

CEO Melbourne Speech Pathology Service Delivery: An “Individual” Agent Training Approach to Developing Phonological Awareness skills

Abstract

Training parents to be agents of therapy, by teaching them skills and providing them with information regarding the therapeutic process, during an individual session, is an effective way to facilitate the development of a child's language skills (phonological awareness).

The development of a reliable, effective and accessible Speech Pathology service has long been the challenge for Speech Pathologists working in education. The Catholic Education Office Speech Pathology service has elected to provide schools with a combination of service delivery options with a central component being the use of “agents” (typically parents) to perform home and school based programs. A system of agent-training has been established to ensure that “agents” are provided with both skills and information to enable them to facilitate the development of language skills, in their children, at home.

This research study examines the effectiveness of training parents to perform home programs and in doing so further develop their child's skills. The Speech Pathologist selected ten children who were assessed and identified as having delays in phonological awareness. The parents of five students (experimental group) were then trained in one 60 minute session, to be “agents” of therapy. They were asked to follow a home program, over the period of a term, to develop the skills in deficit. The children in the control group were not treated for phonological awareness delays.

After a period of three months all the children were re-assessed. The parents of the experimental group, in general, proved to be effective in improving ‘sound awareness’ skills in their children. The five children in the control group demonstrated little change in skills during the same period of time.

The findings of this study also indicated that in training parents to be agents of therapy a number of factors need to be considered to ensure positive outcomes. Some of these factors include the careful selection of the agent, awareness of family issues, the type and timing of training as well as ongoing support and contact from the Speech Pathologist.

Introduction

Speech Pathologists currently working in the field of education are frequently faced with the challenge of providing effective and efficient Speech Pathology services to schools and children. Speech Pathologists working in this setting are called upon to assess, diagnose and treat a variety of communication impairments (receptive and expressive oral language, articulation, voice and fluency) as well as metalinguistics which includes the skill of phonological awareness.

The need to provide an equitable Speech Pathology service that is fairly distributed to all who require it is well documented (Wilson, Lincoln & Onslow, 2002; Roberts, Ferdinando and McCusker, 2000; Pertile & Page, 2003). It was with this requirement in mind that in 1995 the Catholic Education Office (CEO) moved to establish a student support service for students attending primary and secondary Catholic schools. It was quickly ascertained that there was a large demand for such a service. Furthermore, it raised a challenge to create a service that provided both reliable and qualitative therapeutic outcomes as well as equal access to those who required assistance, within a reasonable waiting period. (Roberts, Ferdinando & McCusker, 2000).

The CEO elected to use a combination of treatment options and strategies for delivering interventions. These included individual therapy sessions, group interventions, home and school based programs as well as providing a consultative role. It was recognised that this model of service delivery relied very heavily on the role of the “agent” (parent, aide or teacher) as a “critical” member of the intervention team to perform the ongoing activities and practise of the program (Roberts, Ferdinando & McCusker, 2000). It was acknowledged that the everyday or ongoing practise of skills which occurred between intervention sessions was a key factor in the success of therapy. It has been noted in the literature that parents and teachers can be highly effective in the role of therapeutic agent (Dodd and Barker, 1990). One of the CEO aims in using “agents” was to “support, empower and develop partnerships with schools and parents to enhance communication skills and achieve desired learning outcomes for students” (Roberts, 2002 p.40).

The CEO, in choosing to use this model of service delivery attempted to meet the varying needs of the students by providing alternative service options. The use of an agent-training model was designed to assist both parents, teachers and other school staff to develop the appropriate skills to assist students with communication and learning difficulties. Pertile and Page (2003) reported that ‘carer’ training was an essential component in using parents as agents of therapy, to ensure they possessed adequate skills to perform the home program with or without constant Speech Pathologist supervision. The agent was selected based on the most appropriate person to implement the program. Basic pre-requisites included competence in English and ability to read and write. As Wearne and Forsingdal (2004) note, the person needed to be someone who was in regular contact with the child and able to provide an opportunity for consistent practice. They go on to describe the role of parents

as “language facilitators” while the Speech Pathologist played the role of “partner, information provider, guide and motivator”. (p.164)

The training model aims to provide the agent with sufficient information and skills to enable them to carry-out the tasks of the home-program (which is provided by the Speech Pathologist). Upon the completion of training the agent needs to feel confident that they are able to implement the program effectively. Although, as Dodd and Barker (1990) note a comprehensive theoretical knowledge is not required to effectively perform a therapy program. Pertile and Page (2003) comment that agent training is “mandatory,” but so too is the need to demonstrate that the agent is able to perform regular and successful home practice sessions. In addition to providing parents with skills and knowledge, parents needed to be encouraged to use their intimate understanding of their children to assist in the process, thus taking advantage of the home environment. They should also be assisted to develop the ability to “problem-solve” using their own experiences. This is viewed as a positive component of agent based therapy (Wearne & Forsingdal, 2004; Dodd & Barker, 1990).

Agent training however, is not as simple as providing information. Several other factors must also be taken into consideration when using agents / parents to implement therapy programs. It has been reported that some agents may require increased level of support to carry-out the home practise tasks (Wilson & Lincoln et.al.; 2002, Roberts & Ferdinando et.al., 2000). Various family factors have been reported to have an impact on consistent participation in the program. Dodd and Barker (1990) noted that issues such as parent and child motivation, child’s awareness of their own problem, parent and child relationship could all have an impact on the outcome of the therapy process. It is these additional factors that the Speech Pathologist needs to take into account when embarking upon an agent-training course.

Following the initial training session/s follow-up contact with the Speech Pathologist and reviews of the child’s progress and skills is undertaken. It is this access to follow-up support and regular reviews that has been identified in the literature as being central determinants in the successful outcome of home based therapy (Wilson, Lincoln and Onslow, 2002; Pertile & Page, 2003). As previously noted agents require varying levels of support during this phase of intervention. However, the literature generally notes that regular and systematic contact is vital to ensure success. (Wilson & Lincoln et. al.2002; Pertile & Page, 2003).

The system of agent-training used within the CEO context has evolved over a period of several years. Two of the Regional Offices (Northern and Eastern) continue to offer “group” training. That is, training of agents occurs predominantly in group settings with some individual training offered for those agents who were not able to participate in a group. The other two Regional Offices (Western and Southern) now perform agent-training on an individual basis only. Ferdinando, (2005) recently conducted an action research study to look at the efficacy of “group” agent training and found that this strategy was successful in gaining positive therapeutic outcomes for students.

In conducting this research, it is the author's contention that whilst both methods of agent training are effective and efficient, the provision of an individual based agent training method may be more successful in addressing the individual needs of the child and agent and allowing for the various factors that can influence the intervention outcomes.

During an agent-training session with individual parent/s, the specific factors that could influence the outcome of therapy can be openly discussed. Therapy options and strategies can be modified for that specific child/family to ensure that it meets their needs appropriately (Pertile & Page, 2003). Issues such as motivation, child's self awareness and parent-child interaction can be directly observed and addressed. The parent can be taught specific skills in presenting the practise material as well as behaviour modification techniques which may positively influence the end result (Dodd and Barker 1990).

Prediction

Individual training sessions for parents which teach skills and provide information regarding the therapeutic process, enabling them to become agents of therapy, is an effective way to facilitate the development of a child's language skills (such as phonological awareness), thus resulting in positive outcomes for the child

Design

This study uses an OXO design in which the gains in phonological awareness skills following the training of parents as agents of therapy to facilitate the development of these skills, is monitored for a group of 5 children who had been previously identified as having delays in this area.

A control group were also monitored during the same period of time using an OOO design.

Participants

Children

The child participants in this study were ten children in Grades 1 and 2 from several local Catholic Primary schools in the Western Region of Melbourne. The Grade 2 children (experimental group) had previously participated in Reading Recovery at school. All children had been referred to the CEO Speech Pathology service for assessment due to concerns regarding their oral language skills and literacy development. The assessments conducted on all participants indicated that oral language skills, both receptively and expressively, were within normal limits. However, all were identified as having delays in phonological awareness skills which were probable factors in the difficulties experienced in literacy development.

The five students selected for the “experimental” group ranged in ages from six to seven years. Three of the children were male and two were females.

Three of the children in the “control” group were males and all exhibited minor articulation substitutions which had been chosen as the primary goal of intervention (rather than phonological awareness skills)

Parents

The parents of the (experimental group) children in the study were all Australian and competent speakers of English. The level of education ranged from Year 9 to tertiary level study. The parents involved in agent training were all women and in general, all presented as motivated to participate in the program.

Additional Information:

Child No.	Parent	Language Spoken	Educational Level	No. of Children	Work	Confidence (self-eval)	Motivation
1	Mother	English	Yr 9	5	Home	Low	Moderate
2	Mother	English	Yr 12	2	F/T	High	High
3	Mother	English	Yr 12	3	P/T	High	High
4	Mother	English	Yr 10	2	Home	Moderate	High
5	Mother	English	Tertiary	2	F/T	High	High

Tests

All children were assessed with the following instruments:

1. Clinical Evaluation of Language Fundamentals – 4 (CELF-4)
Semel, E, Wiig, E.H, & Secord, W (2003)
2. Articulation Survey
Aitken, N & Fisher, J (1996)
3. Sutherland Phonological Awareness Test (SPAT)
Neilson, R (1995)

Materials Used

1. Learning About Sounds – CEO Speech Pathology Program

Procedure

Assessment:

Baseline assessment

Each student had been referred for Speech Pathology assessment in Term 4, 2004 and the assessments were conducted at the beginning of Term 1, 2005. Assessments were conducted for oral language skills (CELF-4), articulation (Articulation Survey) and phonological awareness (SPAT). The test results indicated that all children (both experimental and control groups) exhibited normal language skills, both receptively and expressively. Articulation skills for the experimental children were also within normal limits (some exhibited sound substitutions which were age appropriate). Three of the children in the control group did present with minor sound substitutions which were selected as a primary focus of therapy. All children (both experimental and control groups) exhibited delays in phonological awareness in excess of 1.5 standard deviations below the mean.

Post-Intervention assessment

The students were re-assessed using the SPAT, in May 2005, (beginning of Term 2) three months following the agent-training program.

Training:

Following the assessments parents were informed of the results and the areas of difficulty outlined. Implications for the classroom were also discussed. Parents (experimental group) were then invited to participate in an individual agent-training program to enable them to facilitate the development of phonological awareness skills at home using the CEO Speech Pathology “Learning About Sounds” program.

The parent training program was conducted during one session for each parent. The session took place at the child’s school and lasted for

approximately 60 minutes. The initial part of the session was conducted with the parent alone and during this section the following was outlined:

- Description on phonological awareness
- Role of phonological awareness in the development of literacy skills
- Brief outline regarding the development of reading
- Ways to perform home-practice sessions – frequency, length, reinforcement, etc
- Description of the booklet (Learning About Sounds Program)
- Extension activities

This session also included a discussion of the child's particular likes and dislikes as well as possible issues that may arise that could influence the outcomes of the intervention. Parents were invited to phone the Speech Pathologist at any time during the intervention phase to discuss any problems.

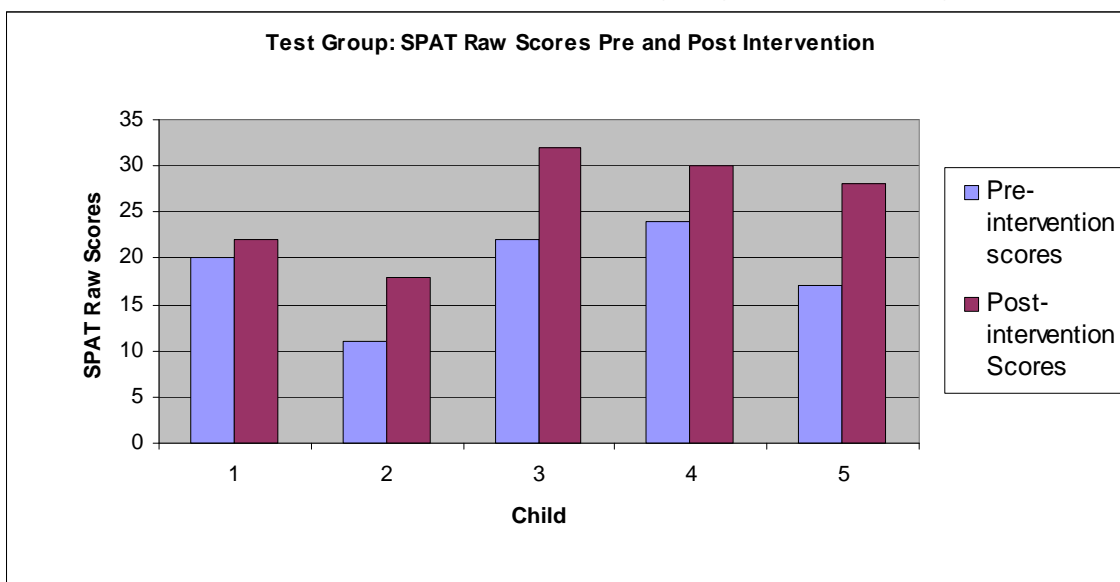
The second half of the session was conducted with both parent and child. During this session the need for some additional home practice was explained to the child. A brief explanation of the results was used to highlight the child's skills and strengths as well as to describe some challenges that had been identified. The skills to be learnt were briefly and simply outlined. This was followed by a demonstration of a practice session and typically involved the use of a game activity and specific positive reinforcements.

See Appendix 1 for a more detailed outline of a training session.

Results

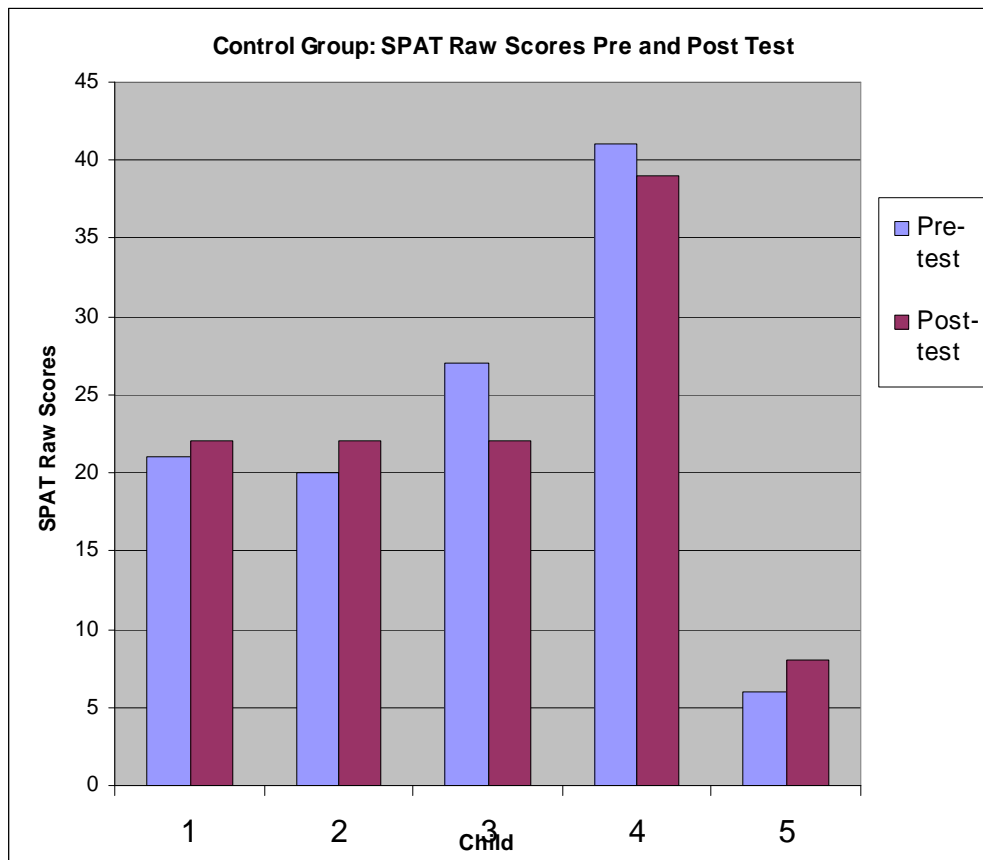
Test Results

Overall, the data collected in the follow-up assessments indicated that for the experimental group of children, gains were made in phonological awareness skills. The students all exhibited considerable improvements and were able to demonstrate these skills in both structured and unfamiliar tasks. The improvements in ability are consistent with ongoing practise of targeted skills.



It was pleasing to note that the improvements gained for all children were between 0.5 and 2.0 standard deviations.

The post – test scores achieved by the control group were also anticipated and indicated that there had been a minimal improvement or a decrease in phonological awareness skill over the same period of time.



The trends demonstrated by both the experimental and control groups supported the prediction that training parents to use a home program to facilitate the development in skills was indeed beneficial in facilitating skill improvements.

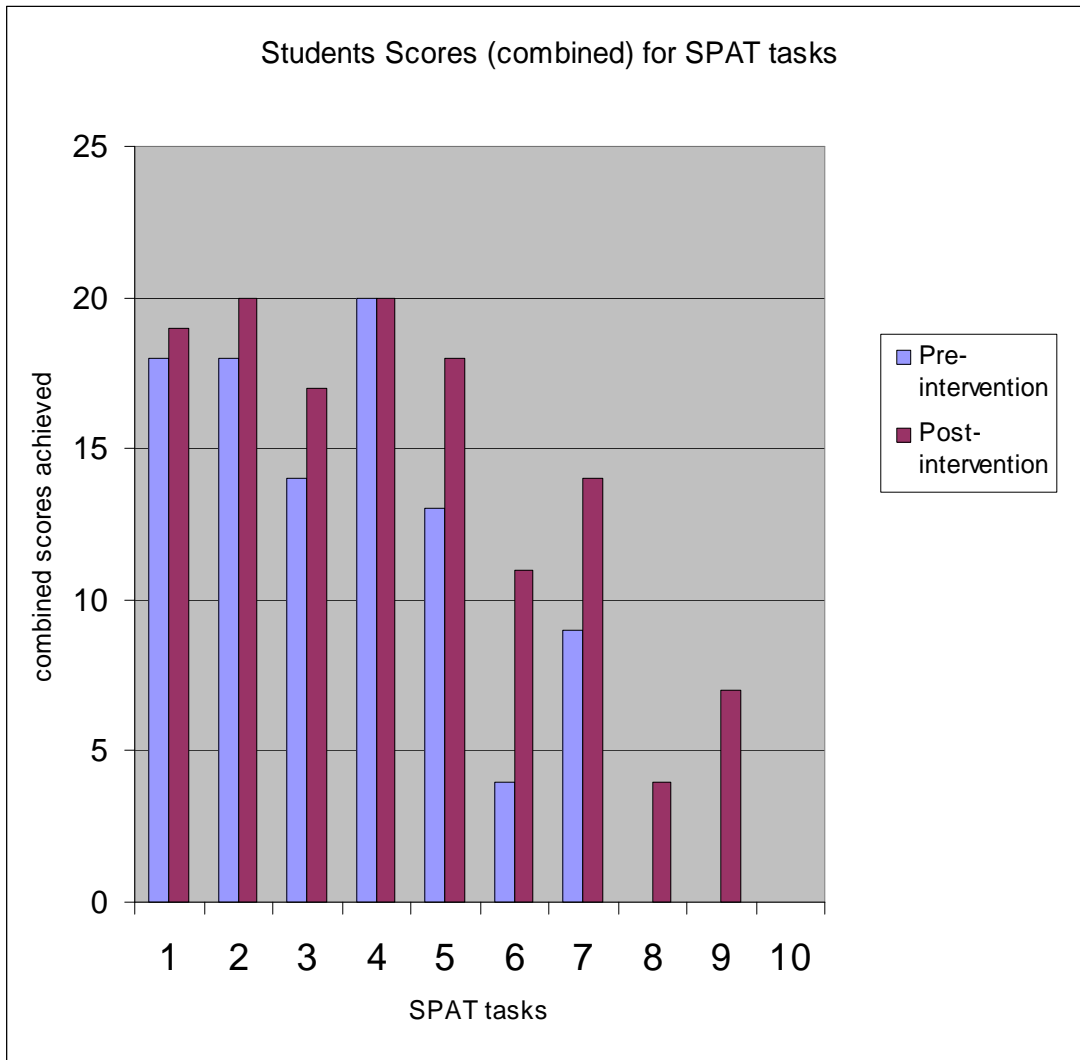
It was also interesting to note that certain phonological awareness skills were more likely to be well developed prior to intervention and these included;

- ❖ Syllable counting
- ❖ Rhyme detection
- ❖ Identification of onset sound

Those skills which were most improved by specific practice during this study included the following:

- ❖ Identification of final consonants
- ❖ Simple segmentation (VC, CV, CVC)

- ❖ Complex segmentation (CCVC, CVCC)
- ❖ Blending

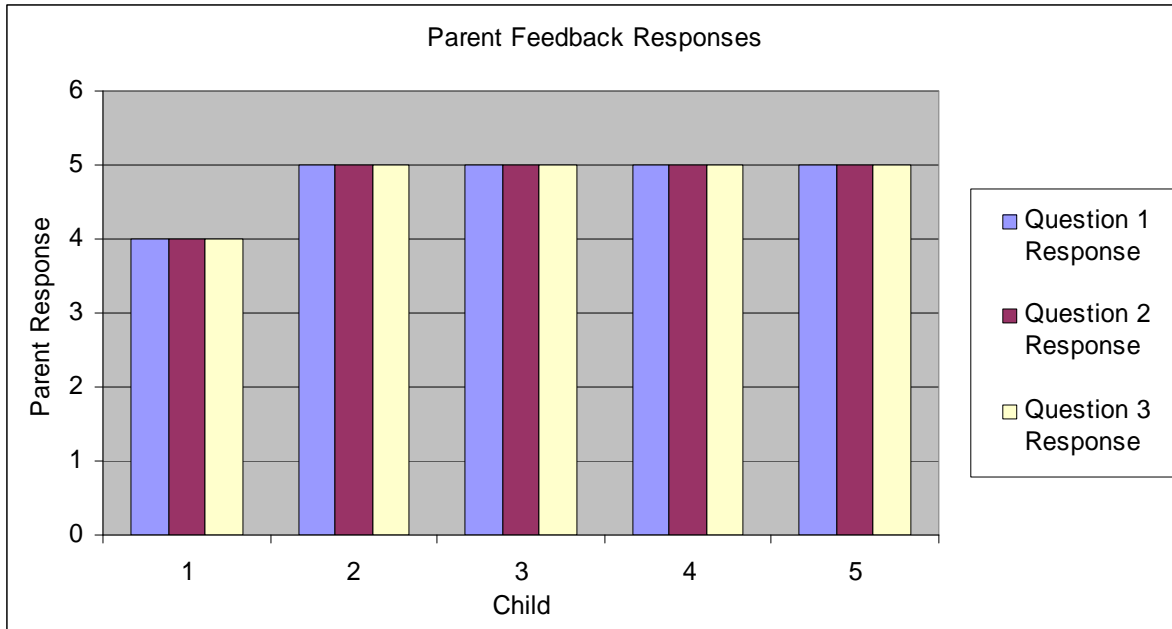


Parent Responses

Upon the completion of the training session and the implementation of the home program, parents were asked to evaluate the process by answering three simple questions and rating these on a five point rating scale. The responses overall were very positive and were indicative of the high level of motivation each parent presented with.

The Questions included:

1. How useful did you find the course in supporting you to work through the program with your child?
2. Were you provided with enough information on the language program and practise activities?
3. Were you provided with enough information on how you can help your child/student learn?



See Appendix 2 for a copy of the evaluation form completed by parents.

Parents were very pleased with the progress their children made and had noted that the children’s approach to the practise tasks had also improved as time went on. Parents also commented on the positive impact on their skills with the ability to phone the Speech Pathologist with queries or questions on issues that arose as they progressed through the program (two parents did contact the Speech Pathologist). One parent noted that a simple five minute conversation had assisted in overcoming a problem with her child that, if not addressed, may have had a detrimental impact on the general outcome.

The exception was the parent of Child 1. who noted that although the program was useful and provided adequate information, she had remained unsure of her ability to follow through with the tasks required. Furthermore, she reported that home practice had been infrequent and inconsistent. She stated that having five children had reduced her ability to practise on a regular basis. This mother had also expressed the thought that “it was the schools responsibility” to teach her child the appropriate skills to further enhance literacy acquisition. It should be noted that Child 1. achieved the smallest improvement in phonological awareness skills.

Discussion

The results gained from the current study do support previous findings outlined in the literature (Dodd & Barker, 1990; Pertile & Page, 2003) that the training of parents as agents of therapy can be beneficial in facilitating the development of a child's skills at home. The comparison of the experimental and control group findings indicate that agents who have been specifically trained can be effective in providing therapeutic intervention and that having a detailed theoretical knowledge is not a pre-requisite to being successful.

However, the initial prediction that "individual" sessions may be of greater benefit than those provided in the "group" training model has not been supported. The study conducted by Ferdinando (2005) has replicated these findings using "group" agent-training. The agents who were trained in this way were also successful in facilitating student skills in phonological awareness. The comparison of the results indicates that the type of training (group vs. individual) does not influence the final outcome. The factors that do seem to influence the effectiveness of agent training would seem to be as follows:

- selection of agents – skills in English, literacy as well as motivation and attitude to their role in educating their child etc
- providing agent-training in a style that suits the agent/parent
- the amount and type of information provided (theoretical and practical)
- demonstration of activities used to practise skills
- the provision of materials/programs to be used at home
- the ability to provide ongoing support and advice
- regular review and monitoring of progress

The aim to "...support, empower and develop partnerships" (Roberts, 2002 p.40) with parents was generally achieved in this study. Parents reported growing confidence in their own skills, with the exception of one parent, and demonstrated their ability to problem solve by using 'ad hoc' practise methods to further enhance their children's skills. However, it would be prudent to continue to provide support and follow-up with these parents to ensure that skills continue to develop and grow. This was identified by Wilson & Lincoln et.al. (2002) as an important "determinant of success." These same authors go on to note that regular contact between Speech Pathologist and parent using media techniques like the telephone should be routine and systematic. The Speech Pathologist in this role does indeed become a "partner, guide and motivator" (Wearne and Forsingdal, 2004 p.164).

The parents were able to provide timely and regular practise of target skills in the environment of their own homes (Roberts & Ferdinando et.al. 2000) and were able to use knowledge of their children to ensure that this practice was

performed at optimum times. Parents noted that the practise of skills continued in situations outside the regular practice sessions. Baker (1976) as cited in Dodd and Baker (1990) suggested that one advantage of parents being agents was that they continued to facilitate skills after the completion of the specific program.

The factors that resulted in one parent, and consequently child, not fully benefiting from the agent-training process needs to be explored further.

The parent in question did not initially question her ability or role in the agent-training model. She did exhibit some motivation to assist her child and although her confidence was low at the outset it was felt that she responded well to the agent training. However, at the review session it became apparent that she had not fully committed to the program and had performed inconsistent and irregular practice at home with her child. The resulting outcome saw very limited improvements in phonological awareness skills in her child – indeed the improvements could be likened to those gained by some of the control group who had not received any intervention.

The factors which may have had a detrimental effect on the program are outlined below:

- inappropriate selection of the agent – needed to consider more carefully the skills and motivation and attitude or beliefs of the ‘agent’ as well as other commitments which may impede regular practice.
- failure to clearly outline the roles in the agent-training process. The parent did not see her role as being as important or equal to that of others involved in the process (Speech Pathologist, teachers etc)
- the type and timing of the training – the use of ‘spaced’ training may have been more effective for this parent.
- insufficient contact with the Speech Pathologist. The initiation of contact was made the parents responsibility and was not used by this parent.
- The length of time between reviews to monitor progress. Three months was too long a period in this case.

A fundamental requirement of the agent-training model is that the ‘agent’ is chosen carefully to ensure success (Dodd and Barker, 1990). The selection of the agent can be performed in a number of ways but may include actions such as interviews with the parents and child as well as observations of the parent – child interactions. Furthermore, discussions with the school / class teacher regarding previous success with school homework may also provide useful insight as to an agent’s suitability and motivation. This selection will ultimately have an impact on the type of training undertaken and the amount of support that an agent will require.

Equally, continuing and consistent contact between the agent and the Speech Pathologist is a vital factor in maintaining ongoing success. It is this ongoing

contact either in person or by using media such as the telephone that has been identified by some as being a critical factor to success (Wilson & Lincoln et.al. 2002; Pertile & Page, 2003). This need for regular contact may vary from person to person, but it is likely that the type of contact should be overtly agreed upon during the training session to ensure that it is regular and well organised.

The training of parents (and other suitable people) as agents of therapy has been described as possibly being both time and cost efficient (Pertile & Page, 2003). This current study, has in a small way, supported the use of trained parents in the remediation of some language difficulties. However, it is clear that further study needs to be conducted in this area. Issues such as agent selection, parent – child interaction, the types and timing of training, the amount of ongoing support and monitoring as well as the impact of the severity and type of language disorder to be treated, are all in need of further investigation.

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Appendix 1

Training Session Out-line

PART 1

(A) Parent is introduced to the concept on Phonological Awareness skills and its links to literacy development

a) description of phonological awareness and its developmental sequence

- Recognise syllables / sounds within words
- Understand and produce rhyme
- Segment a word into sounds
- Blend sounds into words
- Judge sequence of sounds into words
- Manipulate sounds in words to create new combinations

An opportunity is provided for the parent to briefly practise these tasks

b) the difference between letter names and letter sounds

c) a brief outline of the development of reading / spelling

(B) Parents are then invited to discuss the way they will perform home practise and the possible problems that they may encounter. This is specifically directed to the individual family and child

The possible topics that are discussed include:

- Timing of homework (eg. after a snack, bedtime etc)
- Length of time spent practising (eg. 5 minutes – 10 minutes etc)
- How often during the week
- location within the home environment that would be suitable
- positive reinforcement schedule and type – reward system etc
- how long to spend on each target / judging success/ reviews
- possible extension activities

(C) Parents are then shown the booklet and its various components. The activities are explained and the need to target specific areas of difficulty (that have been identified during assessment) is outlined.

PART 2.

The parent and child are then invited to participate in a brief “practice session”. A simple game activity is used to introduce a target skill with material from the booklet “Learning About Sounds”** being used. The aim of this session is to demonstrate that skills can be practised in a fun and interesting manner for the child.

Furthermore, the use of regular positive reinforcement is shown. Parent and child are then invited to select a different activity and perform this task within the session. Parent and child are provided with some feedback during and after this session.

Finally, the parent and child are strongly encouraged to contact the Speech Pathologist should they have any questions or queries regarding the program or should any problems arise. A likely time-frame for the next review is also given.

**Reference: van Mourik, M & Roberts, B (1999) Learning About Sounds – A Program to Develop Awareness of Sounds in Words.
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Appendix 2

Agent training course feedback

Agent: _____ Parent

Name of Student: _____ Aide

Program: _____ Other

Date: _____

1. How useful did you find the course in supporting you to work through the program with your child?

1	2	3	4	5
not				useful
very useful				

2. Were you provided with enough information on the language program and practice activities?

1	2	3	4	5
not				useful
very useful				

3. Were you provided with enough information on how you can help your child/student learn?

1	2	3	4	5
not				useful
very useful				

Any Other Comments or Suggestions:

Thank you for your participation in the course and for filling out this form.

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