

The Greenside PECS Project 2006 – 2007

Introduction

Language and communication difficulties are experienced at all levels by children and young people with severe, profound and multiple learning difficulties. Many communication based programmes and interventions have been developed and advocated for this client group. A meta analysis of the effectiveness of available language and communication programmes for children with developmental speech and language delay and or disorder have shown little or no effect for children with severe communication disorders (Law, Garrett, & Nye ,2004). The evaluations of many of these interventions have been based on single case studies, case serial studies or non-randomised group trials (Charman et al., 2003; Lord et al., 2005, National Research Council, 2001). Many researchers advocate the use of randomised controlled trials as they provide the best evidence of the effectiveness of an intervention approach. Randomised control trials are considered to be unbiased and to best indicate that it is the specific intervention that has led to the change (Howlin, Gordon, Pasco, Wade & Charman 2007).

In spite of limitations of the evidence base of the effectiveness of certain interventions, some interventions are extensively used with this client group. The Picture Exchange Communication System (PECS) is one such widely used social communication skills intervention. The National Autistic Society (2007) reports for example that in the UK more than half of the autism-specific schools and units use PECS to improve pupils' communication skills.

PECS was developed in the mid 1980's by a Speech and Language Therapist, Lori Frost and a Psychologist Andy Bondy as a result of their work with children with autism and related disabilities. PECS is based on the principles of Applied Behaviour Analysis and is appropriate for anyone having difficulties with speech and can be used across all ages and disabilities. A child or young person does not need to be able to attend or imitate as a pre-requisite to using PECS. PECS uses visual communication as its core and does not hinder or delay speech development.

PECS focuses on using behavioural strategies to teach the child or young person to request desired objects. The requesting behaviour is reinforced through obtaining this desired object. Physical prompts are used to teach the child to a) pick up and b) exchange either a symbol or a picture for the desired object. These physical prompts are then phased out using a technique of backward chaining. Motivation is optimised through the use of objects previously identified as reinforcing for the child. PECS uses prompts, specific prompting strategies and error correction strategies. The system incorporates six phases (Appendix 1). The later phases are frequently accompanied by verbal prompts from the communication partner (Frost & Bondy, 2002). The aim of PECS is to teach non-verbal children with autism and related

difficulties to spontaneously initiate some communication. Communication it is argued is the basis for all learning.

Literature review

Several studies on the effectiveness of PECS have indicated that:

- PECS can not only increase non-verbal communication in children with Autism Spectrum Disorder (ASD) but also assist in the acquisition of spoken language for some children (Ganz & Simpson, 2004; Kravits. Kamps, Kemmerer, & Potucek,2002);
- PECS can increase the request rate in non-verbal children with ASD but that this is not generalised to other areas (Yoder & Stone, 2006).
- PECS can increase the rates of children's initiations and use of symbols in the classroom but this improvement is not generalised in other areas of communication. Progress in communicative behaviours is not maintained once active PECS intervention stops. There is some reported effectiveness in terms of staff being trained to use PECS and the follow up consultancy.(Howlin, Gordon, Pasco, Wade & Charman 2007)

Background to the Project

Greenside School is a school for pupils aged two to nineteen with severe, profound and multiple learning difficulties. The school also has some pupils with moderate learning difficulties. Approximately thirty percent of the pupils have a formal diagnosis of Autistic Spectrum Disorder. All the pupils present with varying degrees of speech, language and communication difficulties. A range of Augmentative communication (signing, cues, communication books, visual symbols and pictures) and Alternative communication (VOCA, Objects of reference, intensive interaction) methods are used to facilitate communicative behaviour. Teaching programmes vary but most classes use a range of visual and picture systems and a structured teaching approach. The school has weekly support and advice from two speech and language therapists who provide a mixture of individual pupil therapy and advice and support to staff.

The designated whole school focus for the academic year 2006 to 2007 was communication within the school given the importance of communication to learning. A working group was formed to look at the areas of focus and plan a series of activities throughout the year. Different members of the working party were assigned to represent each pupil group to ensure that all pupils were included within the school. These groups were: Profound and Multiple Learning Difficulties (PMLD); Severe Learning Difficulties (SLD); Moderate Learning Difficulties (MLD); Autistic Spectrum Disorders (ASD). A number of sign along training sessions were planned throughout the year to offer all members of the school community including parents the opportunity of participating in a range of planned 'communication' activities. These

activities included inviting visiting authors, poets and story tellers and celebrating pupil and school achievements in relation to communication.

In the autumn of 2006 all teachers, including Teaching Assistants and some mid - day supervisory assistants attended The Picture Exchange Communication Systems Workshop (PECS). The rationale for this was to skill staff in learning how to implement PECS. PECS could then be used to develop and extend functional communication skills in those pupils who had no speech and/or were making very limited progress with their use of other communication methods. Some staff was already using some form of PECS or pictures/symbols and this was evident throughout the school. So staff was not completely new to PECS but had not been trained in using PECS the way it should be used to maximise its effectiveness.

An initial audit of staffs' skills in terms of their use and confidence in using different types of communication methods was undertaken in October 2006 by the Primary English Co-ordinator (Appendix 2). Sixty-five questionnaires were distributed to teachers, teaching assistants and mid-day supervisory assistants. Forty one completed questionnaires were returned indicating a response rate of around sixty-three percent. Twenty one of the respondents reported using PECS within their classroom settings with a total of twenty-one individual pupils. Table 1.1 provides a breakdown of the number of pupils on each of the PECS phases. All the forty one respondents reported using signing with some reporting more confidence with using signing than others.

Table 1.1 The number of pupils in school on each PECS Phase

| | | | |
|--------------|----------------|----------------|----------------|
| Phase 1 - 10 | Phase 11 -5 | Phase 111A - 2 | Phase 111B - 1 |
| Phase 1V - 2 | Attributes - 1 | Phase V - 0 | Phase V1- 0 |

This small scale project arose out of the need to ascertain the effectiveness of PECS with pupils as well as a need to ascertain staff's views and perceptions about implementing PECS following the level of whole school investment in the training. The school's Primary English co-ordinator, the Speech and Language Therapist and the Educational Psychologist had a series of meetings to determine the questions to be explored, the sample and the design of the project.

METHOD

Qualitative Purpose Statement

The purpose of this qualitative study was to monitor the progress of seven pupils using a case study approach and explore the experiences of staff responsible for implementing the PECS programme with these pupils. Staff had been trained in implementing the PECS programme and was able to draw on the expertise of the PECS consultant throughout the duration of the project which lasted for a period of

twenty-nine weeks. The research site was two primary and one secondary class rooms at the special school for pupils with profound severe and multiple learning difficulties.

Central Questions (Overarching questions explored in the project)

1. What progress have the targeted pupils made in relation to their communication?
2. What are the experiences and observations of staff in implementing the Picture Exchange Communicative System with the targeted pupils to facilitate key communicative and interactive behaviours?

Sampling

Purposeful qualitative sampling was used. Initially fifteen pupils were identified by staff to be included in the participant pool. As mentioned earlier because of the widespread use of PECS materials or PECS type procedures throughout the school it was not possible to identify a large sample of children or staff who were totally unfamiliar with PECS. Therefore the selection criteria for inclusion were:

1. That the pupil participants were not already using PECS ;
2. The pupils showed no evidence of sensory impairment;
3. That the participants current communicative profiles as based on the knowledge of the school's speech and language therapist and teachers indicated their suitability for using PECS. These pupils were those who had little or no functional language (that is they were either non-verbal or their language did not exceed single words/word approximations). Thus pupils who already had some speech or were successfully using other forms or procedures of augmentative and /or alternative communication were excluded from the participant pool.

Following initial joint discussions between the Speech and Language Therapist, the Educational Psychologist and the Primary English Co-ordinator, eight pupils were deemed unsuitable to be included in the sample from the original fifteen pupils identified. Therefore further exclusion criteria were used. These were:

- A lack of development and understanding of object permanence
- No understanding of exchange or requesting and interaction
- Using some speech and signing
- Using a communication book or other forms of Augmentative and/or Alternative communication with a measure of success.

Pupil Participants attended two classes in the primary phase and one class in the secondary phase. Meetings between the school's educational psychologist, the speech and language therapist and the

school's Primary English Co-ordinator were held to ensure that the final participant sample of seven pupils met the stipulated criteria. The heterogeneity of the pupil population in terms of their communication profiles also made it difficult to include a wider sample of pupils from any one particular key stage. Therefore there were no pupils from key stages 1 and 3 and only one pupil from key stage 4.

In order to obtain the views and perceptions of staff implementing PECS with the seven identified pupils, semi-structured interviews were used with ten staff. The staff selected had not previously received any direct training in class or consultancy from the PECS Consultant. Previous attendance at a PECS workshop was not considered as grounds for exclusion. Interviews were conducted individually by the educational psychologist and the Primary English Co-ordinator at school. Consent was obtained from individual staff members and issues of confidentiality were addressed prior to the interviews.

Study design

A case study approach was adopted in light of the number of participants. Each participant was initially assessed by staff. This involved drawing on the expertise of the external consultant to determine which phase of PECS participants should be placed at as part of a baseline process of participants' current communicative levels. The baseline procedures did not include a non-verbal developmental quotient for each pupil but was simply based on their communicative profile in relation to where it placed them in relation to the PECS Phases. Following this staff implemented the PECS programme with the participants and received advice from the consultant through demonstrated strategies and systematic feedback on their implementation of PECS. The school received a total of ten consultancy visits following the training. To monitor the progress of the pupil participants, staff completed fortnightly data collection sheets from the start of the project (November 7/11/2006) to the end of the project (May 21/06/2007) amounting to a total of 29 weeks which included the Christmas and Easter breaks. The time period was selected to fit in with the school calendar and the resource constraints.

Parental consent for the participants identified in the project was obtained and the purpose and intended duration of the project was shared with the parents by the staff. Parents/carers were encouraged to support the programme within the home context and were provided with relevant resources such as symbols, communication books and modelling of exchanges by staff. Semi-structured interviews were used to elicit the experiences and observations of ten staff implementing PECS following the twenty-nine weeks (Appendix 4). Probe questions were used to provide additional information.

Participants

Descriptive Statistics have been used to describe the participant sample. Table 2.1 provides the nature of the participants' special educational needs. Three pupils had a formal diagnosis of Autism. One pupil had a formal joint diagnosis of Autism and Down's syndrome. Two pupils had a diagnosis of severe learning difficulties and one pupil had a diagnosis of a non-specific learning difficulty. Table 2.2 describes the initial identified PECS phase of the participants. Six pupils were from the two primary classes and one was from the secondary class. The participants were 7 pupils (4 males and 2 females). Six pupils were from key stage 2 and one pupil was from key stage 4. The mean age of the pupils was 11 years 1 month (range 10 years to 17 years 1 month).

Figure 2.1 The nature of the pupils' difficulties

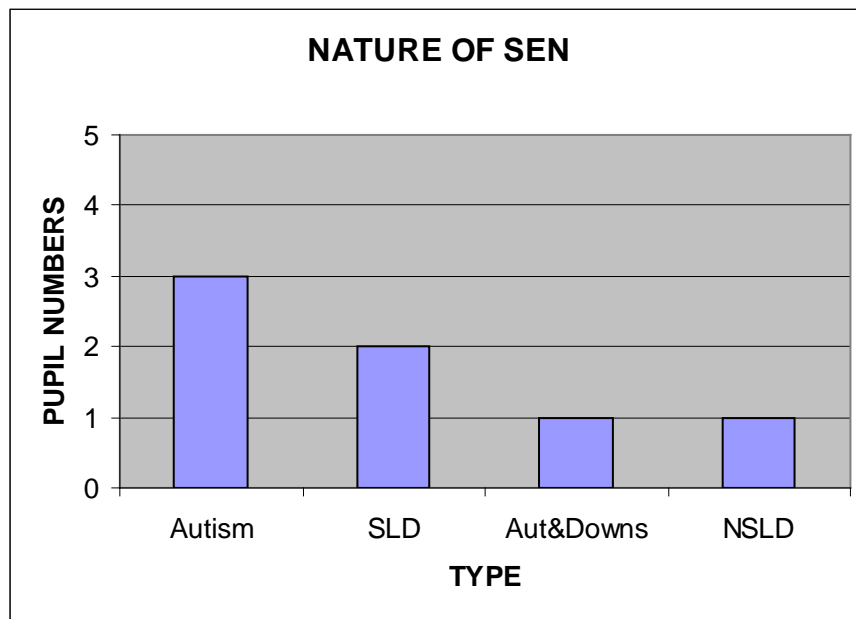
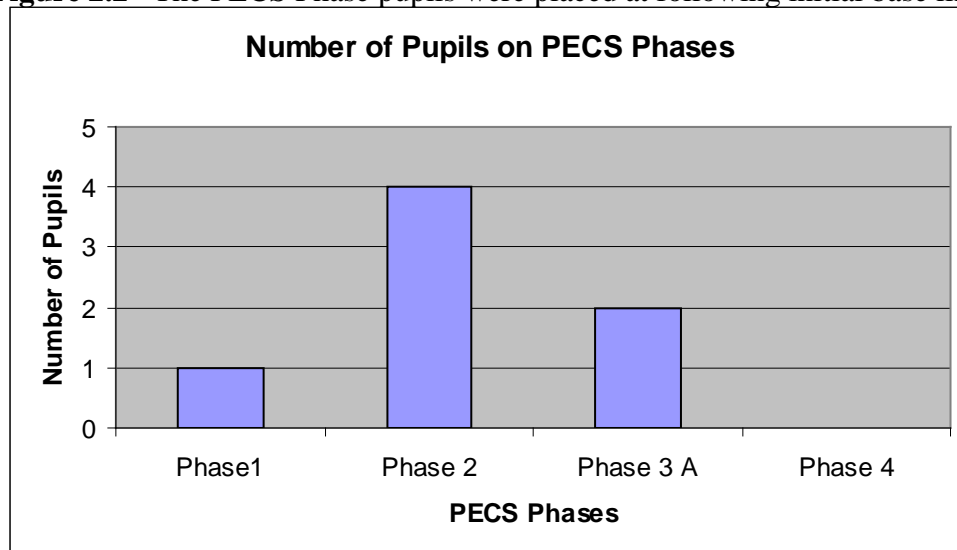


Figure 2.2 The PECS Phase pupils were placed at following initial base lining



Procedure

Participating staff attended a two-day workshop comprising thirteen hours of training in the use of PECS by the leading expert consultants of the Pyramid Educational Consultants UK. The training consisted of the prescribed format as laid out in the training manual (Frost & Bondy, 2002). The implementation of PECS began in the first week of November 2006 with the PECS consultant providing a total of ten consultation visits to the staff implementing the programme. During the visit the consultant worked with staff in recommending and demonstrating strategies to advance pupils' use of PECS and to provide staff with constructive feedback on their use of PECS. At the consultancy level, a consistent pattern of support was provided based on the principals and practice of PECS as contained in the manual.

Staff's practice varied because of time and personnel e.g. when they had extra Teaching assistant time or the support of the Speech and language therapist in the class. During the initial stages of implementation, PECS was timetabled into the existing curricular activities. Snack times and dinner times were particularly used as opportunities to implement PECS since for many pupils edibles acted as a strong incentive. To monitor the progress of the participants, staff completed fortnightly data collection sheets from the start of the project (November 7/11/2006) to the end of the project (May 21/06/2007) amounting to a total of 29 weeks

Data Collection Strategies

Participant data was collected through the PECS data collection sheets completed by staff over a period of 29 weeks for each participant. Individual, semi-structured interviews were conducted with all school personnel involved in implementing PECS with the identified pupils. These were administered by the Primary English Co-ordinator and the educational psychologist. The interviews were conducted in the school settings. Interviewees were assured of confidentiality. The responses were collated manually and transcribed. The interviews were conducted using a series of open-ended questions to elicit the interviewees' perceptions and experiences of implementing PECS. They were first asked to describe their own experiences of implementing PECS. They were then asked what helped them in implementing PECS and whether any issues or problems had been encountered and how they had been addressed. Finally they were asked how they had been able to encourage communication through PECS in the wider community.

Data Analysis procedures

The procedure for analysing the data for the pupil participants was done by noting each pupil's initial PECS phase and their final PECS phase from the data collection sheet. This was then presented in the form of a graph to enable a visual representation of each pupil's progress from the initial to the current PECS phase.

For analysing the interviews the stages for undertaking a qualitative data analysis outlined by Cresswell (2003) were adopted. These were:

- Organising and preparing the data for analysis through transcribing the interviews verbatim from all the sources;
- Reading through the data to initially obtain a general sense of the data and reflect on the overall meaning;
- Undertaking a detailed analysis by adopting a coding process to organise the material into chunks and then bringing meaning to the chunks.
- The coding process was then used to generate themes for analyses. Themes were analysed and connections were made between themes.

Verification

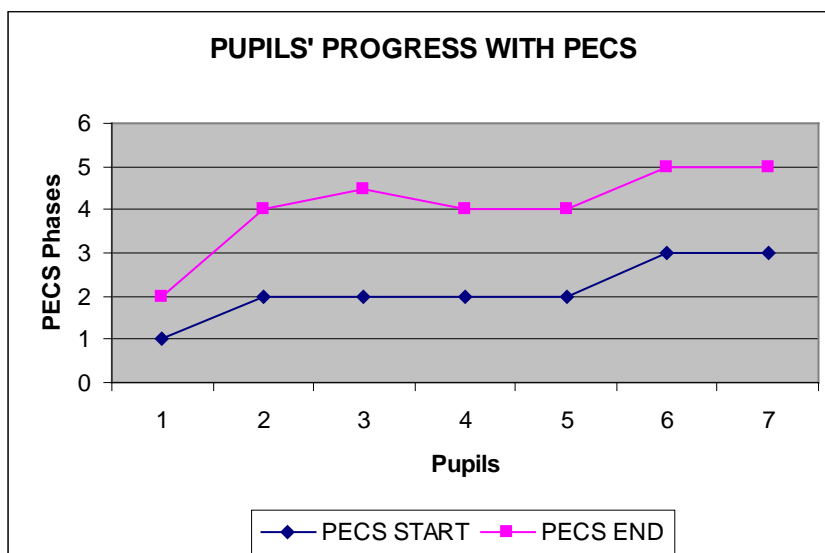
Since qualitative procedures were employed, reliability was used to check for consistent patterns of theme development by two investigators in the team (the Primary Co-ordinator and the Speech and Language Therapist). Internal validity was established to determine whether the findings were accurate from the standpoint of those undertaking the research by using the strategy of member-checking and participatory modes of research (Cresswell 2003). The former involved taking the final themes back to the participants to determine whether the participants felt they were accurate. The latter involved the participants being involved in as many phases of the study from monitoring pupil progress to the checking of interpretations and conclusions.

Findings

Pupil Participants

All the participants showed movement from their starting phase of PECS during the stipulated duration of the project. Table 3 illustrates this progression.

Table 3 Pupils' Progress with PECS from November 2006 to May 2007



Pupil 3 progressed from Phase II to the Attributes phase which falls between Phase IV and Phase V.

Staff Perceptions

Through the analysis of the interviews the following themes were identified. Quotations from the interviews are included to illustrate the identified themes.

Impact of training:

Staff reported an increase in their understanding and use of PECS following the training and seeing it being used. There was a reported corresponding increase in the use of PECS following the training. All staff reported that they found the visits from the external consultant and practical demonstrations particularly helpful. One staff member reported finding the PECS handbook useful.

“The training course helped because we did not use much PECS before. But now we understand how to use it and it has helped them (the pupils) in class”.

“Seeing it being used was the most helpful. Having X(external consultant) from the training come to help show us was very useful”.

One member of staff reported a prior knowledge of PECS through running a special educational needs play scheme. Another reported that the training complemented the programme that was being undertaken at university. The majority of staff interviewed reported that PECS had increased their skills and confidence in terms of providing them with an additional tool to facilitate communication skills and that although initially they had had some misgivings of how it would work they now had a positive view of PECS.

“...It’s been a learning process and I now have a very positive view of PECS. I appreciate that it is not suitable for everybody”.

“...would now feel confident with implementing PECS throughout the school”.

Only one member of staff reported that PECS had not contributed to her overall professional development since she already used a range of communication strategies depending on the presenting communicative needs of the pupils. She did acknowledge, however that the training had enabled her to become a PECS user.

Staff also reported the impact of PECS on the communication and behaviour of pupils.

“.....observed a reduction in X’s (pupil’s) frustration since implementing PECS”.

Facilitating factors

All the staff reported the visits from the external consultant as being extremely helpful. Staff reported that this enabled them to learn through practical demonstrations and the feedback from being observed was cited as very useful. Staff also reported that these visits enabled them to ask questions and helped in keeping them on track. From a personal and professional aspect the encouragement offered by the external consultant was seen as being particularly valuable.

“.....trainer (external consultant) visiting us and keeping us on track. Also her encouragement”.

“trainer to talk to .She worked with the children to make it practical”.

The immediacy of the teacher demonstrating aspects of the programme then and there and learning through modelling was also cited as a facilitating factor. Staff also reported that the pupil led aspect of the programme was easy to implement. During the initial stages of implementing PECS some staff reported that having a strict routine for times to teach it was useful. Opportunities for one-to-one work initially to embed skills, smaller classes, a quiet distraction free area and sufficient staffing and resources were cited by all the staff as aspects that made it easy for them to implement PECS.

Training was seen as a facilitating factor in that it enabled *“....everyone to know what is meant to happen”.*

The ease of use of PECS was reported by staff in terms of going on the PECS training and understanding the rationale for using it to facilitate communication.

Constraining factors

Insufficient staffing and staff not trained in using PECS was frequently cited by staff as a constraining factor in implementing PECS. Staff also reported that during the initial stages of implementing PECS it was not always possible to do so in a quiet distraction free environment. Since not all pupils in the classes were PECS users, the difficulty of ensuring that non-PECS users were also supported in developing and extending their communication skills meant that staff had to ensure equity of adult resources for all children.

“At times it (implementing PECS) has been quite difficult for us as our class is very busy and not all of the pupils use PECS. They need our attention as well”.

Some staff reported that not being able to initially use signing with PECS was constraining particularly where signing had been in use with the targeted participants. They reported that this was also confusing for the pupils. Having to fit in PECS to the school context and with the school's communication policy was also cited by some staff as difficult.

With the Key stage 4 pupil, staff reported that a lack of subject related symbols was constraining, Staff also reported that communicating abstract concepts such as 'wait' was problematic. This had led to the pupil exhibiting some frustration during the initial stages of implementation leading to staff having to terminate a session and start again after a break.

".....we do take his communication book to science but there is nothing relevant in terms of symbols".

Staff reported that there was a lack of a standard bank of pictures used throughout the school. There was also the practical issue of losing pictures and staff and pupils remembering to take the communication book when outside the school premises.

Communication tool in and out of school

Staff reported using PECS at dinnertime, for snacks and at break times. Staff further reported using PECS at music time, choosing, especially at dinner time and using PECS to assist pupils with getting their own cutlery. PECS was also used in class for table top activities. Outside school staff reported using PECS for trips into the community such as attending science lessons in the mainstream school and using it in the café. All staff reported encouraging pupils to use PECS when communicating with an adult although they reported that the pupils did not as yet do so spontaneously.

Involvement of parents, carers and respite care staff in using PECS was encouraged but staff reported that this was difficult to monitor and there was some queries expressed by staff about the extent to which PECS was being used outside the school context. One staff reported for example that when the pupil returned to school after the week end the same symbols were on the front of the pupil's communication book as the ones on Friday afternoon.

Interpretation

The two central questions that were explored were:

1. What were the experiences and observations of staff in implementing the Picture Exchange Communicative System to facilitate key communicative and interactive behaviours in pupils?
2. What progress had the targeted pupils made in relation to their communication?

The findings indicate that staff's experiences of the PECS training, had a positive impact on their understanding and use of PECS to facilitate communicative and interactive behaviours in pupils. Aspects of the training such as regular access to the external consultant, opportunities to observe colleagues model PECS initially, timetabled opportunities and quiet environments during the initial implementation were reported to be very helpful. Observation of colleagues modelling PECS for the benefit of other colleagues was seen as useful in:

- Building on colleague's knowledge of how PECS should be conducted and;
- Pupil reactions assisting staff to adapt PECS to the pupil leading to a greater pupil led approach.

Although staff reported that the PECS training had added to their repertoire of professional skills they also reported an increased awareness that PECS was not suitable for all pupils in school. It was therefore important to know and use a range of facilitative communication strategies. Staff was very clear that other ways of communicating such as using sign language and speech needed to complement the use of PECS especially in cases where pupils had been used to some signing. Pupils' communicative attempts whether using part signing and/or part PECS were both given equal importance.

"It's (PECS) good but it needs to be used with everything else".

Staffing was seen as key to the initial implementation to help embed exchanges and assist generalisation. It was also seen as the key to ensure PECS was consistently used by pupils to communicate throughout the school day. Where targeted children were attending the Play scheme, staff reported being able to use PECS to assist generalisation in another context. Building a common bank of symbols that could be used throughout the school and addressing abstract concepts for secondary pupils as well as ensuring use within the home/respite care contexts were seen as areas to be developed. It would appear from these preliminary findings that the views and experiences of staff of using PECS were positive.

In relation to the second central question all the seven pupils made progress in terms of moving up the PECS phases. Staff observation of pupils reported an increase in communicative behaviors, a reduction in frustration shown by some pupils and the beginning of more independent behaviors such as learning to select their cutlery for dinner and for making snack and meal choices. One pupil was reported to be spontaneously using PECS for snacks. However, in general it was felt that all pupils needed consolidation since communication had not reached the spontaneous level. Both staff and pupils needed reminders to use PECS outside the class room context and where communication books were being used to ensure that

the pupils took these with them. Staff reported that for some pupils PECS provided them with “*a bit of freedom*” and something they had achieved.

The consistency of using PECS to contexts outside the school was seen as somewhat problematic since it was difficult to ensure that PECS was being used to assist in generalizing learnt communicative behaviors. This would suggest that the dissemination of communicative skills including incentives proved more problematic. A possible explanation for this could be that there were limited opportunities and time for discussion with parents/carers about how to facilitate communicative work being undertaken in school on a regular basis.

Research by McLaughlin (1995) identifies that change in practice brought about by implementing interventions may fail to occur because of:

- A lack of manageable and specific teaching strategies and skills;
- Ongoing support, such as modeling and feedback to enable staff to assimilate and implement these skills.

It would appear that part of the success of implementing PECS by the staff was that both these dimensions were addressed. The availability of the external consultant and the support offered as well as the modeling of aspects of the approach between staff led to an accommodation of skills and strategies.

Barriers

Staff initially reported concerns at being restricted to not using sign language when supporting pupils using PECS. This was felt to be limiting for some pupils who were already understanding and using some Makaton. These issues have been addressed and in line with the school’s communication policy additional forms of communication as well as PECS are being used to encourage and facilitate communicative behaviors in pupils.

Ways of ensuring PECS was being used with pupils outside the school context was difficult. It is open to question whether PECS usage would have led to greater embedding and generalization of communicative behaviors if this had occurred.

The lack of a standard bank of picture symbols to use throughout the school is being addressed by staff. It was not always easy to monitor which symbols were being used at home. Some symbols such as ‘home’ and ‘out’ were reported to be understood out of context so that the pupil felt they were going out or home.

Lack of appropriate staffing at times was perceived by all staff as a constraining factor to ensuring that PECS was being encouraged throughout the school day. Appropriate staffing was seen as crucial especially during the initial implementation stage of PECS.

Strengths and Limitations of the project

At the level of individual pupils, all pupils (100%) moved up one or more PECS phases. The use of PECS in the classroom both by staff and pupils increased. Progression within the PECS phases points to increased levels of social and communicative behaviours indicating some improvements in a pupil's social development and ability. This outcome measure is an ecologically valid measure of communication skills and as such is generalisable to similar pupils in similar school settings. This project only investigated pupil progress using PECS but since other forms of communication (e.g. signing) were also incorporated later on the impact of this can not be discounted when considering the affected outcome. Further since within-child and within-class correlations were not taken into account the outcomes for each child were not corrected for their baseline measures on the dependent variables and other pupil characteristics such as age, developmental levels and language.

Another limitation was that the researchers relied on only one measurement point at the end of the 29 weeks for each pupil rather than having a mid- measurement point. Randomised control trials were not used by matching the intervention group to a delayed intervention and no intervention group. This proved practically and ethically difficult in terms of resourcing and time constraints. In order to do so participants from another special school would have needed to be included in the sample. Again it was not possible to obtain any generalisation data in other settings such as other parts of the school or the home or community. A strength of the project was that it was undertaken in a naturalistic setting and made use of available resources in a flexible way and was investigating pragmatic effects rather than the effectiveness of PECS itself.

Bias is a common feature of qualitative research. In this study the interviewees were asked to relate their experiences and share their perceptions of implementing PECS with pupils they were employed to support and therefore essentially comment on their experiences with individual pupils. This raises the possibility of bias which could have undermined the credibility of the results. However, since a rich description of what staff were doing and thinking in relation to PECS was the objective, it was felt that a qualitative approach was the most appropriate method. It was also considered the most useful method since it was hard to operationalise variables. The completeness of the information the researchers were trying to obtain may have been compromised due to excluding, for example, the views and perceptions of parents/carers and the pupils themselves. Again contextual factors which facilitated and acted as barriers may be unique

to the school setting and therefore attempts to generalise the results to other special school contexts may be inappropriate.

This small scale project has identified some positive results of pupils' progression with their communication skills and for staff's skill in the use of PECS. Anecdotal observations by staff indicate the beginning of more independent behaviors by some of the pupils and changes in behavior as a result of learning through using PECS. Some identified shortcomings have already been addressed by staff as the project has progressed.

Relation to literature

Pupils' progress in communicative behaviours using PECS as shown by this project corroborates previous studies showing that

- Language impaired pupils particularly those with ASD can learn to use a symbol system such as used in PECS to communicate effectively(Ganz & Simpson 2004; Howlin, Gordon et al.,2007);
- Expert training and consultation in PECS usage for staff can lead to better communication in children (Howlin, Gordon et al, .2007).

These results did not indicate any development of spoken language in the pupils nor any generalisation of communication skills learnt to other settings or improvement in other areas of communication.

Future Directions

Future directions could possibly include ways of greater parental involvement in terms of parents observing PECS being modelled by staff and timetabled opportunities for liaison between staff and the parents or carers of pupils using PECS. It would also be useful to monitor changes in behaviour over time for PECS users both in the school and home contexts. This could provide further evidence of any relation between improved communication and presenting behaviours. It would be useful for example to look at pupil progression following the termination of the consultancy. Ways of addressing issues such as which symbols are being used at home, the pupil's progress with generalising communicative behaviours need to be addressed on a regular basis. This can be in addition to any parent workshops offered by the school.

For the future, there are further developments that could be considered such as finding opportunities to work alongside colleagues from other special schools with a similar pupil population –special school partnerships to develop training and support programmes to disseminate successful use of PECS and its generalisation and use by staff and pupils in the wider community. This project in line with recent research points to the usefulness of PECS not only with children on the autistic continuum (Howlin, Gordon et al., 2007) but also for other non-verbal children. PECS needs to be seen not in isolation as a

psychosocial intervention but as part of a wider intervention package to develop and extend the communication skills for severely impaired non-verbal children.

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Appendices

Appendix 1: PECS Phases

Appendix 2: Whole School audit of Communication skills

Appendix 3: Procedure for conducting interviews

Appendix 4: Questions for semi-structured interviews

Appendix 1: The PECS Phases

Phase 1 – How to Communicate

Phase II – Distance and Persistence

Phase III A- Simple Discrimination

Phase III B – Conditional Discrimination

Phase IV – Sentence structure sequence and 'reading the sentence strip

Phase V – Attributes – use of descriptive Vocabulary

Phase V – responsive requesting

Phase VI – Commenting

Note: A detailed description of the phases is provided in:

Frost, L and Bondy A. (2002) *The Picture Exchange Communication System Training Manual, Second Edition*, Pyramid Educational Products Inc. www.pyramidproducts.com

Appendix 2: Whole school audit of communication skills

GREENSIDE SCHOOL COMMUNICATION QUESTIONNAIRE

1. How confident do you feel using signing?

| | | | |
|------------|------------------|-------|----------------|
| Not at all | Fairly confident | Happy | Very confident |
| | | | |

2. How confident are you that the signs you use are correct?

| | | | |
|------------|------------------|-------|----------------|
| Not at all | Fairly confident | Happy | Very confident |
| | | | |

3. How many signs do you think you know?

| | | | | |
|------|---------|---------|---------|------|
| less | 10 - 20 | 20 - 40 | 40 - 60 | more |
| | | | | |

4. How many do you think you use?

| | | | | |
|------|---------|---------|---------|------|
| less | 10 - 20 | 20 - 40 | 40 - 60 | more |
| | | | | |

5. Do you feel you need more training in Signalong?

| | | |
|-------|--------------|----------|
| Basic | Intermediate | Advanced |
| | | |

6. Would you like more training on the communication needs of students?

| | | | |
|------|-----|-----|-----|
| PMLD | SLD | MLD | ASD |
| | | | |

7. What levels of PECS are currently used in your classroom? (See attached sheet for level descriptions)

| | | | |
|----------|------------|------------|------------|
| Phase 1 | Phase 11 | Phase 111A | Phase 111B |
| Phase 1V | Attributes | Phase V | Phase V1 |

8. How do you use Rebus symbols (including Writing with Symbols) in your classroom?

| | | |
|------------|-------------|---------|
| Timetables | Writing | Reading |
| Stories | Topic grids | Other |

9. What Rebus labelling do you use in your classroom?

| | | | | |
|-------|-----------|----------------------|----------------------|--------------------|
| Areas | Equipment | Timetable activities | Individual Schedules | Other; please list |
| | | | | |

10. What communication aids are used in your classroom? (Please refer to attached sheet).

11. Any other comments or issues? (Please refer to attached sheet).

Appendix 2: Whole school audit of communication skills (continued)

AUDIT OF COMMUNICATION AIDS CURRENTLY BEING USED

P1 Big Mack

P2 Big Mack

P3 Big Mack; 4 Talker

P4 Big Mack

P5 Waiting for Aid for Anthony

P6 Big Macks

S1 Tech Talk

S2 Big Mack

S3 Dynavox

S4 4 Talker

S5 Big Macks

T1 None at present; waiting for Aid for Jonas/Scott

T2 None at present

T3 4 Talker

Leavers None

COMMENTS/ISSUES

- Regular signing practice please
- Switching advice for individual students
- Very few students in P16 need signing
- Could signing practice be introduced into P16 student forum
- More signing practice – not enough to catch up
- Advice on communication system/aid for individual pupil
- Students have been using aids which have not come with them

Appendix 3

Procedure for conducting interviews

1. Obtain consent from the participant to participate in the interview and be audio-taped. Ensure there is a quiet, suitable place for conducting the interview.
2. Convey the purpose of the interview i.e. to explore participants' views on the use of PECS in their settings and context, the time the interview will take, plans for using the results from the interview and the availability of a summary of the study on completion of the study.
3. Ensure confidentiality of responses in terms of informing participants that they will not be identified in any subsequent reporting. Also inform participants that they are free to terminate the interview at any time without offering an explanation.
4. Begin by recording your name, name of the participant and setting and time.
5. Ensure the list of questions is not shown to the interviewee. Use a clip board if useful.
6. Be flexible enough to follow the conversation of the interviewee while sticking to the questions. Keep interviewee focused and ask for concrete details.
7. Use probes to elicit more information, clarify points or have the interviewee expand on ideas/views.
Clarifying probes: *'Tell me about.....; Do you.....?'*
Elaborating probes: *'Tell me more'; Could you explain your response a bit more? I need more detail; 'What does' not much' mean?'*
8. Take notes during the interview in the form of short phrases followed by a dash.
9. Thank the interviewee on completion assuring him/her again of the confidentiality of the responses

The key to good interviewing is being a good listener (Cresswell 2005)

.....

Appendix 4

Questions for semi-structured interviews

1. What aspects of training have you found useful in helping you in implementing PECS with the pupils you support?
2. What has made it easy for you to implement PECS?
3. Have you encountered any difficulties in implementing PECS? (probe to request elaboration)
4. How have you encouraged communication using PECS outside the classroom?