversations recorded for the final probe. In total this provided 200 recorded conversations for analysis.

Parents were requested to provide five conversations on the baseline tape and three conversations on each tape recorded over the week after each training session and through the Follow-up phase. Two baselines contained fewer than five data points but none was less than four. It was considered that the shorter baselines still contained enough information to determine later effects of training.

There were occasions when parents only had the opportunity to record one or two conversations when mechanical or electrical problems with tape recorders prevented more recording. At other times illness, employment changes and family commitments resulted in missed recording sessions.
Characteristics of the Families Affecting Data Collection

Family H1

Parent H1's initial interactions contained little use of enthusiastic expression and her interaction style was rather quiet and low key. A high number of tapes returned for coding contained some recorded conversation about matters that were not past events. As only conversations about past events were being coded in this project, this feature caused the coding process to be quite prolonged in some instances.

Enthusiastic expression seemed to be a difficult behaviour to change for Parent H1. In fact, after the final training session enthusiastic expression was still at baseline levels and this did not become evident until later because of tape coding delays. The parent commented informally during the week after training had finished that the child's maternal grandmother had reported greater ease in understanding things the child said to her.

Family H2

Child H2's articulation was poor and this made the child's speech difficult to comprehend at times on the tapes. However, his mother used a strategy of restating what the child had said which assisted with the coding process. The child had an intense interest in trains at the time of involvement with this project and it seemed that some reference to these entered a number of conversations, sometimes to his mother's frustration and bewilderment.
Child H2's mother reported that H2 was often non-compliant. During a scheduled home visit by the researcher to provide feedback to the parents, both volunteered some detail about their own backgrounds. One reported having lived in quite disrupted family circumstances as a young person where there was poor parental responsibility and siblings frequently experiencing conflict at school and in the community. This parent reported that a sister who was a couple of years younger, had been killed in tragic circumstances as a teenager while on one of her frequent lengthy and unexplained absences from home. The other parent reported long term problems with depressive illness that interfered with ability to sustain employment and general motivation. This parent further reported inconsistent use of prescribed medications.

Family H3

Casual observation in the home of Dyad H3 of the general interactions between parents and children indicated that there were numerous loud and sharp commands given by parents. The parents responded with keen interest to the idea of sustained conversation. The father was not able to participate in training sessions because these occurred at times when he was at work but a number of times he recorded a conversation after being given guidance from his wife. While these were not used as sources of data because the father had not taken part in training, they clearly were a further language experience for the child and some feedback was given to the father about
these. It was evident from the tapes that, at times, other siblings were showing interest in the conversation going on. When this happened the mother usually sought assistance from the children's father who then otherwise entertained the other siblings. Although this helped with clarity of the recording, it probably represented an unnatural feature of the parent's usual interaction with the children.

*Family H4*

Following the preliminary discussions with the parents of Child H4 and explanation of the baseline requirements, there was a delay of a couple of weeks in commencing recordings. This was because the mother had a sudden recurrence of a depressive type illness. She contacted the trainer to advise that this was a long-term illness and to give assurance that the condition usually stabilised relatively quickly. Sometimes she sought assistance from family members with care of the children at these times. After the delayed start to the programme there was no further indication from the mother of any other difficulty related to her illness.

Parent H4 had a generally quiet manner in interactions with the child. There were some articulation difficulties in the child's speech and the parent's strategy of repeating child statements assisted with coding and transcribing from tape recordings. Dyad H4 was the final dyad to enter the programme. No final probe was obtained for this dyad.
Family C1

Parent C1 spoke quietly and usually with a controlled and serious tone. Attempting to change behaviours to increase use of enthusiastic expression and sustain conversations did not appear easy for this parent. During a scheduled home visit the father reported to the researcher that his work involved him frequently travelling away. The father felt that this was upsetting for the child at the times he was going and caused the child to become very excitable and difficult to manage for a period after his father's return. It was reported that attempts by the parents to communicate with the child were difficult and often lead to the child engaging in squealing when spoken to and this behaviour was thought to be increasing. The mother concurred with these observations and indicated that she was seeking advice on ways of dealing with difficult behaviours and getting more compliance. The parents indicated that they were wishing to have another child and were hesitating because of a desire to first resolve these various concerns.

Family C2

The training and coding processes were relatively straightforward in the case of Dyad C2. A feature of some interactions was a tendency for Parent C2 to respond negatively to contributions by the child where these contained inaccuracies but seemed to be the child's best attempt at a response eg. remembering how many balls were seen at a shop. The concern was that if used excessively or inappropriately, negative responses by the parent could
inhibit the child's willingness to contribute. Through the trainer, feedback on this aspect of interactions was given to the parent on a couple of occasions when this featured on tapes with an expectation that this would prompt a change in the parent's language or help keep negative reactions to a minimum.

*Family C3*

Parent C3 worked extremely hard in the taped conversations to conscientiously put into place the suggestions made during training sessions. This was evident in a determined manner used by the parent especially in getting conversations started. The child showed some resistance at times to engage in conversation when she was aware that the tape recorder had been turned on. The parent therefore had to be as subtle as possible about this and had to be persistent at times to get a conversation under way. It was suspected that there might have been some general behaviour management difficulties experienced by the parent in Dyad C3. For example, Child C3 sometimes resisted her parent's request to converse when the tape recorder was on. Three conversations, rather than just the one requested, were recorded on the final tape for this dyad. Data from all of these conversations were used because there had been a relatively small number of conversations on earlier tapes. Final probe data for Dyad 3 therefore shows a cluster of three data points.
Family C4

Child C4 was included because his mother was keen to participate to assist the child's preparation for school entry although he was almost four and a half years of age on entry to the programme. Child C4 became ill for one week during the Follow-up phase. No conversations were recorded during that week and the final tape from the Follow-up phase was therefore delayed.

Effects of Training on Parent Conversation Behaviours

Of central interest in this project is the maintenance data. Therefore, the effectiveness of the training programme per se was not a focus of the study. However, a description of the effects of training is necessary in order to establish a reference for later determining the extent of maintenance. All data on the parents' use of the conversational behaviours in generalisation settings are shown in Figures 1 to 8. All data on the conversational skills were obtained from the tape recorded conversations made by the parents in the days between training sessions when they were practicing the skills discussed in training. Discussion of the effects of training in this section will focus on the baseline and training phase data. The descriptions are based on visual analyses of trends and ranges in the data.
Figure 1  Parent and child conversation variable across baseline, training and follow-up phases for Dyad H1.
Figure 2  Parent and child conversation variable across baseline, training and follow-up phases for Dyad H2.
Figure 3  Parent and child conversation variable across baseline, training and follow-up phases for Dyad H3.
Figure 4  Parent and child conversation variable across baseline, training and follow-up phases for Dyad H4.
Figure 5  Parent and child conversation variable across baseline, training and follow-up phases for Dyad C1.
Figure 6  Parent and child conversation variable across baseline, training and follow-up phases for Dyad C2.
Figure 7  Parent and child conversation variable across baseline, training and follow-up phases for Dyad C3.
Figure 8  Parent and child conversation variable across baseline, training and follow-up phases for Dyad C4.
Duration of Parent Talk

As shown in Panel 1 of Figure 1, baseline measures of duration of parent talk in conversations for Parent H1 ranged between 10 and about 70 seconds. A clear effect of training is evident in the increasing trend in the data path through the training phase with durations of parent talk ranging between 18 and 122 seconds.

As can be seen in Panel 1 of Figure 2, baseline durations of parent talk in conversations for Parent H2 were between 14 and 38 seconds. A slightly rising trend was evident over the training phase with most durations of parent talk ranging between 16 and 74 seconds and one uncharacteristically long duration of 131 seconds early in the training phase. A training effect is evident.

Baseline durations of parent talk in conversations for Parent H3 were between 11 and 45 seconds, as can be seen in Panel 1 of Figure 3. While some durations of parent talk in the training phase were over 50 seconds, generally no training effect is evident for this parent.

Baseline durations of parent talk in conversations for Parent H4 were between 12 and 46 seconds, as shown in Panel 1 of Figure 4. A strong training effect was evident in the trend in the data path over the training phase with durations of parent talk ranging between 27 and 159 seconds.

As shown in Panel 1 of Figure 5, baseline measures of duration of parent talk in conversations for Parent C1 ranged from 29 to 69 seconds. The
trend in durations of parent talk through the training phase was flat indicating that there was no training effect for this parent.

As shown in Panel 1 of Figure 6, baseline durations of parent talk in conversations for Parent C2 ranged between 8 and 35 seconds. Although there was variability in duration of parent talk over the training phase, there is overall an upward trend in the data path indicating a strong training effect.

Data in Panel 1 of Figure 7 shows that baseline durations of parent talk in conversations for Parent C3 ranged between about 5 and 23 seconds. Variability was evident in durations of parent talk over the training phase. There was an increasing trend in duration of parent talk through the training phase and a clear training effect. The level of the data path over this phase was also considerably higher than the baseline level and durations ranged from 51 to 236 seconds. The longest duration of parent talk was in the last conversation in the training phase. This contained a combination of scaffold types (questions and contributions) and provides a useful illustration of this parent’s application of the trained skills to support the reconstruction of an event. Examples of parent statements in this conversation included; ‘Whose house did you go to?’, ‘Who was there?’, ‘Is the baby a boy or a girl?’, ‘What did you have to drink?’, ‘Chocolate biscuits are too expensive?’, ‘What did you play?’ ‘How did you fall?’, ‘How did you get home?’, ‘It was raining when we got home’, ‘It made us cold and wet’, ‘We walked across the road’, ‘You pushed the pram from the shops to home’, ‘We put the fire on’. 
Data in Panel 1 of Figure 8 shows that there was an increasing trend evident in baseline measures of duration of parent talk in conversations for Parent C4 and durations ranged between 15 and 42 seconds. Over the training phase durations continued to show an increasing trend. The general level of the data path through the training phase is considerably higher than the baseline level and durations of parent talk ranged from 52 to 237 seconds so it appears that there was a small training effect.

*Summary of Training Phase Measures of Duration of Parent Talk*

There was considerable variability in all data paths for duration of parent talk in conversations. Data for Parents H1, H2, H4, C2, C3 and C4 show that, for these parents, the training was beneficial in leading to increases in the duration of parent talk in conversations. The data for parents H3 and C1 show that the training had little overall impact for these parents on duration of talk. The clearest training effects on this variable were evident in the data for Parents H4 and C3.

*Number of Parent Words per Conversation*

Counts were made of the number of words spoken by the parents in each recorded conversation in generalisation settings. Increasing the number of words would be inevitable if the parents used increased numbers of scaffolds as a means of extending the duration of time spent talking. This measure was used to support that for duration of parent talk and number of
conversational scaffolds used per conversation as further evidence that parents were using increased amounts of language in conversational interactions. The data are shown on the second panel on each of Figures 1 to 8.

Parent H1 used between 64 and 296 words in conversations during baseline as shown on Panel 2 of Figure 1. During the early stages of the training phase, the number of words the parent used per conversation remained at a level comparable to baseline. There was an increase in the latter part of training with two conversations showing in excess of 500 words used by the parent and there was a strongly upward trend in the number of words used by the parent through the training phase.

Parent H2 used between 53 and 186 words per conversation during baseline as shown in Panel 2 of Figure 2. There was possibly a slightly rising trend to baseline data. There was considerable variability in the training phase data for Parent H1 but a gradual increasing trend over the phase and a small training effect is indicated.

Parent H3 used between 42 and 124 words per conversation during baseline as shown in Panel 2 of Figure 3. The trend in parent data through the training phase was generally flat indicating no training effect.

Parent H4 used between 32 and 249 words per conversation during baseline as can be seen in Panel 2 of Figure 4. Through early stages of the training phase the number of words used by the parent in conversations remained at a level comparable to baseline but from the middle of the phase
the number of parent words increased to give a strong increasing trend. The range was 75 to 534.

The number of words used by Parent C1 in baseline conversations ranged from 155 to 367, as can be seen in Panel 2 of Figure 5. The number of words the parent used generally showed little change through the training phase and the trend was flat indicating no training effect on number of words used.

The baseline range for words per conversation used by Parent C2 was 31 to 178 as shown in Panel 2 of Figure 6. Although data showed variability and ranged from 39 to 610, over the training phase there was a strong upward trend in the number of parent words per conversation.

The number of words per conversation used by Parent C3 during baseline ranged from 37 to 81 as can be seen in Panel 2 of Figure 7. There was an immediate increase in words per conversation at the start of the training phase with a reasonably strong increasing trend through this phase and a range from 114 to 735.

In Dyad C4, the baseline number of words per conversation used by the parent ranged from 61 to 149 with an increasing trend across the phase as shown in Panel 2 of Figure 8. In the training phase there was a consistent increasing trend in number of parent words that ranged from 168 to 460 per conversation. Because there was an increasing trend in the baseline data, it is not clear that there was a training effect on this measure.
Summary of Training Phase Measures of Numbers of Parent Words

Strong effects in increased numbers of words use per conversation were evident for Parents H1, H4, C2 and C3. A smaller effect is evident for Parent H2. There may have been an effect for Parent C4 but this cannot be confirmed because there was a rising trend in the baseline data. There were no training effects on number of words used by Parents H3 and C1. As was the case with the data on duration of parent talk in conversations, there are comparable effects overall for parents trained at home and those trained in the clinic.

Enthusiastic Expression

The parents were trained to use enthusiastic expression during conversations with their child. The rates per minute of enthusiastic expressions used by the parents in the conversations recorded in generalisation settings are shown on the third panel of Figures 1 to 8.

Parent H1’s use of expressed enthusiasm ranged between 0 and 3 per minute in the baseline conversations. As can be seen from Panel 3 of Figure 1, there was high variability during the training phase, ranging from 0 per minute to 12 per minute. However, by the end of training, the rate of enthusiastic comments was at approximately baseline levels.

As can be seen from Panel 3 of Figure 2, Parent H2 made enthusiastic comments at rates ranging between 0 and 8 per minute during baseline. This increased at the beginning of training, indicating an immediate training
effect, but had fallen to levels commensurate to baseline by the end of the training phase.

As shown in Panel 3 of Figure 3, Parent H3 made enthusiastic comments at rates between 0 and 5 per minute during baseline conversations. This increased in the early stages of the training phase and although by the end of this phase there was some variability in use of enthusiasm, ranging between 0 and 21 per minute, some training effect was probably still evident.

Parent H4 used enthusiastic expression in most baseline conversations at rates between 1 and 5 per minute although, as can be seen in Panel 3 of Figure 4. There was one conversation with a particularly high use of enthusiasm at 20 per minute. This suggests that Parent H4 had the ability to show high levels of enthusiasm in conversational interaction prior to training. The rate of enthusiasm showed a general upward trend through the training phase and there is probably a training effect in the more consistent higher levels of enthusiasm in conversations at the end of the training phase.

Parent C1 made no use of enthusiastic expression in the baseline measures. As shown in Panel 3 of Figure 5, during the early stages of the training phase the rate of enthusiastic expression showed a slight increase suggesting a training effect. This rate then decreased but in the latter stages of the training phase the parent showed some variable use of enthusiastic expression again suggesting a small training effect at the end of training.
Parent C2 used no enthusiastic expression in three out of four baseline conversations. In one baseline conversation the rate of enthusiastic expression was five per minute. As can be seen in Panel 3 of Figure 6, there was an increasing trend in this parent's use of enthusiastic expression through the training phase showing a clear training effect.

Parent C3 used no enthusiastic expression in four out of five baseline conversations. One baseline measure showed use of enthusiastic expression at a rate of about 13 per minute indicating that Parent C3 was able to use enthusiasm in conversational interactions. As shown in Panel 3 of Figure 7, there was a gradual increasing trend in consistently high levels of use of enthusiasm over the training phase indicating a beneficial effect of training.

As can be seen in Panel 3 of Figure 8, Parent C4 used enthusiastic expression at rates ranging between about 3 and 7 times per minute during baseline. This increased to about 10 per minute following the first training session and although there was variability in the rates of enthusiasm across the training phase, the overall level is above baseline levels indicating a training effect.

*Summary of Training Phase Measures of Enthusiastic Expression*

Clear effects of training in the use of enthusiastic expression were evident for Parents H4, C2, C3 and C4. Small effects were evident for Parents H3 and C1 but Parents H1 and H2 did not improve with training in their use of enthusiastic expression.
Percentage of Scaffolds in Total Conversational Utterances by Parents

The main objective in training was to bring about an increase in the durations of conversations. Training therefore primarily aimed to encourage parents to continue using conversational scaffolds for increased periods of time rather than to increase the rate or proportion of scaffolds used within conversations.

Conversational scaffolds consisted of parent use of questions and contributions. Three types of questions were taught to parents. One was the use of questions to prompt additional child talk about the context of the conversational topic. The second was the use of questions about actions that occurred in the event recounted. The third was the use of questions to seek clarification or refine parent comprehension of information about the topic. The content of each question was coded and the total number per conversation was summed. The purpose of counting the question types was to be able to provide feedback to parents during training on specific ways to prompt increased talk by the children. No one particular type of question was necessarily expected to be a more effective scaffold than another.

Parents were also taught to make contributions to conversations as a means of scaffolding narratives. Parent contributions were statements, other than questions, which provided new information and included responses by parents to their own questions.
The number of questions and the number of contributions were added to provide a total number of scaffolds per conversation. Calculations were made to determine the percentage that scaffolds represented of the total conversational utterances made by each parent. These percentages are shown in Panel 4 of Figures 1 to 8.

Baseline data for all parents generally showed quite high levels of use of conversational scaffolds and these comprised between 60 and 100 percent of parent conversational utterances. The proportion of scaffolds used by the parents therefore did not need to be targeted for change in the training. Data paths through the training phase for all parents remained at levels comparable to baseline. Some reduction in variability in percentage of scaffolds in later stages of the training phase is evident for Parents H1, H3 and C1. This increased consistency in the level of use of conversational scaffolds by these parents may have been a result of the training.

*Number of Parent Conversational Scaffolds*

The training aimed to increase the total number of scaffolds used by parents as a means of keeping conversations going for longer. It was hoped that as practice opportunities proceeded in the generalisation settings in the days between training sessions through the training phase, there would be increases in the number of scaffolds used by parents in successive conversations.
As can be seen in Panel 5 of Figure 1, in baseline conversations Parent H1 used between 5 and 29 scaffolds per conversation. Data through the training phase showed variability, ranging between 6 and 57, but a gradual upward trend and a moderate effect of training by the end of the phase.

Parent H2 used between 9 and 24 scaffolds in baseline conversations, as can be seen in Panel 5 of Figure 2. Although in a number of training phase conversations this parent used considerably greater numbers of conversational scaffolds, generally no clear trend or training effect is evident.

Parent H3 used between about 6 and 13 scaffolds in baseline conversations, as can be seen in Panel 5 of Figure 3. Some small increases in use of scaffolds were achieved early in the training phase. However this effect did not sustain and in later training phase conversations the parent’s use of scaffolds was at about baseline level.

As shown in Panel 5 of Figure 4, Parent H4 used between 3 and 19 scaffolds per conversation in baseline conversations. In most conversations early in the training phase, the parent’s use of scaffolds continued at about baseline levels. However, in the later half of the training phase an upward trend was evident indicating a training effect and a range from 5 to 45 scaffolds.

As can be seen in Panel 5 of Figure 5, there was a wide range in the number of scaffolds used by Parent C1 in baseline conversations. In four out of the five baseline conversations Parent C1 used between 14 and 25 scaffolds and there was one conversation in which the parent used 43 scaffolds.
Through the training phase the number of scaffolds used by parent C1 remained unchanged relative to baseline levels.

Numbers of scaffolds used in baseline conversations by Parent C2 ranged between 3 and 23 as shown in Panel 5 of Figure 6. There was a clear increasing trend in the number of scaffolds used in successive conversations over the training phase, ranging between 5 and 61, indicating a training effect for this parent.

Numbers of scaffolds used in baseline conversations by Parent C3 ranged between 2 and 12 as can be seen in Panel 5 of Figure 7. Overall, the baseline level of use of scaffolds by this parent was the lowest of all subjects. From the start of the training phase an immediate increase was evident in the number of scaffolds used by Parent C3 and there was a gradually increasing trend over the training phase with a range from 15 to 60.

As shown in Panel 5 of Figure 8, there was a rising trend in the number of scaffolds used by Parent C4 in baseline conversations ranging from 5 to 16. A similar gradually increasing trend was evident in the number of scaffolds use in successive conversations over the training phase. However, the numbers of scaffolds in the training phase conversations are at a somewhat higher level than those in the baseline, ranging from 22 to 69, so a training effect is probably evident.
Summary of Training Phase Measures of Parents Use of Conversational Scaffolds

Percentage. In general, the parents showed quite high levels of use of conversational scaffolds in baseline conversations. Therefore it was not expected that parents would necessarily increase the rate at which they used scaffolding behaviours within conversations over the training phase. It was not expected that the percentage of scaffolds, as a proportion of all parent conversational utterances, would necessarily show any systematic change as a result of training.

Generally the data paths for percentage of scaffolds through training phase conversations were consistent with this expectation in that they do not show any substantial change relative to the baseline levels. If a parent had shown particularly low levels of use of scaffolds in baseline conversations, then an increase in the training phase would be desirable.

Number. Data for Parents H1, H4, C2, C3 and C4 showed increasing trends over the training phase in number of scaffolds used per conversation. This indicated clear effects of training for these parents. These parent were using scaffolding skills to extend conversations.

Training phase data for Parents H2, H3 and C1 showed use of scaffolds at levels similar to baseline levels indicating that the training was not immediately effective for these parents in bringing about increased use of
scaffolds as a way of extending conversational interactions with their children.

*Summary of All Training Effects*

Visual analysis of training phase data relative to baseline data shows that on the measure of duration of parent talk there were benefits for Parents H1, H2, H4, C2, C3 and C4 but no effects for Parents H3 and C1. Effect sizes seemed greatest for Parents H4 and C3. On this variable home training and clinic training appeared to have similar effects.

Data for Parents H3, H4, C1, C2, C3 and C4 showed there was greater use of enthusiastic expression by these parents over the training phase although the effects were small for Parents C1 and C4. Parents H1 and H2 showed no beneficial effects of training in use of enthusiastic expression at the end of the training phase. Effects were evident for a greater number of the clinic-trained parents.

Visual inspection of data on percentage of scaffolds used in conversations by the parents showed that all used high levels in baseline and these remained consistently high through the training phase. Data on the number of scaffolds per conversation used by parents showed increases through the training phase for Parents H1, H4, C2, C3 and C4. The training in use of conversational scaffolds to extend conversations was therefore effective with a slightly greater number of the clinic-trained parents. With the exception of Parent H2, there was consistency in the effects for duration
of parent talk and use of scaffolds. This suggests that these parents were extending the amount of time they engaged in talking by using increased numbers of conversational scaffolds.

In an analysis of the overall effectiveness of the training, percentage and number of scaffolds used can be excluded. This is because percentage was not specifically targeted and increasing the number of scaffolds was the means by which duration of parent talk was influenced. Therefore, there were two key variables specifically trained in all eight parents: Duration of Parent Talk and Parent Use of Enthusiastic Expression. Training effects were evident in 12 of the 16 possible instances for all parents on these two key measures. No dramatic or consistent differences in effect sizes were evident in the data for parents in each training condition, as determined by visual analysis and comparison of data trends. Of the 12 instances in which training effects were evident, seven involved clinic-trained parents and five involved home-trained parents. The training may therefore have been slightly more effective overall for the parents who were trained in the clinic.

**Parent Maintenance of Trained Conversation Behaviours**

The extent of maintenance by parents of the trained conversation behaviours is reflected in the trends in data through the Follow-up phases on Figures 1 to 8. The data obtained in the Follow-up phase is of central interest to the primary research question in this study because it provides the
measures of the extent to which parents maintained their use of the trained conversational behaviours in the post-training period.

*Maintenance of Duration of Parent Talk*

Follow-up phase data on duration of parent talk for Parent H1 can be seen in Panel 1 of Figure 1. The duration of parent conversational talk showed a steep decrease over the Follow-up phase and returned to baseline levels. The final probe measure, made after an interval of 95 days, is not consistent with this decreasing trend. It shows a duration of parent talk comparable to that achieved at the end of training. Despite this, the downward trend in the other Follow-up data is sufficiently steep to clearly indicate that durations of parent talk achieved in training did not maintain for Parent H1.

Follow-up phase data for Parent H2 is shown in Panel 1 of Figure 2. Although there is variability, an increasing trend is evident in duration of parent talk over the Follow-up phase. The final probe, taken after an interval of 85 days, shows duration of parent talk continuing at a level comparable to that achieved at the end of training. The data indicates that Parent H2 maintained the increased durations of conversational talk.

Follow-up phase data for Parent H3 is shown in Panel 1 of Figure 3. As durations of parent talk for this parent had essentially stayed at baseline levels throughout the training phase, there was no effect to maintain. It was interesting that the Follow-up measures showed increased durations of
parent talk and the final probe, taken after an interval of 39 days, showed a further increase. It is possible that the Follow-up phase measures of duration represent a delayed effect of training. However, the data available can not be interpreted to indicate a maintenance effect.

Follow-up phase data on duration of parent talk for Parent H4 can be seen in Panel 1 of Figure 4. A steep increasing trend is evident in the Follow-up phase measures indicating continued improvement on the effects achieved during training. No final probe was taken for Parent H4. However, the increasing trend was sufficiently steep and generally moving above the effects shown in training to allow a reasonably confident conclusion that maintenance was demonstrated for Parent H4.

Panel 1 of Figure 5 shows Follow-up phase data on duration of parent talk for Parent C1. The training had not been effective in increasing duration of parent talk for this parent and, apart from one conversation in which there was a substantial increase, the Follow-up data continued at levels comparable to baseline. The duration of parent talk in the final probe, taken after an interval of 86 days, showed a moderate increase in duration but this was not sufficient to indicate any substantial change.

In Panel 1 of Figure 6, Follow-up phase data on duration of parent talk for Parent C2 can be seen. Although remaining above baseline levels, the data shows a gradual downward trend and the final probe duration measure, taken after an interval of 31 days, is consistent with this trend. Although the
decrease is gradual, it is evident that the strong effect achieved in training for Parent C2 was not maintaining.

In Panel 1 of Figure 7 data on duration of parent talk for Parent C3 can be seen. Although there were some considerably long durations of parent talk in the training phase, the Follow-up phase data is at a comparable level to most training phase data indicating maintenance for Parent C3. However, data from the final probe, obtained after an interval of 71 days and for which this parent provided three recorded conversations, shows a drop in durations of parent talk in conversations suggesting reduced longer term maintenance.

Panel 1 of Figure 8 shows data on duration of parent talk for Parent C4. Over the Follow-up phase there is a steep decreasing trend indicating that the increased durations of parent talk achieved in training were not maintaining. The final probe, taken after 30 days, was consistent with this downward trend and indicated a return to baseline levels.

*Summary of Maintenance for Duration of Parent Talk*

The Follow-up phase data indicates that the increased durations of parent conversational talk were maintaining for only two parents, H2 and H4. Maintenance was not evident in the data for Parents H1, H3, C1, C2, C3 and C4.
Maintenance of Number of Parent Words per Conversation

Description of maintenance on the measures of parent words per conversation is provided only in support of the data on duration of parent talk. As occurred with data on the effects of training, it would be expected that there would be strong parallels in the Follow-up data between words used and time spent talking.

Data on words used per conversation by Parent H1 are shown in Panel 2 of Figure 1. Although there was some variability across the Follow-up phase, the range was 82 to 537, in general there was a decrease in words used per conversation by the parent to levels commensurate with baseline. The final probe at 189 words was also within the baseline range.

Data on words used per conversation by Parent H2 are shown in Panel 2 of Figure 2. The initial Follow-up phase measures showed a decrease in words used by the parent relative to levels achieved during training although this steadily increased to give a clear increasing trend across the phase. The range was 68 to 368 words. The final probe, at 270 words, was consistent with this trend indicating maintenance in words used by Parent H2.

Data on words used per conversation by Parent H3 can be seen in Panel 2 of Figure 3. A substantial increase occurred in the number of words used in conversations during the Follow-up phase and there was an upward trend across this phase with a range for 161 to 256 words. As with the measure of duration for this parent, no effect had been evident during the training.
phase. The increase in Follow-up phase measures may have been a delayed training effect. If this was so then the further increase evident in the final probe measure of 302 words might indicate maintenance in the behaviour. This could only have been confirmed with further data for Parent H3.

Data on words used per conversation by Parent H4 is shown in Panel 2 of Figure 4. Although in the Follow-up phase the range was large, 202 to 716 words, the number of words used by the parent per conversation continued to exhibit a strong upward trend. A final probe was not obtained, however the steep trend suggests maintenance of the behaviour.

Panel 2 of Figure 5 shows data on words used per conversation by Parent C1. There had been no effect of training for this parent. Generally the Follow-up phase data continued the flat trend at levels comparable to the baseline and training phase. Although the final probe of 288 words was at a level that compared with the highest measures of number of words for this parent, it was still generally consistent with a flat trend.

Panel 2 of Figure 6 shows data on words used per conversation by Parent C2. Over the Follow-up phase there was a gradual reduction in the number of parent words per conversation with a range from 123 to 345 words. The final probe at 185 words was consistent with this indicating that the behaviour was not maintaining.

Panel 2 of Figure 7 shows data on words per conversation for Parent C3. In Follow-up phase conversations the number of parent words was at a level consistent with most training phase data and ranged from 184 to 398 words.
indicating maintenance by Parent C3. However, the final probe measures, ranging between 55 and 109 words, showed a return to near baseline levels suggesting that the maintenance effect was only short term.

Panel 2 of Figure 8 shows words per conversation data for Parent C4. While the initial Follow-up phase data showed a further increase above training levels, a considerable reduction in the number of parent words occurred in later conversations giving a strongly reducing trend over this phase. The range was 269 to 944 words. The final probe at 145 words was at about baseline levels and confirmed the steep reducing trend indicating no maintenance on the measure of words per conversation for Parent C4.

**Summary of Maintenance of Parent Words per Conversation**

Visual analysis of the Follow-up data showed that Parents H2 and H4 maintained the improvements achieved in the number of words spoken per conversation. Follow-up phase data for Parents H1, C2, C3 and C4 showed clear downward trends indicating that these parents did not maintain increased numbers of words used per conversation. Parents H3 and C1 did not show training phase effects on this measure so discussion of maintenance is not relevant.

**Maintenance of Parent Use of Enthusiastic Expression**

The measures of rate per minute of parent use of enthusiastic expression are shown in Panel 3 of Figures 1 to 8.
Panel 3 of Figure 1 shows data on enthusiastic expression for Parent H1. The low rate of enthusiasm by Parent H1 evident at the end of the training phase continued through most of the Follow-up phase ranging between 0 and about 2 per minute. The final probe showed an uncharacteristically high rate of 13 enthusiastic contributions per minute. However, maintenance was not evident.

Panel 3 of Figure 2 shows data on enthusiastic expression for Parent H2. The overall levels of enthusiasm were higher in the Follow-up phase than during training and ranged between 9 and 18 per minute. There was a flat trend in the Follow-up phase data at this higher level indicating maintenance of this behaviour. The final probe at 21 was consistent with a maintained effect.

Panel 3 of Figure 3 shows enthusiastic expression data for Parent H3. Over the Follow-up phase the use of enthusiastic expression was consistent and ranged between 9 and 17 per minute although there was a slight downward trend. The final probe of 11 entusiasms per minute was at a level comparable to the improvements achieved in training and suggested that there was some maintenance of the behaviour by Parent H3.

Panel 3 of Figure 4 shows data on use of enthusiastic expression for Parent H4. During the Follow-up phase the level of enthusiastic expression remained at a high stable level and ranged between 10 and 15 per minute. Although no final probe was obtained, the data available suggest that the behaviour was maintaining for Parent H4.
Follow-up phase data on use of enthusiastic expression by Parent C1 is shown in Panel 3 of Figure 5. High and variable rates of use of enthusiastic expression were evident early in the Follow-up phase. Later in the Follow-up the level reduced giving a gradual downward trend over the phase and a range from 0 to 14. The final probe showed a rate of about three enthusiastic expressions per minute and thus was generally consistent with the reducing trend through the phase indicating that the behaviour was not maintaining.

Follow-up phase data on use of enthusiastic expression by Parent C2 can be seen in Panel 3 of Figure 6. There was a steep decreasing trend in use of enthusiastic expression across the Follow-up phase indicating that the behaviour was not maintaining. The range across this phase was 4 to 13. The final probe showed 4 enthusiastic expression per minute and was consistent with the downward trend.

Follow-up phase data on rate of use of enthusiastic expression by Parent C3 can be seen in Panel 3 of Figure 7. The enthusiasm rate showed a steadily decreasing trend across the Follow-up phase with measures ranging from 7 to 10 per minute. The final probe measures at 5, 4 and 0 were consistent with this downward trend and show the behaviour returning to baseline levels indicating that the behaviour was not maintaining.

Panel 3 of Figure 8 shows data on rate of use of enthusiastic expression by Parent C4. The Follow-up phase data shows a downward trend ranging between 3 and 9 enthusiastic expressions per minute. However, the final probe, at a rate of 6 enthusiastic expressions per minute, is still above
baseline levels and therefore is not consistent with the earlier Follow-up data. This suggests some maintenance in the increased use of enthusiasm by Parent C4.

Summary of Parent Maintenance of Enthusiastic Expression

Two of the four parents who were trained in their homes, Parent H2 and Parent H3, showed maintenance of their use of enthusiastic expression through the Follow-up phase compared to levels achieved in training. In the case of Parent H1, an increased use of enthusiastic expression was evident in the final probe. Further data would be required to determine if this maintained because earlier Follow-up data had shown a weak effect. Although the available Follow-up data for Parent H4 showed maintenance of the behaviour, the lack of a final probe meant this could not be confirmed. One of the parents trained in the clinic, Parent C4, showed maintenance of this behaviour through the Follow-up phase at levels achieved during training. Three of the four clinic-trained parents, C1, C2 and C3, showed reduced use of this skill relative to levels of use achieved in the training phase indicating that the behaviour was not maintaining for these parents.

Maintenance of Parent Use of Conversational Scaffolds

Percentage. The parents had shown high levels of use of conversational scaffolds in the baseline conversations. These levels continued through the training phase. In general, over the Follow-up phase the parents maintained
the proportion of scaffolds used relative to all of their conversational utterances as shown in Panel 4 of Figures 1 to 8. The one exception to this was in the data for Parent H2. One of the Follow-up measures showed a considerably lower percentage of scaffolds than was typical for this parent. This occurred because in this conversation, Parent H2 used a relatively high number of Yes/No type questions. Questions that require only a Yes/No response do not provide an opportunity for the child to provide an elaborated response nor do they model elaborated language. Therefore their excessive use was not considered desirable in this study. The high number of Yes/No questions in the total conversational utterances in this conversation by this parent pushed down the proportion of elaborating scaffolds.

*Number.* The Parents were encouraged to use the scaffolding behaviours of questioning and contributing as strategies for extending the duration of conversations. In using these language behaviours for longer periods of time it would be expected that the parents would use more words per conversation. Parallels therefore exist in the data on duration of parent talk, number of words used per conversation and number of scaffolds used per conversation. Data on the number of scaffolds used in conversations is presented as evidence of the extent to which the parents maintained use of these trained behaviours as the means by which they extended their part in conversations with their children. Panel 5 in Figures 1 to 8 shows data on the parents’ use of conversational scaffolds.
As can be seen in Panel 5 of Figure 1, the Follow-up data on number of scaffolds used by Parent H1 ranged between 5 and 68 and showed a downward trend. The final probe showed 37 scaffolds used and contrasted with this trend. This was at a level comparable to that achieved in training. Overall, the Follow-up data suggested that the behaviour was probably not maintaining for Parent H1.

Panel 5 of Figure 2 shows data on number of scaffolds used by Parent H2. There had not been any clear evidence of a training effect on this measure for Parent H2. There was a similar variable pattern in the Follow-up data and a range from 5 to 42 scaffolds. In the final probe 35 scaffolds were used. This compared favourably with the highest measures over both the training and Follow-up phases but maintenance cannot be determined from the available data.

Panel 5 of Figure 3 shows data on the number of scaffolds used by Parent H3. As with other measures, there had been no increase in the training phase on scaffolds used and therefore no gains to maintain. The increases evident in use of scaffolds by Parent H3 in the Follow-up phase, with measures ranging between 14 and 29, may represent a delayed training effect. The final probe, at 36 scaffolds, is the highest measure for Parent H3 and suggests that there may have been an eventual benefit for this parent.

Panel 5 of Figure 4 shows data on use of scaffolds by Parent H4. There was a strong increasing trend in Follow-up data, with measures ranging from 17 to 47, suggesting that Parent H4 was maintaining and possibly increasing
increasing the number of scaffolds per conversation. No final probe was obtained for this parent.

Data on the number of scaffolds used per conversation by Parent C1 is shown in Panel 5 of Figure 5. As there had been no increase during training for this parent, there were no gains to maintain. The data path remained flat over the Follow-up phase.

Data on the number of scaffolds used per conversation for Parent C2 can be seen in Panel 5 of Figure 6. Follow-up phase data shows a steady decreasing trend with a range between 16 and 50 scaffolds per conversation. The final probe, showing 23 scaffolds per conversation, is generally consistent with this suggesting that the training gains were not maintaining for Parent C2.

Parent C3 showed initial maintenance of training phase gains in use of scaffolding as shown in the Follow-up data in Panel 5 of Figure 7. Follow-up measures ranged between 25 and 32. However, in the final probe conversations the numbers of scaffolds used had dropped to near baseline levels suggesting that there had been only short term maintenance for Parent C3.

Early in the Follow-up phase, Parent C4 showed high levels of use of scaffolds, as can be seen in Panel 5 of Figure 8. Later in the Follow-up the number reduced to give a reducing trend in the data over this phase. Parent use of scaffolds ranged between 27 and 88. Despite this, the overall levels are
high in most of the Follow-up data. However, the final probe gave a measure of 18 scaffolds which was suggesting a return to baseline levels.

Summary of Maintenance of Parent Use of Conversational Scaffolds

One parent, H4, showed clear maintenance of increased number of scaffolds per conversation in the Follow-up phase data. Follow-up data for four parents, H1, C2, C3 and C4 showed that these parents did not maintain the gains achieved in training in increasing the number of scaffolds used in conversations. There had been no gains evident on this measure in the training phase for Parents H2, H3 and C1 so in these cases maintenance could not be demonstrated.

Summary of Maintenance for All Parent Measures

Visual analysis of all Follow-up phase data showed that only Parents H2 and H4 maintained the training phase increases in the duration of their talk in conversations with their children. Follow-up phase data for Parents H1, C2, C3 and C4 showed that they did not maintain their training phase gains on the measure of duration of parent talk. No improvement occurred in training for Parents H3 and C1.

The same pattern was evident in data on number of words used in conversations by the parents. Parents H2 and H4 maintained the increased number of words, Parents H1, C2, C3 and C4 did not maintain their training phase increases and Parents H3 and C1 had not made any gains during
training. The similarity in the data paths for these two measures indicates that parents were using words at their usual rate in the extended conversations. Having the parents talk faster was not an objective of this study.

Visual analysis of Follow-up data on parents' use of enthusiastic expression showed that Parents H2, H3, H4 and C4 maintained their increased levels. Parents H1, C2, C3 and C4 did not maintain the gains made in training.

Follow-up data on parents' use of the trained conversational scaffolds showed that the percentage used remained fairly constant for all parents. Parent H4 maintained increased number of scaffolds used per conversation. Parents H1, C2, C3 and C4 did not maintain this skill. Parents H2, H3 and C1 had not shown training effects on the measure of number of scaffolds.

On the two key measures, Duration of Parent Talk and Rate of Use of Enthusiastic Expression, there were 6 instances, out of a possible 16, in which maintenance of trained skills was demonstrated. On the measure of duration of parent talk, Parents H2 and H4 showed maintenance. On the measure of enthusiastic expression, Parents H2, H3, H4 and C4 maintained. Home-trained parents therefore showed maintenance in five of the six instances in which a trained skill maintained. This suggests an advantage, in terms of greater likelihood of parents continuing to use trained conversation facilitation skills after training has finished, of home-based training for parents.
Changes in Child Conversation Behaviours

The second research question related to effects, on the children's participation in conversations, of changing parents' conversational behaviours. The parents were the direct targets of training. The children participated in the training sessions with their children but no data was obtained in the training sessions. The parents were required to practice the skills trained, when they were in generalisation settings with their children, in the days between training sessions and over a post-training period and to record some of these conversations.

Data described in this section were obtained from the same tape-recorded conversations that provided the parent data. Two measures of child conversational behaviour are described; duration of child talk and number of words used per conversation. These two behaviours are not independent of each other and both are included because together they provide a more certain indication of child participation in conversations. Descriptions of the effects on the children across all phases, Baseline, Training and Follow-up (Post-training) including the Final Probe are presented together for each child. Comparisons are made with parent data in order to identify interactive effects in conversational behaviours.
Duration of Child Talk

Data on duration of child talk for Child H1 can be seen in Panel 1 of Figure 1. Baseline measures showed variation in the durations of talk time for Child H1 during recorded conversations and ranged between 5 and 45 seconds. Through the training phase a generally upward trend was evident in measures of child talk time in recorded conversations in generalisation settings with durations ranging from 7 to 51 seconds. The longest measures were evident following the later training sessions in which the objectives for the parents were to encourage elaboration of the topic and to keep the child talking about a single topic for a longer period. A clear reducing trend is evident in durations of child talk time through the Follow-up phase. However, the final probe shows an increase in duration of child talk to the levels evident at the end of the training phase. In each conversation Parent H1 always spoke for longer than Child H1 although there were close similarities in the trends in data paths for child and parent.

Data on duration of child talk for Child H2 can be seen in Panel 1 of Figure 2. Baseline measures showed some variations in duration of child talk per conversation for Child H2 with duration ranging from about 6 to 23 seconds. Through the training phase most durations of child talk continued at about baseline level until the last training session, with one exception (the fourth training phase conversation). The only obvious explanation for the considerable increase in duration of child talk in this conversation seems to be that the conversation topic was a train ride and this child did have a
particular interest in railway trains making frequent reference to them during a number of recorded conversations. The objective of the final training session was to encourage the parent to keep the child talking about the topic of the conversation for as long as possible thus the increases in duration of child talk in the last conversations in the training phase probably resulted from this. The eventual upward trend in duration of child talk per conversation continued through most of the post-training measures. In the final probe duration of child talk remained at a level consistent with the upward trend. There were strong parallels in the data paths for Parent H2 and Child H2.

Panel 1 of Figure 3 shows data on duration of child talk for Child H3. Baseline measures showed durations between about 5 seconds and 28 seconds. Although child talk time showed increases relative to baseline in the weeks following the first two training sessions, there was a regression towards baseline levels over the latter part of the training phase. Substantial increases in duration of child talk occurred in the Follow-up phase and continued in the final probe. All data closely paralleled trends in the parent data.

Baseline measures of child talk for Child H4 showed durations between about 2 and 12 seconds as shown in Panel 1 of Figure 4. Durations remained at a similar level through most of the training phase and then showed increases in the last conversations in this phase giving a range across the phase from 3 to 37 seconds. In the final training session, emphasis was
particularly on parents maintaining conversation topics for longer times so a direct effect is evident. This increasing trend in duration of child talk at the end of the training phase continued strongly through Follow-up. No final probe data was obtained. There were similarities in the data paths for Parent H4 and Child H4 and both showed increasing trends in duration of talk. However, data for this dyad showed a progressively widening gap between parent and child data paths.

Child H4 had obtained the lowest scores on the initial measures of child language and expressive language skills were quite limited. It appeared that, in order to sustain conversational interaction, Parent H4 used high numbers of scaffolds to provide greater structure to the language experience for this child who showed substantial delay in language skills. For example, a succession of questions in a conversation at the end of the training phase included; ‘Whose car did you go in?’, ‘What colour is Mary’s car?’, ‘What did you do at Mary’s?’, ‘What were the children’s names?’, ‘Who else did you play with?’, ‘What did you draw the picture of?’, ‘What did Garth do at Mary’s?’.

Data on duration of talk for Child C1 are shown in Panel 1 of Figure 5. Baseline measures of duration showed Child C1 mostly talking for around 20 seconds and in one case about 45 seconds. Despite small increases evident in duration of child talk early in the training phase, durations remained at around baseline levels through most of this phase. The trend in early Follow-up measures was of increasing durations of child talk but later
Follow-up measures had a decreasing trend. The final probe showed a small increase. Child C1 data closely paralleled that of Parent C1.

Panel 1 of Figure 6 shows data on durations of child talk for Child C2. Baseline durations were between about 4 and 17 seconds. Durations were variable but increases were evident and a continuing gradual upward trend occurred over the training phase. The increased durations generally maintained through the Follow-up measures with a range between 21 and 99 seconds over this phase. The final probe, at 29 seconds confirmed a flat trend over all post-training measures. Close similarities were evident in parent and child data paths.

Data on duration of child talk for Child C3 can be seen in Panel 1 of Figure 7. Baseline durations of talk per conversation for Child C3 were between 2 and approximately 6 seconds. A substantial increase in child talk time was immediately evident following the first training session and continued at increased levels through the whole training phase ranging between 6 and 44 seconds. Initially in the Follow-up phase durations of child talk continued at levels approximating the training phase increases. However, the final probe measures suggested that durations were decreasing and close to baseline level. Data paths for Parent C3 and Child C3 generally paralleled each other.

Panel 1 of Figure 8 shows data on duration of talk per conversation for Child C4. Baseline measures of duration of child talk were between about 5 and 25 seconds. Following some initial variability, durations of child talk in
mid and later stages of the training phase showed some consistency at increased levels. While the increased durations maintained in initial Follow-up measures, the later Follow-up and final probe measures of duration of child talk showed substantial decreases.

*Child Words per Conversation*

Child H1 spoke between 15 and 95 words during baseline conversations as can be seen on Panel 2 of Figure 1. Through the training phase the number of words the child spoke were mostly similar to baseline levels with a small number of conversations near the end of this phase in which the child spoke more. The range was 17 to 131 words. This gave a slightly rising trend in the data through the phase suggesting some interaction effect between parent and child. A slightly reducing trend in data for the child was evident through most of the Follow-up phase with a range from 13 to 112 words. There was an increase in the final probe to 138 words. These trends generally followed those in the parent data.

Child H2 spoke between 11 and 58 words per conversation through the baseline as shown in Panel 2 of Figure 2. There was little change in the training phase although there were interactions with the parent data in that the conversations in which the child used a greater number of words were also those in which the parent used more. The range in the training phase was 12 to 86 words. During the Follow-up phase Child H2 showed a very
slight increasing trend in words used per conversation that approximately paralleled the trend for Parent H2.

Child H3 spoke between 13 and 43 words per conversation during baseline as shown in Panel 2 of Figure 3. The level of child words across the training phase was similar to baseline levels and ranged from 14 to 59. In the Follow-up phase there was a substantial initial increase in the number of words used by the child with a range from 68 to 106 words. Follow-up phase data generally paralleled that of the parent and there was an overall flat trend across the phase.

Child H4 spoke between 7 and 15 words per conversation over the baseline as shown in Panel 2 of Figure 4. As the training phase progressed, Child H4 began to use more words per conversation and the trend across the phase showed a very slight rise. This trend continued across the Follow-up phase where the range was 21 to 65 words. Although there was a slight increase overall in child words, the divergence between child and parent data that had been evident in the measures of duration of talk was also evident here.

Child C1 spoke between 34 and 137 words per conversation over the baseline phase as shown in Panel 2 of Figure 5 and, as with the parent data, the trend through the training phase was flat. The Follow-up phase trend showed a very slight rise although in one conversation the number of words used by both the child and the parent substantially exceeded the general level. The range in the Follow-up phase was 30 to 141 words. Through all
phases there were strong parallels between parent and child data suggesting interaction effects.

Child C2 used between 4 and 36 words per conversation through the baseline. The training phase data showed an overall rising trend, as can be seen in Panel 2 of Figure 6, with a range from 11 to 192 words. The words per conversation spoken by the child during the Follow-up phase showed a flat trend with a range from 42 to 164 words. Through all phases there was a consistent correlation between the number of parent words and the number of child words per conversation.

Child C3 used between 3 and 14 words per conversation during baseline then showed a substantial rise immediately in the training phase and a gradual increasing trend over the phase as shown in Panel 2 of Figure 7. The range in the training phase was 13 to 119 words. In the early stages of the Follow-up phase the number of child words per conversation remained at a steady level then showed a reduction in the final probe measures. Over all phases there were strong parallels between parent and child words.

Child C4 used between 13 and 25 words as shown in Panel 2 of Figure 8 and, as with the parent data, there was a slight upward trend in the baseline measures. The training phase data continued to show the increasing trend but appeared to be at a slightly higher level than the baseline data path. As with the parent data, there was some initial increase in child words per conversation in the Follow-up phase but the later measures during this phase were showing decreased numbers of child words per conversation.
giving a reducing trend over the phase. There were strong parallels between the numbers of parent and child words across all phases.

*Summary of Measures Child Conversation Behaviours*

Visual inspection of the data in Panel 1 of Figures 1 to 8 shows strong interactions between duration of child talk and duration of parent talk. In all cases, the data paths for the parents were above those for the children indicating that the parents were generally talking for longer in conversations than the children. This was to be expected because the children’s language skills were delayed and they were learning conversation skills. It would be hoped that in the longer term, if language delays were overcome, a pattern of shared conversational time would develop. When the parents increased the time they spent talking in conversations, there were reciprocal effects for their children. Similarly, when parents reduced the time they spent talking, child talk time also reduced.

In the case of Dyad H4, although the reciprocal effects were also evident, there was some divergence in the data paths for the parent and the child. As noted, there is a possibility that Parent H4 provided relatively greater amounts of conversational talk time because of the greater language delay in Child H4.

It was expected that there would be strong similarities between the measures of duration of talk and number of words spoken in conversations and this was evident when data on number of words used was examined.
These two sets of data are provided in support of each other. Considered together, they allow the clear conclusion that when the parents spent greater amounts of time talking, the children experienced greater exposure to and use of language. In this study the language was the type relevant to conversational interaction about past events because of the significance of this as a language learning experience for young children.

Changes in Child Language

The third research question related to the effects of the parents being trained in different settings on the children’s performance on a set of language measures. The results of the assessments of child language are shown in Table 8. Scores on each measure have been converted to age equivalent months using the norms for the instruments used, or using conventional procedures for determining this in the case of mean length of utterance. Also shown on Table 8 are the gains in months made on the respective measures by each child between baseline and final assessments and the total time each child was involved in the programme.

On the Reynell Verbal Comprehension Test (Reynell, 1977) the children of the clinic-trained parents tended to show greater gains than the children of the home-trained parents. Although the trend appears the other way on the Peabody Picture Vocabulary Test (Dunn, 1981) results, there is really insufficient data from this measure to permit useful comparisons.
### Table 8

Age equivalence of children's scores on language measures, gains on language measures and time in the programme - all figures in months.

<table>
<thead>
<tr>
<th></th>
<th>Pre Baseline</th>
<th>Post Follow up</th>
<th>Gain</th>
<th>Time in Programme</th>
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<tr>
<td><strong>Reynell Verbal Comprehension Test</strong></td>
<td></td>
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<tr>
<td>H1</td>
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<td>5.0</td>
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<tr>
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<td>6.0</td>
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<tr>
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<th>Baseline</th>
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<th>End of Follow up</th>
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<tr>
<td>C4</td>
<td>27</td>
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</table>

| **Mean length of utterance** | H1       | 25.30           | 30.00            | 33.20            | 7.9    |
| H2                       | 23.00    | 28.40           | 30.80            | 7.8              |
| H3                       | 28.40    | 34.00           | 36.40            | 8.0              |
| H4                       | 22.00    | 23.00           | 25.30            | 3.3              |
| C1                       | 26.10    | 35.60           | 37.90            | 11.8             |
| C2                       | 26.90    | 30.00           | 28.40            | 1.5              |
| C3                       | 27.70    | 35.60           | 30.80            | 3.1              |
| C4                       | 36.40    | 37.90           | 38.30            | 1.9              |
The assessment of syntactic complexity was carried out at three points over the duration of the programme. It needs to be noted that the age equivalence scores for this measure are reported as the centre age of six-month age bands. Reference to age bands is realistic in reflecting the accuracy of assessments particularly of young children, therefore the single age references in the syntactical complexity scores reported in Table 8 need to be interpreted with appropriate caution.

At the end of the training phase results for the children of home-trained parents tended to show smaller improvements, compared to the baseline assessments, than those for the children of clinic-trained parents. However, assessments near the end of the Follow-up phase showed greater improvements, relative to the measures at the end of training, for the children of home-trained parents than for those of clinic-trained parents. The overall gains between baseline and final assessments also tended to show greater gains for the children whose parents received home training.

The length of utterance measures showed a similar pattern to those for syntactic complexity. These were derived from the same language samples. Compared to baseline assessments, the improvements at the end of training tended to be smaller for the children of home-trained parents than for those of clinic-trained parents. However, assessments at the end of the Follow-up phase generally showed the strongest results for the children of home-trained parents. The overall gains between baseline and final assessments
similarly tended to show greater effects for these children than for those whose parents were trained in the clinic.

**Relationship between Child Language Outcomes and Parent Maintenance of Trained Skills**

On the key variables related to the training; duration of parent talk and parent use of enthusiasm, Parents H2, H3, H4 and C4 demonstrated maintenance of the increased levels achieved in training. These can be related to the language measure outcomes for the children of these parents to provide an indication of related effects, excluding the Peabody Picture Vocabulary Test because a full data set is not available. When results in Table 8 for the children showing accelerated gains are examined, it is evident that Child H2 achieved acceleration on two measures (syntax and length of utterance) Child H3 achieved acceleration on two measures (syntax and length of utterance), Child H4 achieved acceleration on two measures (Reynell and syntax) and Child C4 achieved acceleration on two measures (Reynell and syntax). In addition, and despite their parents not maintaining use of these key behaviours, Child H1 and Child C1 showed acceleration on three measures (Reynell, syntax and length of utterance), Child C2 showed acceleration on one measure (Reynell) and Child C3 showed acceleration on one measure (syntax).

Within these results for the children the strongest gains, indicated by amount of accelerated gain, are evident for Child H3 (syntax and length of
utterance), Child H4 (Reynell and syntax), Child C1 (Reynell, syntax and length of utterance) and Child C4 (Reynell). The parents of three of these four children, H3, H4 and C4, had shown maintenance of trained conversation behaviours. This suggests that when parents continue to use higher levels of conversational behaviours, there is a likelihood of greater positive impact on their children's language development.

Further, it is evident from examination of all child data on gains on the Reynell, syntax and length of utterance in Table 8, that the children whose parents were trained in their homes achieved accelerated gains across a greater number of these child language measures. This suggests that there is greater likelihood of some gain in children’s language development when their parents are trained in their homes.

Figure 9 shows, in graphed form, the Baseline, End of Training and End of Follow-up scores on the measure of syntactic complexity for each child from Table 8. These make somewhat clearer the differing effects over the Follow-up phase for the home-dyad and clinic-dyad children. Examination of these needs to take account of the fact that the single score age equivalents shown are the centres of six-month age bands. However, it is evident that three of the home-dyad children, H2, H3 and H4 tended to continue to progress on this measure over the Follow-up phase. While all of the clinic-dyad children had shown progress on this measure in the training phase, none showed the extent of improvement in the Follow-up phase that was evident for the home-dyad children.
Figure 9  Baseline, end of training and end of follow-up age equivalent scores in months on the measure of syntactic complexity for home-dyad and clinic-dyad children.
Figure 10 shows, in graphed form, the Baseline, End of Training and End of Follow-up scores on the mean length of utterance measure for each child as shown in Table 8. It is evident that all four of the home-dyad children continued to progress over the Follow-up phase on this aspect their language development. One of the clinic-dyad children, Child C1, showed increased utterance length over the Follow-up phase and the other three did not continue to progress.

In the findings described earlier on maintenance by the parents of trained conversational behaviours, it was evident that there had been stronger effects for the parents who had received home-based training. When this is considered along with the findings on the children’s language development, it would seem that it can be cautiously concluded that there may be some advantage in providing home-based training, rather than clinic-based training, in conversation facilitation skills for parents of young children.
Figure 10 Baseline, end of training and end of follow-up age equivalent scores in months on the measure of mean length of utterance for home-dyad and clinic-dyad children.
CHAPTER SIX
DISCUSSION

Hart and Risley (1995) have identified quantity of exposure to talk as the strongest factor differentiating levels of vocabulary development in young American children. The present study was an attempt to increase the amount of conversational interaction between parents and children in order to provide the children with exposure to a greater quantity of conversational language, and to measure the effects of this experience on the children’s language development.

The study involved the implementation of a parent-training programme with individual parents and their children, and the observation of resultant changes in parent conversational behaviours and child language behaviours in generalisation settings after the training had finished.

Training of Parents

Content of Training

The training experiences of parents were closely similar with respect to the behaviours trained, the order in which these were trained and the activities used within each training session. Trialing of the training programme in a Pilot Study with the trainer present and the preparation of a Training Manual helped ensure consistency across dyads in this aspect of the training programme.
The programme involved training the parents in the use of a specific set of conversation facilitation behaviours. However, in order to encourage wide use of these, the trainer used loose teaching with respect to the particular instructional examples employed as suggested by Stokes and Baer (1977) and Stokes and Osnes (1989). Parents reported on the activities that had occurred between training sessions that might provide appropriate topics for conversations with their children. Some of these were used within the training sessions but it was also expected that being required to consider these topics would loosely prompt parents to initiate conversations on similar topics when away from the training setting as suggested by Sanders and Dadds (1982).

Procedural reliability data was not collected during training with each parent so training integrity cannot be confirmed. It was assumed that adherence to the training manual would ensure consistent implementation. It is possible however, that there were variations in the training experiences of parents that influenced their acquisition of the skills. Procedural reliability data might have assisted with interpretation of training phase data for the parents who did not show training effects. In future studies of this type the collection of procedural reliability data is recommended. This could be obtained by an observer being present during a proportion of the training sessions or through videotaping sessions for analysis.

The key skills identified for training were selected because of their likely impact on the duration of parent-child conversations, the associated amount
of parent talk and the language experienced and used by the children. The parents were trained to provide their children with positive interaction experiences, and with questions and contributing statements that would assist in scaffolding the oral recounting of past events.

**Enthusiastic Expression**

The affect shown in a parent's response to a child's behaviour is likely to be a significant aspect of the consequence experienced by the child. With regard to language use in the current study, affect was seen to be within the manner of the parents' responses - with enthusiasm signalling interest in, and valuing of, statements made by the child. It was assumed that enthusiasm might function as a positive reinforcing consequence for the child and encouraging parent to use increased enthusiastic expression was introduced in the first training session because of its potential to influence children's willingness to engage in conversational interaction for longer periods as suggested by Wells (1981) and Smith (1992). This proved to be a rather subjective behaviour to quantify and this is reflected in the relatively low percentage of inter-observer agreement for this measure. Despite the low inter-observer agreements, enthusiastic expression did seem to be a trainable and generalisable behaviour and there was an immediate impact on conversation duration for three parents, H1, H3, and C3, following the training of this skill.
Scaffolding

Two types of scaffolds were trained: questioning and contributing, as suggested by Peterson (1990) and Smith (1992).

Questioning. One of the consequences of children having delayed language skills is an inability to continue a topic of conversation (Yoder, Davies, Bishop & Munson, 1994). Providing assistance to children through the use of scaffolding questions was intended to increase topic-continuing and lead to both increased use of language by the child as well as increased exposure to parent language (Peterson, 1990). Yoder et al. (1994) also found that scaffolding in the form of topic-continuing questions used by adult interactors in a research context lead to children being more than twice as likely to continue participation in a conversation on the same topic. The current study has demonstrated that both an increased level and generality in parents use of questions can be achieved, at least with most subjects, through the training of questioning skills.

As children's language develops to a stage where the mean length of utterance moves beyond 3.00, they enter a phase where there is sufficient skill to expect that they will make an increasing number of independent contributions to conversations (Yoder et al. 1994), and will consequently require progressively fewer prompts. Three of the children in the current study, H3, C1 and C4, progressed over the duration of the present study to a level where their mean utterance length exceeded 3.00. As this independence
developed it might be expected that the children would contribute a relatively greater proportion of each conversation and that this would result in converging data paths for the parent and the child on the measures of duration of talk and number of words spoken. Some convergence on these measures may be evident in the Follow-up phase parent and child data for Dyad C1. None is evident for Dyads H3 and C4. Longer intervention and follow-up periods might be necessary to identify strong effects of this kind.

**Contributing.** Parent's contributions to conversations were intended to provide models for their children of the way in which conversations are constructed when talking about familiar topics, and to provide exposure to a greater amount of elaborated adult language within a context which was meaningful to the child (McCabe & Peterson, 1990). Hart and Risley (1995) observed that all of the parents in their study included the quality features that influence the richness of the language used with their children. However, the professional parents talked more and this increased the amount of experience their children had with the quality features of language. The language abilities of the children who had experienced greater amounts of language in this way during their first three years, were more advanced than those of children who had experienced less. Furthermore, Hart and Risley observed that the advantages were still evident in levels of accomplishment at age 9 to 10 years.
Five of the eight parents began to use an increased number of scaffolds per conversation following training and began to engage in longer conversations as a result. As a percentage of total talk, the number of scaffolds (questions and contributions) remained much the same for each parent throughout the study. This was because the parents had generally been using high levels of scaffolding with their children in the baseline conversations and the purpose of training was only to encourage use of these for longer periods of time.

The children's experience of conversation scaffolding by their parents, to elaborate conversations, represents a qualitative aspect of language experience similar to the quality features identified by Hart and Risley (1995). The training did not primarily set out to change the quality of the parents' language with their children. The objective was to increase the quantity of language used.

*Duration of Training*

There were some variations across dyads in the number of weeks of involvement in the training programme and in the Follow-up phase. The minimum number of training sessions was five. Training was extended for two parents, H1 and C3, in an attempt to improve performance levels with respect to use of enthusiastic expression and scaffolding questions. For a third parent, H3, an extra week was taken so that more recorded conversations could be obtained. Although these were the only planned
extensions to the training phase, in fact for all but one dyad, H4, the actual span of the training phase typically involved an extra two or three weeks. This came about because of factors such as child illness, other family commitments and equipment problems. Maintenance intervals varied from 7 weeks to 17 weeks across dyads with the variations occurring mainly in the time between the initial set of follow-up measures and the final probe. These differences came about because of varying opportunities of the researcher to set up the follow-up contact with the parents because of work commitments.

These variations could have provided some parents with more practice opportunities than others. The amount of parent-child conversation occurring from week to week was not measured in the present study. The absence of data on the amount of conversational interaction represents a serious weakness in the present study that would need to be addressed in future studies of this type.

Standardisation of the maintenance period and having parents record the numbers of conversations per day would have given some control on this factor despite Rogers Weise's (1992) cautions about parent self-report data. Without information about the number of parent-child interactions as well as their duration, the results obtained in the present study cannot be interpreted with confidence. For example, Child C1 showed substantial improvement on the measures of syntactic complexity and mean length of utterance by the end of the study even though the conversations of Parent C1 changed little as a result of training. The present study assumed that the
recorded conversations would be a representative sample of all conversations but this may not have been the case. It is possible that Parent C1 facilitated more frequent, rather than longer, conversations as a result of training. Before proceeding with further research in this area it would be essential to ensure that adequate resourcing was available to allow the collection of data on the amount as well as the duration of parent-child conversations to provide validation of the main data sources.

Training Setting

The central research question examined in this thesis concerned whether the setting in which training took place, home or clinic, would have an influence on the parents' continued use of skills acquired during training after the training had ceased. To measure the effects of training setting on maintenance required that the training produce similar changes in the conversational behaviours of both the clinic-trained parents and the home-trained parents.

The training was effective with most parents but not with all. Although not all parents improved in training, it was felt that there was sufficient change in the conversational behaviours of both sets of parents at the end of training to address the maintenance questions.

The failure of the programme to make changes in some parents' conversational skills might have been caused by variations in training. While it was assumed that adherence to a training manual would ensure
consistency, this might have been insufficient. In terms of the programme content, the fact that strong training phase effects were achieved with some parents attests to its potential for bringing about changes in parent conversational behaviour.

As noted in the discussion on duration of training, a lack of data on the extent to which parents practiced the skills trained at times other than when tape-recording conversations also represents a weakness with regard to assessing training phase effects. It seems very likely that the more parents rehearsed the trained skills when in the generalisation settings after the training sessions, the greater would be their fluency in the use of the skills in the recorded conversations. Conversely, where there had been less rehearsal this would probably lead to less use in the recorded conversations.

The relative influences of these factors in the extent to which parents demonstrated improvement on each of the trained skills at the end of training is difficult to determine completely. It is possible that the differences in the extent to which parents showed increases in the trained skills in the recorded conversations were caused by differences in the amounts of practice parents were engaging in when in generalisation settings during the training phase. Data on frequency of practice would have assisted with interpretation of the weak training outcomes for some parents and, as noted above, help to explain some inconsistencies in the present results.
Generalisation

The parents who received clinic training tended to acquire and use the new skills in the generalisation settings (which were all home settings) during the training phase at least as well as those trained in their homes. This may have been because there was a deliberate attempt in the present study to make the clinic setting as informal as possible by ensuring that it was furnished to resemble a living area in a home as suggested by Forehand and Atkeson (1977). This similarity in the physical stimuli may have facilitated generalisation of trained skills from training settings to generalisation settings for those parents who were clinic-trained.

Parent Maintenance of Trained Skills

The research questions investigated in the present study arose from the concerns repeatedly expressed in the literature that intervention programmes had given little emphasis to encouraging parents to maintain their use of trained skills in ongoing interactions with their children once training programmes had been completed (e.g. Graziano & Diament, 1992; Serketich & Dumas, 1996). The present study was designed to address this issue.

The effects of training at the start of the post-training period were most marked for the clinic-trained parents. If strong training effects result in higher levels of maintenance then it would be expected that the clinic-
trained parents may show stronger maintenance over the post-training period. However, changes generally did not sustain as well over the Follow-up for the clinic-trained parents as they did for the parents who were trained at home. This finding provides an answer to the first research question. It is evident that, in the case of conversation facilitation skills with young children, a training programme with parents implemented in the home setting is more likely to lead to the parents continuing to apply skills with their children beyond the end of the training period.

Results on the key measures of duration of parent talk and parent use of enthusiastic expression show that the parents who received training in their homes were more likely to continue to use the trained skills after the training had ceased. Parents H2 and H4 showed maintenance on duration of parent talk. Parents H2, H3, H4 and C4 showed maintenance on the measure of enthusiastic expression.

General support for an hypothesis that home-based training would lead to better maintenance comes from discussion on factors influencing the maintenance of behaviour change (e.g. Stokes & Baer, 1977; Stokes & Osnes, 1989). In particular, Stokes and Osnes argued that functional mediators, which may be physical, verbal or social, common to both training and post-training settings have a facilitating effect on the maintenance of trained behaviours.

In the current study, the requirement that the parents record conversations over the post training period is likely to have served as a
strategy for fading the intervention in addition to this being a data collection procedure. To structure this requirement to give a more progressive reduction in tape-recording requirements over the Follow-up period may have assisted the parents’ maintenance of their newly acquired conversation facilitation skills. This effect would be the same for both sets of parents and therefore cannot be used to explain the observed difference in the maintenance exhibited by the clinic and home-trained parents.

Changes in Child Language

In this study, the parents undertook training with their own children. It was also expected that they would practice the skills discussed in training with their children in the days between training sessions (and tape-record samples of these conversations) and that this could have an effect on their children’s language production and, possibly, development. Over the training phase there had been an effect on the children’s participation in conversations and on their language development. Therefore, continuing to monitor the impact on the children’s language use and development would provide a strong indicator of parents’ maintenance of conversation behaviours.

Words Per Conversation

As parent training proceeded, three of the children whose parents were trained at home showed increases in words per conversation. Three of those
whose parents were trained in the clinic showed increases which were
generally of a greater magnitude than those for the home-trained children.
At the end of the Follow-up phase two of the children in the home trained
set - Child H2 and Child H4, showed further increases while the
improvements of the three children in clinic dyads that had shown
improvements in the training phase, had ceased to increase.

The results for Dyads H2 and H4 are significant in the present study.
These parents were in most cases using the trained skills to increase
conversation duration, they were using a greater number of words per
conversation and their children were, as a consequence, talking more. This
tended to happen to a greater extent in the case of these home-trained dyads
than in the case of the clinic-trained dyads. This data provides an answer to
the second research question. A marginally stronger result on the measures
of quantity of conversational experience by children was achieved for
children in the home-trained dyads. The effects were very similar for the
measures of duration of child talk and number of child words.

This result is similar to the results obtained by Landon and Sommers
(1979) and Hart and Risley (1995). Maintenance can be brought about through
programming for this to occur, through factors such as requiring homework
assignments from parents (Stokes & Baer, 1977; Stokes & Osnes, 1989) and
incorporating common stimulus conditions into training and generalisation
settings. However, it is more likely to occur when training takes place in the
natural contexts in which it is intended that the new behaviours will be used
- as shown by the home-trained dyads and as previously observed by Hart and Risley (1980).

On the measure of quantity of talk (words used per conversation) the factor most clearly understood, in terms of beneficial effects on outcomes, is that 'more is better' (Hart & Risley, 1995). No single optimum level of production was aimed for across all of the children in the present study.

Although it is not known how much language the children experienced, it is very clear, when data paths are compared, that the more the parents spoke in conversations in the training phase, the more their children spoke. The children therefore experienced hearing a greater quantity of language and using a greater quantity. This was determined through measures of the duration of talk and supported by measures of the number of words used.

Outcome performances for the children probably varied because their baseline performances varied. Obviously the interactional, turn-taking nature of conversation means that the child must share the activity with another participant, in this case a parent. As the child's oral fluency develops they become increasingly able to independently construct more of a narrative and to elicit more from other participants in terms of quantity and complexity (Girolametto, Greenberg & Manolson, 1986). This should lead to natural, functional, maintaining contingencies for parents' conversation behaviour, that is increased amounts of child talk, operating on the parents (Stokes & Baer, 1977; Stokes & Osnes, 1989).
There is an assumption that the taped examples provided by parents throughout the training phase were representative of all conversations between parent and child. As previously noted with regard to parent data, the reality is that individual differences in the extent to which parents practiced the trained skills are not known and therefore the amount of exposure of individual children to increased conversational interaction is also not known. There were no data obtained on total quantity of children's conversation experience with their parents. For some dyads it is likely that the recorded conversations represent only a small sample of their conversational interaction and for others they could represent nearly all such interactions. This problem was identified by Sanders and James (1983) and has not been overcome in the present study.

Obtaining such data in reliable form in an applied setting would be quite challenging. Self-report data from the parents could be acquired most economically. However, self-report data on interaction frequency is unlikely to be reliable (McPherson, Skok & McLaughlin, 1990). Alternatively, such data could be obtained through constant recording of all parent language through each day perhaps with a voice activated recording mechanism. This method would produce a large quantity of data that would be costly to process. A third method might be to have a research assistant present with the parent through the day to observe and record the particular interactions of interest. The costs associated with employing an observer for this purpose would again be substantial. Despite any such difficulties, it is now known
that interaction frequency is a key determinant of child language
development (Hart & Risley, 1995) so this is a problem that has to be solved.
The procedures outlined must be considered for use in future research in
order to ensure the interpretability of results.

Child Language Measures

There appears to be a correlation between the quantity of talk that
children engage in and performance on measures of linguistic ability (e.g.
Landon & Sommers, 1979). Those children who are typically more talkative
tend to achieve higher scores on assessments of linguistic ability. This
observation is consistent with findings on the value of repeated practice as a
component to learning processes to ensure development of performance that
will maintain and be fluent (Binder, 1996; White & Haring, 1980). In the
current study a central objective was to provide parents of children who had
delayed language skills with strategies which would bring about an increase
in the amount of talk the parents and the children would engage in during
conversations about topics meaningful to them, so that there would be
increased opportunity for the children to hear and practice new language
skills.

The extent to which this was happening was obviously related to the
amount of time engaged in conversation. There were strong correlations
between parent talk as discussed above, and child measures of duration. In
addition to duration of talk, the number of words children used in
conversations in generalisation settings was counted as the programme proceeded. The additional assessments of children's language development provided a further test of the generality of changes in quantity of child talk.

Reynell Verbal Comprehension Test and Peabody Picture Vocabulary Test

The Reynell Verbal Comprehension Test (Reynell, 1977) and Peabody Picture Vocabulary Test (Dunn, 1981) were administered as pre- and post-programme measures. Both are measures of receptive language. Their usefulness as part of pre-programme screening assessment was mixed. One child (H1) showed age appropriate functioning on the Reynell Verbal Comprehension Test but delays on other measures. No such inconsistency between measures was evident for any other children. Child H1 still showed accelerated gain on this test in the post-programme assessment despite the pre-test score indicating age appropriate verbal comprehension.

Scores on the Peabody Picture Vocabulary Test were not obtained for three children (H1, H2, C1) because of a lack of cooperation in the test situation in the case of one child and because of unreliability of responses in the other two cases. In all cases these children were early entrants to the programme. This test requires children to scan four drawn pictures and identify, by pointing, the one which matches the stimulus word given orally by the tester. The test norms extend to children below two years of age. Child C1 scored in this range on other measures and performed unreliably on the Peabody Picture Vocabulary Test therefore may have had insufficient
language skill to handle the requirements of test performance. An explanation for lack of cooperation or unreliable performance is not so evident for the other two children. The age equivalence of scores on the Peabody Picture Vocabulary Test for four children, from Dyads 3 and 4 from each set, were included with the results. These were in the direction of other data, in terms of conclusions made about effects of training setting. However, no further analysis has been carried out, of relationships between these results and parent behaviours following training, because of missing data.

The first five children to enter the programme were all assessed by the same Speech Language Therapist. However, the final three children to enter the programme were assessed by a different Therapist because of a staff change at the clinic where the assessments were carried out. Although it would have been desirable to have all children assessed by the same person, this change was unavoidable. Administration of both tests requires testers to follow standard administration procedures so it is most likely that any effect of a change in personnel would be minimal.

On the Reynell Verbal Comprehension Test, two of the children in the home-trained set (H1 and H4) and three in the clinic-trained set (C1, C2 and C4) showed accelerated gains in scores represented as months of age equivalence. With respect to the key measure of duration of parent talk, Parents H1, H2, H4, C2, C3 and C4 showed improvements during training. Parents H2 and H4 maintained their improvements in the post-training
period. On the key measure of enthusiastic expression, Parents H3, H4, C1, C2, C3 and C4 showed improvements during training. Parents H2, H3, H4 and C4 maintained their improvements post training.

The clearest links between parents' improved use of conversation facilitation behaviours and children's performance on the Reynell are evident for Dyads H4 and C4 because these parents improved as a result of training and maintained their improvements post training. In contrast however, Parents H2 and C3 showed strong training effects but their children did not show accelerated progress on the Reynell Verbal Comprehension Test. The pattern of these results is somewhat mixed and no clear relationship to training setting is evident.

The Reynell Verbal Comprehension Test is a standardised instrument and it was administered by skilled personnel therefore the results obtained are likely to be reliable. The inconsistencies in relationships between the results on this measure and data on experience in conversational interaction over the duration of this study may have been explainable if interaction frequency data had been available.

*Syntactic Complexity and Mean Length of Utterance*

Data that formed the basis of these two assessments were derived from language samples obtained pre-, mid- and post-programme. They are both measures of expressive language ability.
Three of the children in the home-trained set (H1, H3 and H4) and three in the clinic-trained set (C1, C3 and C4) showed accelerated gains, relative to change in chronological age, over the duration of the programme on the measure of syntactic complexity. (The one-month gain for Child H2 is within the age band from which the score was derived so the gain is not considered significant.)

It is of interest to note the stages at which the gains took place. Three of the home-trained set showed some gain on mid-programme (End of Training) assessments - H1, H3 and H4, and three continued to show further gain on post-programme (End of Follow-up) assessments - H2, H3 and H4. In contrast with this pattern, all four children in the clinic-trained set showed gains on the mid-programme assessments but no further gain on post-programme assessments of syntactic complexity.

There were similarities to this in the pattern of results of assessments of mean length of utterance. All four children in the home-trained set showed gains on the mid-programme assessment and all showed further gains on the post-programme assessments of mean length of utterance. All four of the children in the clinic-trained set also showed gains on mid-programme assessments. Only two - C1 and C4, showed further gains post-programme and the other two showed some regression in post-programme measures relative to those at mid-programme.

Over the duration of the programme, all four children in the home-trained set showed accelerated gains on the measure of mean length of
utterance, relative to change in chronological age, while only one child in the clinic-trained set - C1, showed such acceleration on assessment of mean length of utterance. Interpretation of these results is complicated by the fact that Child H4 showed the lowest syntactic complexity score in baseline measures and therefore might have had greater potential for development. Conversely, Child C4 showed the highest mean length of utterance in the baseline measures and therefore might have had less potential for change over the duration of this programme. The baseline results on these measures for all other children were generally within comparable ranges.

In the context of the present study, the child language assessment results were considered to be a valid indicator of parent use of skills. This data provides a tentative answer to the third research question. Taking into account the cautions noted above for Child H4 and Child C4, the results still show considerably stronger outcomes over the post-training period on the language development measures for the children from the home-trained dyads. In terms of these important measures, the home setting as a training setting shows clear advantages in terms of beneficial effects on the children's language development.

The children's results on the language measures tended to show somewhat stronger improvements for those children who were talking more and whose parents were also talking more and thus using the trained skills in greater quantities. Reciprocal effects are likely to be taking place in the interactions where the natural maintaining contingencies of greater
quantity and quality of child talk reinforce parent responsiveness and participation in conversations.

Reliability of Measures of Child Performance

Reliability checks were not carried out on the measures of child language. In the case of the Reynell Verbal Comprehension Test and the Peabody Picture Vocabulary Test, immediate readministration by a second Speech Language Therapist would not have been appropriate because this would have introduced a practice effect to the standardised scores. Data provided in the manual of the Reynell Verbal Comprehension Test indicates split half (odd-even) reliabilities of .90 for the age range two and a half to three and a half years, and .78 for the age range four to five years. The manual for the Peabody Picture Vocabulary Test gives a reliability, determined from delayed retest on alternate forms, of .78 and a standard error of six raw score points for the age range three years to four years and eleven months. These age ranges relate to the children in the present study.

The measures of syntactic complexity and mean length of utterance were derived from samples of children's conversational language. They therefore contrast with the standardised measures in that they represent data obtained in somewhat more naturalistic circumstances for the children. Reliability checks were not carried out on the assessments of syntactic complexity and mean length of utterance. This is a weakness in the present study.
Conclusions and Implications

The results of the present experiments appear to give some support to the provision of home-based training of parents where the aim of training is to achieve maintenance in the use of some particular interaction strategies to encourage language use by parents and children. Although the clinic-trained parents tended to demonstrate greater immediate use of the trained skills in generalisation settings, the data showed that this initial advantage was not maintained once training ceased. In this study the advantages to the children and the parents who were trained in their homes became evident in the measures of maintenance.

Two of the home-trained parents maintained their use of longer conversations while none of the clinic-trained parents maintained longer conversations over the Follow-up period. Three of the home-trained parents continued using improved levels of enthusiastic expression over the post-training period while one of the clinic-trained parents maintained improved use of enthusiastic expression. The children of the home-trained parents tended to continue to show improvement on the measures of syntax and utterance length over the Follow-up period while the clinic-trained children were less likely to show further improvement. It seems reasonable to conclude that the continuing improvements on the language measures made by children in the home-trained set are to some extent a consequence of their parents continued use of the strategies trained for increasing parent
and child talk in conversations. However, alternative explanations are possible.

The results obtained indicated that the approach to training utilised in this study was sufficiently effective to provide at least a partial answer to the research questions. The parents who were trained in their homes showed somewhat more sustained use of trained skills and this had a more positive impact on their children's language than was the case for parents trained in the clinic.

The child subjects in the present study had mild levels of language delay. Any conclusions drawn from the findings therefore have the greatest relevance to other children with similar needs, and their parents. The findings may have an implication for therapists providing similar kinds of interventions with families. If replicated, the results of the present study have a possible implication for remedial work with children who have delayed language. Delivery of language related programmes to parents in home contexts may add some strength to maintaining the effects of the interventions and thereby produce optimal benefits for children with language needs. Only one previous study appears to have attempted a comparison of home and clinic as training settings (Eiserman et al., 1992). Although no parent data were obtained in that study, the benefits for the children were similar to those in the present study.
REFERENCES


## APPENDIX ONE

*Table of experimental effects for individual subjects in studies reviewed*

<table>
<thead>
<tr>
<th>Authors</th>
<th>Measures</th>
<th>Training Effects</th>
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**Children**
1. MLU,
2. Total words,
3. Novel words,
4. Frequency of requests.

3. Consequences.

**Children:** Pre to post change in:
1. Language Age (months),
2. Communication scores (percentage correct).

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2. Missing data for J

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<th>L</th>
<th>M</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>- 1</td>
<td>+ 28</td>
<td>+ 43</td>
<td>+ 34</td>
<td>+ 33</td>
<td>+ 48</td>
<td>+ 23</td>
<td>+ 29</td>
<td>+ 31</td>
<td>+ 37</td>
<td>+ 26</td>
<td>+ 31</td>
<td>+ 24</td>
</tr>
</tbody>
</table>


**Parents:** Frequency of:
1. Facilitation behaviours (ratings),
2. Responsive Behaviours (ratings),
3. Interaction behaviours (ratings).

**Pre to post change**

<table>
<thead>
<tr>
<th>Parents:</th>
<th>1. A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>I</th>
<th>J</th>
</tr>
</thead>
<tbody>
<tr>
<td>(10/10 at pre-test)</td>
<td>+ 0</td>
<td>+ 3/10</td>
<td>+ 2/10</td>
<td>+ 6/10</td>
<td>+ 2/10</td>
<td>+ 2/10</td>
<td>+ 3/10</td>
<td>+ 0/10</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Children:**

1. Phonological consistency in repeats of same words (missing data for E and I).
2. Total phonological errors (for children using multiword utterances at pre-assessment).
3. Number of utterances (for children using single or no words at pre-assessment).

<table>
<thead>
<tr>
<th>Children:</th>
<th>2. A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>I</th>
<th>J</th>
</tr>
</thead>
</table>

**Children:**

1. A + 31.5% | B + 28% | C + 21.5% | D + 33% | F + 25% | G + 30%

**Children:**
A range of phonological, grammatical and social data were obtained but not reported in this review.
1. Receptive communication,
2. Expressive communication.

**Children:** Pre to post change in group mean developmental quotients.
1. Home +11.1
   Clinic +10.6
2. Home +8.0
   Clinic +6.9

---

Hemmeter & Kaiser (1994).

**Parents:** Frequency of use of:
1. environmental arrangement,
2. feedback to child,
3. model child language targets,
4. use of incidental teaching.

**Parents:** Ratio of treatment to baseline data.
1. A x 1.73
   B x 1.40
   C x 1.45
   D x 1.20
2. A x 2.13
   B x 2.15
   C x 1.83
   D x 1.76
3. A x 8.25
   B x 9.0
   C x 2.71
   D x 2.0
4. A x 4.0
   B x 5.0
   C x 4.0
   D Net effect x12.0

**Children:** Frequency of use of:
1. child specific language targets,
2. spontaneous communicative utterances,
Pre to Post change:
3. Receptive language.
4. Expressive language.

**Children:** Net effects.
1. A x 12.0
   B x 11.0
   C x 4.25
   D x 2.50
2. A x 2.33
   B x 1.52
   C x 1.25
   D x 2.10
3. A x 2.0
   B x 3.0

---

**Parents:** Generalisation to home. Pre to post change.
1. A x 1.0
   B x 1.16
   C x 1.28
2. A x 1.83
   B x 2.15
   C x 2.00
   D x 1.87
3. A x 7.00
   B x 2.66
   C x 1.70
   D x 2.14
4. A x 1.00
   B x 1.00
   C x 1.00
   D x 5.00

---

**Parents:**
Not assessed

---

**Children:**
Pre to post change.
1. A x 13.30
   B x 3.66
   C x 2.69
   D x 3.81
2. A x 5.19
   B x 1.24
   C x 3.44
   D x 3.66

**Children:**
Generalisation not assessed for 3, 4, 5

---

**Parents:**
Not assessed
5. MLU
6. Number words used in 30-minute language sample.

<table>
<thead>
<tr>
<th></th>
<th>C x 3.0</th>
<th>D x 1.0</th>
</tr>
</thead>
<tbody>
<tr>
<td>4. A x 1.25</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B x 1.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C Missing data</td>
<td></td>
<td></td>
</tr>
<tr>
<td>D x 0.83</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. A x 1.07</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B x 1.25</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C x 1.02</td>
<td></td>
<td></td>
</tr>
<tr>
<td>D x 0.95</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. A x 2.68</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B x 3.23</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C x 6.75</td>
<td></td>
<td></td>
</tr>
<tr>
<td>D x 1.23</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Parent: Rate per minute of:
1. questions,
2. statements,
3. rewards,
4. demands,
5. punishment.

Parent: Ratio of level of treatment data relative to baseline. 3 measures taken in the 10 minutes following each training session.

<table>
<thead>
<tr>
<th></th>
<th>x 9</th>
<th>x 6</th>
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</thead>
<tbody>
<tr>
<td>1</td>
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<tr>
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<td>4</td>
<td>x 1</td>
<td></td>
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<tr>
<td>5</td>
<td>x 2</td>
<td></td>
</tr>
</tbody>
</table>

Children:
1. One word utterances.
2. Two word utterances
3. Three word utterances

Parent: No data
Children: Not assessed.

Parent: Frequency of use of:
1. Environmental arrangement,
2. Milieu teaching (using mand-model, time delay, incidental teaching)

Parents: Net effects for group/clinic training.

<table>
<thead>
<tr>
<th></th>
<th>A x 7.5</th>
<th>B x 2.8</th>
</tr>
</thead>
<tbody>
<tr>
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<td>5</td>
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</tbody>
</table>

Parents: Continued effects for individual, home training.

<table>
<thead>
<tr>
<th></th>
<th>A x 7.5</th>
<th>B x 2.8</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
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<tr>
<td>2</td>
<td></td>
<td></td>
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<tr>
<td>3</td>
<td></td>
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</tbody>
</table>

Children:
1. Frequency of prompted use of targets.
2. Frequency of spontaneous use of targets.
3. Frequency of responsiveness to parent teaching

Parents: Rate per minute of:
1. questions,
2. statements,
3. rewards,
4. demands,
5. punishment.

Parent: Ratio of level of treatment data relative to baseline. 3 measures taken in the 10 minutes following each training session.

<table>
<thead>
<tr>
<th></th>
<th>x 9</th>
<th>x 6</th>
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</thead>
<tbody>
<tr>
<td>1</td>
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<tr>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>x 1</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>x 2</td>
<td></td>
</tr>
</tbody>
</table>

Children:
1. One word utterances.
2. Two word utterances
3. Three word utterances

Parents: No data
Children: Not assessed.

### Parents: Frequency of:

1. Semantic feedback to child,
   - A1 \( \times 3.34 \)
   - A2 \( \times 3.28 \)
   - B1 \( \times 1.78 \)
   - B2 \( \times 1.51 \)
   - C1 \( \times 3.47 \)
   - C2 \( \times 4.09 \)
   - C3 \( \times 1.85 \)
   - D1 \( \times 1.88 \)
   - D2 \( \times 3.10 \)

2. Modelling of child language targets,
   - E1 \( \times 2.71 \)
   - E2 \( \times 1.58 \)
   - E3 \( \times 2.81 \)

3. Not following child's lead (Reduced measure desirable).
   - A1 \( \times 2.05 \)
   - A2 \( \times 5.07 \)
   - B1 \( \times 10.55 \)
   - B2 \( \times 24.50 \)
   - C1 \( \times 115.00 \)
   - C2 \( \times 13.96 \)
   - C3 \( \times 72.00 \)
   - D1 \( \times 2.05 \)
   - D2 \( \times 1.63 \)
   - E1 \( \times 2.25 \)
   - E2 \( \times 8.75 \)
   - E3 \( \times 3.52 \)

### Children: Frequency of:

1. Spontaneous use of language targets,
   - A1 \( \times 2.05 \)
   - A2 \( \times 5.07 \)
   - B1 \( \times 10.55 \)
   - B2 \( \times 24.50 \)
   - C1 \( \times 115.00 \)
   - C2 \( \times 13.96 \)
   - C3 \( \times 72.00 \)
   - D1 \( \times 2.05 \)
   - D2 \( \times 1.63 \)
   - E1 \( \times 2.25 \)
   - E2 \( \times 8.75 \)
   - E3 \( \times 3.52 \)

2. Child initiated utterances:
   - A1 \( \times 6.00 \)
   - A2 \( \times 0.05 \)
   - B1 \( \times 0.20 \)
   - B2 \( \times 0.04 \)
   - C1 \( \times 0.08 \)
   - C2 \( \times 0.06 \)
   - C3 \( \times 0.30 \)
   - D1 \( \times 0.04 \)
   - D2 \( \times 0.13 \)
   - E1 \( \times 0.03 \)
   - E2 \( \times 1.33 \)
   - E3 \( \times 0.07 \)

3. MLU:
   - A1 \( \times 5.30 \)
   - A2 \( \times 0.10 \)
   - B1 \( \times 1.60 \)
   - B2 \( \times 0.80 \)

### Parents: Pre to post change:

1. A1 \( \times 3.05 \)
   - A2 \( \times 2.13 \)
   - B1 \( \times 1.20 \)
   - B2 \( \times 3.80 \)
   - C1 Missing data
   - C2 \( \times 2.29 \)
   - C3 \( \times 3.28 \)
   - D1 \( \times 1.60 \)
   - D2 \( \times 1.15 \)
   - E1 \( \times 2.71 \)
   - E2 \( \times 2.17 \)
   - E3 \( \times 5.27 \)

2. A1 \( \times 1.78 \)
   - A2 \( \times 5.50 \)
   - B1 \( \times 16.00 \)
   - B2 \( \times 96.00 \)
   - C1 Missing data
   - C2 \( \times 3.04 \)
   - C3 \( \times 12.00 \)
   - D1 \( \times 1.96 \)
   - D2 \( \times 1.25 \)
   - E1 \( \times 2.16 \)
   - E2 \( \times 55.00 \)
   - E3 \( \times 2.39 \)

### Parents: At 6-month follow-up:

1. A1 \( \times 1.85 \)
   - A2 \( \times 1.50 \)
   - B1 \( \times 1.57 \)
   - B2 \( \times 1.71 \)
   - C1 Missing data
   - C2 \( \times 0.90 \)
   - C3 \( \times 0.77 \)
   - D1 Missing data
   - D2 \( \times 0.69 \)
   - E1 \( \times 1.03 \)
   - E2 \( \times 1.24 \)
   - E3 Missing data

### Children:

1. A1 \( \times 4.00 \)
   - A2 \( \times 0.00 \)
   - B1 \( \times 3.00 \)
   - B2 \( \times 0.50 \)

2. A1 \( \times 5.29 \)
   - A2 \( \times 0.90 \)
   - B1 \( \times 0.62 \)
   - B2 \( \times 1.11 \)
   - C1 Missing data
   - C2 \( \times 2.00 \)
   - C3 \( \times 0.26 \)
   - D1 Missing data
   - D2 \( \times 0.60 \)
   - E1 \( \times 0.40 \)
   - E2 \( \times 0.80 \)
   - E3 Missing data

3. A1 \( \times 0.18 \)
   - A2 \( \times 10.00 \)
   - B1 \( \times 3.12 \)
   - B2 \( \times 13.75 \)
<table>
<thead>
<tr>
<th></th>
<th>C1</th>
<th>C2</th>
<th>C3</th>
<th>D1</th>
<th>D2</th>
<th>E1</th>
<th>E2</th>
<th>E3</th>
</tr>
</thead>
<tbody>
<tr>
<td>C1</td>
<td>2.20</td>
<td>5.83</td>
<td>3.30</td>
<td>2.84</td>
<td>17.34</td>
<td>30.34</td>
<td>1.75</td>
<td>2.39</td>
</tr>
<tr>
<td>C2</td>
<td>2.50</td>
<td>2.50</td>
<td>10.00</td>
<td>4.67</td>
<td>21.00</td>
<td>19.00</td>
<td>0.00</td>
<td>2.00</td>
</tr>
<tr>
<td>C3</td>
<td>2.50</td>
<td>1.54</td>
<td>1.10</td>
<td>1.93</td>
<td>1.68</td>
<td>1.52</td>
<td>2.30</td>
<td>3.17</td>
</tr>
<tr>
<td>D1</td>
<td>1.10</td>
<td>1.40</td>
<td>1.20</td>
<td>1.50</td>
<td>1.40</td>
<td>1.67</td>
<td>1.40</td>
<td>1.33</td>
</tr>
<tr>
<td>D2</td>
<td>0.88</td>
<td>1.08</td>
<td>0.84</td>
<td>0.83</td>
<td>1.16</td>
<td>1.02</td>
<td>1.24</td>
<td>1.17</td>
</tr>
<tr>
<td>E1</td>
<td>0.91</td>
<td>1.20</td>
<td>0.84</td>
<td>1.16</td>
<td>1.02</td>
<td>1.24</td>
<td>1.17</td>
<td>1.94</td>
</tr>
<tr>
<td>E2</td>
<td>0.83</td>
<td>1.63</td>
<td>1.20</td>
<td>1.00</td>
<td>1.00</td>
<td>1.25</td>
<td>1.42</td>
<td>1.20</td>
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</tbody>
</table>

2. A1 x 4.31  
A2 x 3.52  
B1 x 1.54  
B2 x 1.10  
C1 x 7.20  
C2 x 1.93  
C3 x 1.68  
D1 x 1.52  
D2 x 2.30  
E3 x 2.03  
E3 x 2.04  
E3 x 2.04  

3. A1 x 1.00  
A2 x 1.20  
B1 x 1.20  
B2 x 1.67  
C1 x 1.20  
C2 x 1.20  
C3 x 1.33  
D1 x 1.50  
D2 x 1.40  
E1 x 1.67  
E2 x 1.33  
E3 x 1.42  

4. A1 x 1.25  
A2 x 0.88  
B1 x 1.40  
B2 x 1.50  
C1 x 0.83  
C2 x 1.14  
C3 x 2.00  
D1 x 1.25  
D2 x 1.33  
E1 x 1.00  
E2 x 1.42  
E3 x 0.91  

5. A1 x 1.40  
A2 x 1.08  
B1 x 1.20  
B2 x 0.84  
C1 x 1.16  
C2 x 1.02  
C3 x 1.24  
D1 x 1.17  
D2 x 1.94  
E1 x 0.83  
E2 x 1.63  
E3 x 1.20  

No generalisation for measures 3, 4, and 5.
<table>
<thead>
<tr>
<th>Study</th>
<th>Parents: Parent data collapsed into one measure of number of milieu strategies used</th>
<th>Parents: Net effect</th>
<th>Data not shown</th>
<th>Not assessed</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>B x 25</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>C x 33</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>A x 0</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>B x 5</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>C x 5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>McConkey &amp; O'Connor (1982)</td>
<td>Parents: Pre, post and follow-up 10-minute audiotaped interactions during play at home (3 tapes per family) were coded. 1. Number of declarative statements, 2. Number of utterances of 3 words or less, 3. Number of responses to child speech or actions.</td>
<td>Parents: Pre to post change. Mother and Father data given separately. 1. Mothers +14% Fathers +10% 2. Mothers +27% Fathers +13% 3. Mothers +18% Fathers +6%</td>
<td>Pre and post assessments based on data obtained in generalisation (home) settings. Four-month follow up. Post test to follow up change in median percentage. No data for fathers 1. Mothers -2% 2. Mothers No change 3. Mothers -8%</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>B x 17.0</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>D x 20.0</td>
<td></td>
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</tr>
<tr>
<td></td>
<td></td>
<td>E x 1.7</td>
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<tr>
<td></td>
<td></td>
<td>F x 6.5</td>
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<tr>
<td></td>
<td></td>
<td>G Net effect x 4.9</td>
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</tr>
<tr>
<td></td>
<td></td>
<td>H x 7.2</td>
<td></td>
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</tr>
<tr>
<td></td>
<td>Children: Frequency of: Vocalizations (imitations, answers, spontaneous speech).</td>
<td>1. A x 0.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>B x 10.0</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>C x 17.0</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>D x 20.0</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>E x 1.7</td>
<td></td>
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<td></td>
<td></td>
<td>F x 6.5</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>G x 0.0 (Baseline trend continued.)</td>
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<tr>
<td></td>
<td></td>
<td>H x 6.9</td>
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<tr>
<td></td>
<td>Children:</td>
<td>1. A x 1.4</td>
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<tr>
<td></td>
<td></td>
<td>B x 2.7</td>
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<td></td>
<td></td>
<td>C x 5.5</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>D x 2.4</td>
<td></td>
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<td></td>
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<td>E x 2.1</td>
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<tr>
<td></td>
<td></td>
<td>F x 1.4</td>
<td></td>
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<td></td>
<td></td>
<td>G x 1.5</td>
<td></td>
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</tr>
<tr>
<td></td>
<td></td>
<td>H x 1.5</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Parents: No data obtained on parent behaviour.

Children: Pre to post change. Ratio of months of language gain to months passed.

1. A x 1.60
   B x 0.00
   C x 0.00
   D x 1.60
   E x 0.80
   F x 0.80
   G x 0.80
   H x 0.80
   I x 1.60
   J Missing data
   K x 1.60

2. A x 0.00
   B x 0.80
   C x 0.80
   D x 0.00
   E x 1.60
   F x 0.00
   G x 1.60
   H x 1.60
   I x 0.00
   J Missing data
   K x 2.00

Pre to post percent change.

A + 38
B + 11
C + 9
D + 6
F + 43
G + 12
H - 1
I + 0
(100 at pre-test)
J + 29
K + 6

Post to follow-up percent change.

A + 17
B Missing data
C + 6
D Missing data
E Missing data
F + 12
G +0 (100 at post-test)
H + 14
I + 0 (100 at post-test)
J - 10
K + 0 (100 at post-test)

4. A + 53
   B Missing data
   C + 47
   D Missing data
   E Missing data
   F + 41
   G + 27
   H + 14
   I - 17
   J + 1
   K + 13

Children: 12 month post-test to follow-up change.

1. A x 0.67
   B Missing data
   C x 1.00
   D x 0.33
   E Missing data
   F x 1.67
   G x 0.33
   H x 1.33
   I Missing data
   J Missing data
   K x 1.00

2. A x 1.00
   B Missing data
   C x 0.33
   D x 1.00
   E Missing data
   F x 1.33
   G x 0.66
   H x 0.33
   I Missing data
   J x 1.33
   K x 1.00

3. Post to follow-up percent change.

A + 17
B Missing data
C + 6
D Missing data
E Missing data
F + 12
G +0 (100 at post-test)
H + 14
I + 0 (100 at post-test)
J - 10
K + 0 (100 at post-test)

4. A + 53
   B Missing data
   C + 47
   D Missing data
   E Missing data
   F + 41
   G + 27
   H + 14
   I - 17
   J + 1
   K + 13

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APPENDIX TWO

Pre-Programme Information to Parents and Consent Form
Parents as Early Language Teachers - Encouraging Children's Narratives

Information about the project

This programme is a research project which is being carried out under the supervision of the University of Canterbury. The programme is sponsored by the McKenzie Foundation through a research grant made to the Christchurch Methodist Mission. The Child and Family Services section of the Methodist Mission administers the grant.

The research is being conducted by Barry Newcombe whose principal supervisor is Dr Kathleen Liberty of the Education Department, University of Canterbury. Barry is a registered psychologist and teacher and is currently a psychologist with the Special Education Service. The programme coordinator and research assistant is Yvonne Penman. Yvonne has a background in teaching and currently works as a social worker/family therapist with the Methodist Mission.

The people we hope will be involved in this programme are parents of preschool children whose language development is delayed. We believe that parents are usually the best teachers of their young children where there are particular needs of this kind.

The aim of the project is to try to find out if helping parents at home or helping parents in a clinic makes any difference to; a) how quickly parents begin to use skills talked about in training, b) how much parents continue to use those skills after training has finished, and c) changes in the child's language. In the future, this information may be useful in deciding how other families can be helped.

Some parents who take part will therefore be seen in their homes and some in a clinic in Harewood Road.

Research procedures usually require that when people are to be treated in different ways, as mentioned above, then they must be randomly put into each kind of training. This means that neither the parents nor the researchers choose who is to be trained in the clinic and who at home. This has to be decided in some other way, e.g. throwing a coin. An exception to this may occur if there is a need to make changes to ensure that there are equal numbers receiving 'home' and 'clinic' training.

Where someone is to attend training sessions in the clinic but has transport problems, then assistance with this will be arranged.
What we agree to do

1. We will arrange for your child's language to be assessed by a Speech/Language Therapist. The first assessment will be to check on how much her/his language is delayed. Further assessments will be arranged at later stages in the project to check on development of language. There will be no cost to you.

2. We will arrange for your child's hearing to be assessed by an Audiologist. This is to check that there is no long term hearing problem which might have caused the language delay. Again, there will be no cost to you.

3. We will provide a training programme to you which will involve a series of 30 to 40 minute sessions once per week, until certain kinds of conversational language have increased. It is expected that this will take between five and ten sessions - although this is only an approximate indication. Further training will be offered, within six months of the first sessions, if benefits of training do not last. The training programme will be provided at no cost to you.

4. To monitor language used, we will ask you to record conversations with your child and return the tapes to us. At intervals through the programme we will offer you reinforcers for providing these tapes. These could be offers of child-care time, small vouchers of various kinds or grocery items.

As the tapes are returned to us, we will code the language which they contain. This information will enable us to monitor changes in your language and your child's language, and tell us if the training programme is having an effect. Once information has been coded from the tapes, then it will be anonymous and only those directly involved with the project will be able to identify families, unless you give approval to others. All of the tapes will be kept and stored securely at the home of the researcher.

What you agree to do

1. Allow your child's language to be assessed at times throughout the project.

2. Allow your child's hearing to be assessed.

3. Receive training in weekly sessions either in a clinic or at your home.

4. Provide us each week with three recorded conversations between yourself and your child. (The tapes and taperecorder will be provided for you to use free of cost.) Because the whole project is about language use,
we need to have a constant flow of examples of language used in your conversations in a range of places. The whole period over which we need tapes will be quite long. It will start about two weeks before the training programme starts, continue through the training period and carry on for at least a month of follow-up after training has finished. This is about 3 months.

Taking part in each step of training and follow-up will be important. Obviously if a crisis arises, such as you or one of your children becomes sick, then a training session could be missed and training continue the week later. However, keeping going with recording conversations right through the project is an important commitment.

Your Rights

You have the right to:
- ask questions about the project at any stage and have them answered
- refuse to take part in the project
- withdraw from the project at any time without any penalty
- be protected from stress
- be treated with respect and dignity
- have access to all papers and reports written about the project
- have all records which identify your family treated as confidential.

---------------------  ---------------------
Barry Newcombe       Yvonne Penman
Researcher           Programme Coordinator
Consent Form for Parents/Caregivers

Parent's name ______________________

I understand the purpose of the Parents as Early Language Teachers project as described in the information sheet provided (Parents as Early Language Teachers - Encouraging Children's Narratives).

There has been no coercion to participate in any part of this programme and I understand that I am free to withdraw at any time including withdrawal of any information provided.

1. I consent to my child having assessments of language development.

2. I consent to my child having a hearing assessment.

3. I consent to receiving training either at my home or in a clinic.

4. I consent to publication of the results with understanding that anonymity will be preserved.

__________________________
(Parent/Caregiver to sign)

___________ Date

When you have had enough time to consider this project, please return this form by mail, in the envelope provided, either signed or unsigned. If unsigned we will assume that you do not wish to take part.
## APPENDIX THREE

### Coding Form

**Subject:**

**Date:**

**Topic:**

**Setting:**

<table>
<thead>
<tr>
<th></th>
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<tbody>
<tr>
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<td></td>
<td></td>
</tr>
<tr>
<td><strong>Time</strong></td>
<td></td>
<td>Total time</td>
</tr>
<tr>
<td><strong>Percentage time</strong></td>
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- Use this symbol to code any statement below which is said with *enthusiastic expression*.

<table>
<thead>
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<tr>
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<td>Questions about actions</td>
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</tr>
<tr>
<td></td>
<td>Questions to clarify and refine comprehension</td>
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</tr>
<tr>
<td></td>
<td>Statements showing understanding and attention</td>
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</tr>
<tr>
<td><strong>Inhibitors</strong></td>
<td>Critical &amp; perfunctory statements</td>
<td></td>
</tr>
<tr>
<td><strong>Yes/No questions</strong></td>
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<tr>
<td><strong>Uncoded</strong></td>
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APPENDIX FOUR

Trainer's Manual
Introduction
This programme is about helping parents, whose preschool children have delayed language skills, to learn new ways of encouraging their children to use more language.

Where delays can be identified at early stages in development then opportunities exist to attempt to reduce these delays in ways which are natural. When delays in development become more severe then the interventions required become more intensive and intrusive on a family's usual pattern of activity. When delays persist for longer periods they can impact on other aspects of development and learning. In the case of language delay this impact is most noticeable in the areas of literacy skills and social development.

The focus of this programme is on training parents in the use of strategies which they can use to encourage their children to recount past experiences. The construction by children of oral narratives about real events in which they have been involved is regarded as a particularly important language skill. This kind of language skill requires the child to make use of memory in the recall of events, to apply knowledge about language, to consider the listener's perspective and provide adequate detail about the context of the experience, and to sequence information. These language behaviours are at least some of those which a child is required to use when reading for meaning, when writing, as well as in oral language.

Before commencement of this programme, parent participants will have received an explanation of the process in general terms and will have provided tape recordings of five or more conversations about past
experiences with their child who has delayed language. Data obtained from these tape recordings are used as baseline measures.

It needs to be emphasized that this programme does not advocate that past events are the only worthwhile topic of conversation between parents and their children. Indeed, the greatest proportion of linguistic interaction between parents and their young children is most appropriately about immediate 'here and now' topics and 'functional' matters. However, when these latter types are the only language experiences young children have, then there may be some risk that they will not be adequately prepared to handle all of the demands of reading skill acquisition on entry to school.

Content
The programme is organized to provide individual family training sessions in five skill areas. Each area is identified as a separate training objective.

Objective one: Showing encouragement and enthusiasm towards their children's narratives.
Objective two: Identifying where and when there are natural opportunities in the daily routine to talk to their child.
Objective three: Initiating topics and asking questions.
Objective four: Staying on a topic.
Objective five: What to do when their child tries to end a narrative prematurely.

Organization
The programme can be delivered in clinic situations or in homes. All sessions are for individual families: parents and their own children. Sessions are of about thirty minutes duration. The exact number of training sessions is not
prescribed as parents are likely to take differing amounts of time to acquire and apply the skills. Continuing training until mastery levels are achieved is more likely to improve parents' skills than a predetermined number of sessions which may terminate training before skills are useful.

A component of each training session is an informal activity such as; having a snack, preparing vegetables, threading a necklace. This will provide a convenient reason for parents to give to children to explain why the family is together with the trainer. The nature of the activities should be such that they replicate some routine or otherwise familiar family activity in order to assist the transfer of skills trained from the training setting to generalization settings. There is no other link between the nature of the activity and particular objectives at each stage of the programme.

Once the training programme has commenced with the introduction of the first skill objective, further objectives are introduced only when analysis of tapes containing narratives recorded over the week following a training session shows that target parent behaviours are consistently showing improved performance on the conversation behaviours across generalization settings in the home and community.

**Parents Earn Child Care**

During each week of involvement with the programme, parents are required to provide a tape containing three separate conversations about a past experience, with their child. Parents will earn fifteen minutes of child-care-time for each tape properly completed. This time can accumulate and when time earned totals two hours then a thirty-minute-bonus is allocated. It is hoped that this will be an incentive for providing tapes as requested.
Training Process

The training process is set out in the form of stages covering each of the training objectives. The number of training sessions which a parent has within each stage is not defined because rates of attainment of target behaviours may vary. Training sessions are to occur at weekly intervals.

Each parent's level of performance on the current target behaviour will be determined from data obtained from tapes of narratives carried out in generalization settings over the week following the most recent training session. Parents will be asked to make these tapes available the day before their next session so it will be possible to make a decision in advance on the content of that session. Where improved performance is evident across all generalization settings, then training is to shift to a new stage. When improved performance is not evident, then the associated parent behaviours are to continue to be given emphasis in training. The training session to follow will be structured to provide further opportunities to practise these previously introduced target behaviours.

Performance Outcomes for the Parents

Levels of performance and rates of change will be dependent on levels at the start of the programme (baseline levels).
For the skill of using encouraging and enthusiastic responses, the expectation is that performance show an increasing trend over the training period.

Performance on objective two is to be assessed on the basis of parents reports on the generalization settings in which narratives take place outside of
training. The expectation is that the conditions and activities going on at the
time be naturally occurring ones for the particular family and not contrived.

Expected outcomes for objectives three, four and five are that length of
conversations (measured through the duration and the number of words) will
show an increasing trend over the training period a substantial increase by
the end of that period.
I: Teaching Encouraging Behaviours.
Activity: snack time and tidy up - biscuits and drink

1. Introduce and explain objective one. Parents will be encouraging and enthusiastic (not correcting and criticizing) in response to their children’s narrative attempts.

Explanation to include the following points:
# children are pleased to obtain the interest and attention of their parents.
# the more that children talk, the more opportunities they have to learn about language.
# the way that parents respond to children’s talk has a very direct effect on the quality of that talk.
# children learn in a constructive way from feedback about the things they do well.
# when parents show interest and attention this usually leads to an increase in the child’s talkativeness.
# this interest and attention can be shown in a variety of ways.
# showing understanding of what has been said through repeating the child’s meaning signals interest in the child’s statement.
# an enthusiastic manner in the way that understanding is shown, provides powerful feedback to the child on the level of interest and attention in their stories.
# too much correcting of the way that children talk (their pronunciation, the order of words or the content) usually leads to children becoming less talkative.

2. Ask parents to identify two topics to talk about later this session.
3. Provide the parent with a take-home brochure summarizing key points related to objective one.

4. Where possible, during the explanation make specific reference to examples of encouraging and enthusiastic responses by the parent, evident in tapes of baseline narratives.

5. Initiate a conversation with the child using one of the topics provided by the parent. Model all skills, but particularly encouraging and enthusiastic responses. The examples are to include:

   - commenting on the 'tone' of the child's statement e.g. "... funny!"
   "...fascinating!"
   "... sad."

   - repeating a child's statement with an enthusiastic voice quality e.g. "He ate a great big piece!!"

   - confirming comments or questions made with an enthusiastic voice quality e.g. "Did she really!!"

6. Encourage the parent to talk with his/her child to practise the target response. During the parent's conversation with their child, provide specific positive comments, or note examples and comment later, to the parent on use of encouragement.

7. Provide parents with a new audiotape for use recording narratives with their child in generalization settings over the following week.

8. Session closure. Confirm date and time of next training session. Confirm arrangements for collection of tapes from the home.
(The tapes containing narratives from generalization settings are to be collected from parents prior to the next session so that data on use of the target behaviours can be obtained and feedback given to parents at the next session. Parents will be asked to leave the recorded tape in their letter box by 9am on the day before their next session date.)
II. Identifying Times and Topics for Talking.

[Activity: Peeling vegetables or fruit]

1. Give feedback to the parent on data obtained from the tapes recorded over the previous week of the parent's use of encouraging behaviours in the generalization settings.

2. Ask parent to identify two topics to talk about later in the session.

3. Introduce and explain objective two. Parent will identify and use natural opportunities, within regular routines, to talk with their child about the child's past experiences.

Explanation to include the following points:

# there are many times in the day when a parent and a child are near to each other because of the nature of the activity at the time (e.g. driving in the car, walking home from daycare, having a bath, helping with dressing, mealtimes together, tucking into bed, weeding the garden, washing dishes).

# using these times to start a conversation can be easier on parents than trying to find or create a special time for such conversations.

# when a special time has to be found, often conversation just does not happen.

# when this is the case, the child may end up having fewer opportunities to talk.

# when children return from having been away from home or parents they will often be eager to talk about their experiences while away.

# past experiences which can be topics for conversation include relatively minor, ordinary events, such as walking home or playing in the sandpit, as well as major outings, such as a birthday party or a trip to the zoo.

4. Provide the parent with a brochure of key points related to objective two.
5. Ask parent to identify three or four sets of circumstances in their home routine where conversation would be possible.

6. Initiate a conversation with the child about the snack time activity from the previous session or a topic identified earlier by the parent. Model all skills.

7. Parent to practise talking to their child while working together on a task. Narrative topic to be one earlier identified by the parent.

8. During this practice phase, give specific feedback to the parent on use of encouraging and enthusiastic responses to child statements, or note examples and provide feedback at the end of the narrative.

9. Provide parent with a new audiotape for use recording narratives with their child in generalization settings over the following week. Ask the parent to give a brief description, on the tape at the end of each narrative, of the physical setting (location only) and the activity in which he/she was involved when the topic was initiated. (e.g. 'in the car - driving to friend's place', 'in the dining room - doing the ironing'.)

10. Session closure.

At the start of the next training session parents will be asked to identify three different settings in which narratives occurred. This includes the parent being engaged in different activities at the time the conversational topic is initiated as well as the physical setting being different in each case. Self report by the parent is required here.
III. Asking Questions.

Activity: Threading to make a necklace - or a similar constructing activity which the child sometimes does at home and enjoys.

1. Give positive feedback to the parent on data obtained from tapes, recorded over the previous week, of narratives in generalization settings.

2. Ask the parent to identify two topics for later in the session.

3. Introduce and explain objective three. Parents will generate a range of relevant questions about a decontextualized topic which will help their child to construct a narrative.
   Explanation to include;
   # once a topic has been initiated, give the child time to gather their thoughts and construct statements themselves.
   # while the child is talking about the topic do not interrupt with a question.
   # using questions as prompts can provide children with more opportunities to talk about the topic and encourages them to include more elaborate information.
   # the first prompt questions should seek elaboration of contributions the child has most recently made.
   # the next most appropriate are questions which seek information on who was involved and where events took place.
   # then follow questions about what things were present in the situation and what happened.
   # the next most appropriate question types ask the child’s opinion about the experience or some aspect of it (e.g. "Do you think it was a big tree or a small one?"; "What did you think when that happened?")
# not all types of prompt questions will need to be used if the child has
previously initiated the contribution of the relevant information.

4. Provide the parent with a brochure of key points related to objective three.

5. Initiate a topic with the child and model relevant questioning of the child in
the context of a narrative (the topic of this narrative will be either the activity
of the previous training session or one of the topics earlier identified by the
parent).

6. Have the parent practise questioning in a narrative with their child on a
topic identified earlier in the session.

7. Provide specific feedback to the parent on use of questioning as the
narrative proceeds, or note examples and provide feedback at the end of the
narrative.

8. Provide the parent with a new audiotape for use recording narratives with
their child in generalization settings over the following week.


Parents should be aware that all question types can be used appropriately to
prompt detail the child has not included (about context, about actions,
clarifying or refining comprehension) and the choice will relate to the
information the child contributes. Note that yes/no questions do not
encourage elaborated responses from the children.
IV. Expanding a Topic.

Activity: Planting together.

1. Give feedback to the parent on data obtained from tapes provided of narratives in generalization settings. This feedback should focus on parent's appropriate use of all the behaviours targeted in previous training sessions.

2. Ask the parent to identify two narrative topics for use later in the session.

3. Introduce and explain objective four. Parents will use strategies to provide elaborated information to model a fully elaborated narrative topic for their children.

   The explanation is to include the following points:
   # being shown how to do something is a useful learning experience in the context of language learning, as it is with other learning tasks.
   # in interactions with very young children, parents frequently behave as if they are taking both parts in a conversation.
   # the practice by parents of narrating to children, accounts of past personal experiences, provides a useful demonstration to the child of relevant types of information to include and may indicate to the child that this kind of language use is valued.
   # if a parent has used a question to prompt narrative content, and the child does not know how to respond, a helpful further scaffolding strategy for parents to use is to provide an appropriate answer to their question as a model to the child.
   # if a child has given a limited response to a parent's question, the parent can add detail to model an elaborated response.
# by providing only the beginning of an answer, or some other partial answer to their own question, parents can give the opportunity and responsibility for continuing a narrative back to the child.

4. Refer to any examples of the parent expanding the topic evident in taped narratives from generalization settings over the previous week.

5. Provide the parent with a brochure of key points related to objective four.

6. Initiate a conversation with the child and model additional examples of expanding a topic. The strategies to use in doing this include:
   - providing responses to one's own questions when the child does not respond
   - providing the beginning word or two in an appropriate response to prompt the child completing the utterance
   - adding elaborated detail to the child’s partial response
   - asking a supplementary question, e.g. "And who else was there?"

7. Have the parent practise expanding the topic with their child in the context of a narrative about a topic previously identified. During this narrative the trainer will give positive feedback for expanding a topic or will note examples and provide positive feedback immediately following the narrative.

8. Provide with a new audiotape for use recording narratives with their child in generalization settings over the following week.

The levels of parent behaviours associated with objective four will be measured through parent contributions and prompts (refer to coding procedures).
V. Keeping the Child on Topic

Activity: Cutting and pasting - or a similar constructing activity which the child sometimes does at home and enjoys.

1. Give feedback to the parent on data obtained from tapes provided of narratives in generalization settings. This feedback should initially focus on the most recently introduced target behaviours and then include examples of earlier target behaviours.

2. Ask the parent to provide two topics for development as narratives later in the session.

3. Introduce and explain objective five: Parents will use strategies to encourage their children to return to a topic when it is prematurely ended or interrupted.

Points to include in the explanation:
# encouraging children to maintain and extend their attention to the task by prompting for more elaborative detail is likely to assist the children's narrative skill development and their general learning.
# immature levels of narrative development skill may cause children to provide very little information when recounting past experiences, to the extent that a listener may have difficulty understanding the narrative.
# while talking about a past experience, a child can easily be distracted by some happening in the immediate environment which may hold a greater short term interest.
# this kind of natural interruption to a narrative about a past event is best dealt with by being attended to in a brief straightforward manner until it no
longer holds the child’s attention. The child can then be redirected to the original topic in a natural manner.

4. Make reference to, and comment positively on, any examples of the target behaviour which were evident in tapes provided of narratives from generalization settings.

5. Provide the parent with a brochure of key points related to objective five.

6. Initiate a conversation with the child and try to model some examples of keeping the child on the topic. The narrative topic to be either the activity from the previous session or a topic suggested earlier by the parent.

7. Have the parent practise with their child. During this narrative, give positive feedback to the parent for all target behaviours but particularly where the parent redirects the child back to the topic, or note examples of this and give feedback at the end of the narrative.

8. Provide the parent with a new audiotape for use recording narratives with their child in generalization settings over the following week.


Progress on objective five is to be assessed through measures of the duration of narratives.
Cessation of Training

Training will cease when all training sessions have been completed. Procedures are to be arranged for monitoring parents continued use of the skills trained for a period of time after the end of the training programme.