

# **An evaluation of POPS Reading scheme for pupils with Down's syndrome by three Devon schools – June 2006 to February 2007**

## **Introduction**

The POPS Reading scheme – 'Plenty of Potential' is a new reading scheme which has been developed by Marie Dunleavy, a parent of a boy with Down's syndrome (DS). Although her son managed well with the class reading scheme initially, the leaps in vocabulary in the later books became too much for him and he was not able to access his school's reading scheme and was becoming 'turned off' by print. (DSA Journal Spring 2006).

Reading is generally a strength within the specific learning profile of children with DS, Marie set herself the challenge of writing a scheme that was content appropriate for her son, with stories based around familiar events, but which included the 200 most common words and used a whole word approach to reading which has been proven to be the main way forward for pupils with DS (Buckley et al *ref*). The scheme also has phonic games to develop phonic skills in a fun way.

The books are based on the family adventures of Kal, a boy with DS, and focus on building a sight vocabulary of functional and common words. The reading material progresses in small graded steps and focuses on every day easily understood topics. After reading a page pupils can match the accompanying word cards to words at the bottom of every page or match word cards to the lotto games at the back of each book. Finding the elephant hidden in each illustration offers another opportunity for success.

There are 4 packs of books with 4 books in each pack except for pack 1 which has 5. Books in each series are graded from series 1 to 4. There are also word card sets for each book and phonic sentence cards with illustrations based on Consonant Vowel Consonant (CVC) words. A fun elephant slider game reinforces the phonics taught. Purchase of the entire scheme including the games and word cards is approximately £200.

## **The project**

We were given the opportunity to evaluate the POPS reading scheme by the Down's Syndrome Association, the author of the scheme Marie Dunleavy, and Devon County Council Children and Young People's Psychology Service. Marie kindly donated a complete set of the reading scheme and the phonic games to each school and to the lead Educational Psychologist managing the project. The project ran from June 2006 to February 2007, and is ongoing.

As an Educational Psychologist (EP) with a part-time specialist post to support pupils with DS, and as a member of the DSA UK Education Consortium providing training in education and writing materials, the author was keen to take the opportunity to evaluate the scheme.

The trial took place in three mainstream Primary schools. The schools were chosen because they were known to be good inclusive schools with excellent skills for working with a range of pupils with Special Educational Needs, including pupils with Down's syndrome.

Within the schools there were 7 pupils (6 girls and 1 boy) with Down's syndrome with a range of abilities and ages. Ages ranged from 5 years to 11 years and abilities from significant learning difficulties and a dual diagnosis of Autistic Spectrum Disorder, to within the low average range of ability, with most pupils having moderate to severe learning difficulties. Thus a typical range of learning abilities for pupils with Down's syndrome was shown within the sample. All pupils had been accessing a variety of reading schemes within their schools, and had a range of reading skills.

## **Method**

An initial meeting, a review meeting (halfway through the project) and a final meeting took place. Key people from each of the schools (Special Educational Needs Co-ordinators (SENCOs) and Higher Level Teaching Assistants (HLTAs)) took responsibility for directing and managing the project, and collecting data within their schools. Educational



Psychologists undertook a reading assessment of pupils' involved in the project.

We were interested not only in how the scheme did or did not progress the pupils' reading, but also in pupils and staff comment on content, commercial value for money, layout etc of the scheme compared to other reading schemes used by the schools.

Following an initial meeting and assessment by the schools of the pupil's reading ability, Marie took on board our suggestions and developed a really useful checklist for scoring competence for reading across the series which we then used – this provided a grid next to each word in the series 'reads/signs, understands, uses word in conversations, understood by familiar listeners'. This was felt to be particularly useful as words learned in reading should then be used in speech, (Buckley et al 2002). We added additional columns for 'spells, copies and writes' next to each of the word grids.

We were unable to use a control group of pupils with Down's syndrome as being a low incidence group we were unable to match within the schools. However, we feel that the

results obtained do give useful feedback about the scheme.

A baseline assessment for all pupils was done at the start of the scheme in June 2006. The British Ability Scales (BAS) Word Reading test was used in June the beginning of the project, and the pupils were retested halfway through and at the end of the project. Schools also provided information about the pupils reading abilities from their own assessments, again during the phases of the project.

It was agreed to start each pupil on the first pack of books irrelevant to their reading levels to gauge enjoyment, ability etc, and to provide a baseline of the words in the scheme that pupils could already read before the teaching began. Each pupil used the scheme on a daily basis for up to fifteen minutes a day, depending on the pupils' ability to concentrate. A whole word approach was used where the pupil was encouraged to match words, then select words and finally name the words.

The phonic work cards and games were also to be used concurrently where appropriate for the child. Schools were also encouraged to use



**Table 1 – initial assessment of reading ability using BAS Word Reading Test**

Pupil	School	Chronological Age (June 06)	Year group – Sept 06	BAS WORD June 06	POPS words read June 06	POPS words read Jan 07
A	1	11y 4m	Yr 7 in 6	6.5 yrs	Words assessed over the term	180
B	1	10y 8m	Yr 6in 5	6.10 yrs	Ditto	139
C	1	6y 11m	Yr 3in 2	5.5 yrs	10	58
D	2	9 y	Yr 5 in Yr 4	Unable to score	0	25
E	2	4y 11m	Yr 1 in Reception	Too young N/A	Introduced – none read	Unable to access
F	3	9y 5m	Yr 5 in yr 2/3	Unable to score	0	0
G	3	7y3m	Yr 3 in yr 2/3	6.9 yrs Average for her age	Read most words of whole scheme	Reads all words except 3

the scheme with other failing readers as they felt appropriate but scores of reading abilities for these pupils was not recorded. We also asked the schools to think about how they would measure comprehension of the reading tasks.

## Results

Table 1 shows the age distribution of the pupils across the three schools and their initial scoring on the BAS word reading test. Subsequent retest

during the course of the project and at the end of the project showed that this reading test was too gross to measure the reading improvement of the pupils, except for Pupil G, reflecting only minimum movement of a month or no movement in scores, so it was decided to use a format that better reflected the pupils' progress.

This was the number of words learned on the POPS scheme for each pupil during the period, together with information about the pupils' reading ability gained from the assessments by

**Table 2 – Pupils' phonic abilities and key words learned (December 2006 EP)**

Pupil	Phonics learned	Key Words known
A	Recognises most letter sounds but unable to say some due to speech and language difficulties.	Able to read 90 of 100 first key words – pupil signed words to TA who informed EP if correct or not.
B	N/A	N/A
C	Recognises 17 letter sounds - not /l/, /u/, /q/, /k/, /v/, /p/, /j/, /y/, /z/.	N/A
D	Able to sound out most of letter sounds. Sometimes reverses letters - /q/ for /p/, and /d/ for /b/. May say the letter names instead of the sounds. Sounds out VC of CVC words.	June 2006 = 2 December 2006 = 16 key words January 2007 – Salford Reading Test 6.2 years
E	Pupil too young to be assessed	Pupil too young to be assessed
F	Knows all the Jolly Phonics actions and about 30 of the sounds	Not yet able to recognise any of the words in the books but recognises words that are relevant to him e.g. his name, mummy, daddy etc
G	Knows most letter sounds – struggles with /q/, /e/, /w/, /y/, /x/. Tends to reverse /b/ and /d/. Sounds out some words, final blends difficult. Identifies initial sounds of verbally presented words.	Key words reading list yr 1 /2 == 192/204 Spells 25 of 45 first key words

the EPs and schools. Many of the words learned on the scheme were not in the BAS word reading test, and as phonic word building was not a strength of the cohort although good attempts were made to read the words they did not reflect the advances made by the pupils.

The following profiles from the EP assessments and school reports give more detailed information about each pupil. The assessments were carried out in December 2006.

### **Pupil A (11 y 4 m)**

Pupil A has a visual and hearing impairment and uses British Sign Language (BSL) to assist her communication. She reads one-to-one with a teaching assistant on a regular basis. A typical session involves sharing the book together, looking for Boo the elephant on each page, discussing the text and matching the word cards with the words in the book.

Reading is a particular strength, but she does have difficulty with comprehension. She uses whole word strategies when reading rather than phonic strategies. The TA feels that Pupil A's vocabulary has increased (more than her reading ability) since reading the POP's books. However, she did also explain that she would like to see books that are more age appropriate e.g. with more text on each page.

Pupil A is the oldest child to trial the books (she was in Year 6). The books in stage 3 and 4 were of the correct reading age for her level. She enjoyed the books and the illustrations. She takes a very clear whole word approach to reading and enjoyed the lotto games. Due to severe speech difficulty it was not possible for her to develop the phonic approach of this scheme as she is unable to pronounce many of the sounds. The school felt that at the age of 12, this child needed photographs of real life situations more and that this would give the books more realism for her.

### **Pupil B (10y 8m)**

At first Pupil B found the POPs books too 'babyish' and she would push them away saying they were 'boring'. However she became more motivated when introduced to the books in Packs 3 and 4 as they were more age appropriate and she enjoys matching the words using the cards. Her TA explained that Pupil B had some good reading skills before using the POPs books and she does not feel that the books have improved Pupil B's reading skills any further. She does however; think that the books have improved Pupil B's vocabulary as she has learnt the meaning of a number of new words.

Pupil B has some difficulty remaining focussed on teacher directed tasks and was often reluctant to read. She was reading slightly

above the level of most of the texts and tended to read them very fast. This child appeared to be influenced greatly by the infant nature of the pictures and games and felt that they were a little 'babyish'. The trial of this scheme may have been influenced by the child's fascination with Oxford Reading Tree books which she carries around the school with her.

### **Pupil C (6y 11m)**

When asked about the POPs books Pupil C said that 'they are fun' and that her favourite book is called 'The Jumping Game'.

Pupil C was thoroughly engaged by the books, enthusiastic about carrying out the activities and was able to progress well in her phonic skills with the help of the scheme. The books were so popular that her mother bought the books for her to read at home. The lotto games were a good starting point to further develop her high frequency word knowledge.

### **Pupil D (9y)**

School had focused on a pure phonics approach but had found that Pupil D had made little progress. This manifested itself in little interest in books, with little or no recognition of writing, difficulties in behaviour and reluctance to engage in work.

The scheme was used in the daily literacy lesson, starting with the reading books. A typical procedure was to start with initially reading the first page, then browsing through the book looking at the pictures, discussing them and looking for the red elephant. Next the pupil would work alongside her teaching assistant in looking at the key words at the bottom of the page and matching them with the flashcards. Once these words were secure, they would move on to the main bit of the story. This was read to Pupil D who had the opportunity to read the key words before moving onto the common words. When Pupil D demonstrated that she could read the book through on her own and was able to read all the words in the back of each book, the next book on the series was chosen.

Prompting and reinforcement were made with signing, vocalising the words, and looking at



the pictures and context. Pupil D used lotto for word recognition and the sentence sound cards. Sentences using the words Pupil D had learnt were also made up. The phonic slider in conjunction with the phonic family set was also used, where she has to say the word on the slider and then match it to the flash cards which she then turned over and read the sentence. This proved to be successful. The progression that Pupil D had made since starting this reading scheme has been immense - not just in her reading but in other areas of her development such as with her confidence and self esteem, her behaviour, her writing skills, and her numeracy skills.

She could read the VC and CVC words from the assessment of phonological skills. Pupil D's approach to learning has also changed. She now approaches literacy with confidence and is interested in books. In writing, she now engages with the printed material. She has now developed an ability to write words and it was possible to make out the words 'nose' and 'eyes'. Previously to this reading scheme, pupil D would have been engaged in just scribbling or at best drawing circles. Other benefits are that she focuses more at a task. She is also less likely to refuse to do work and appears less stubborn.

### ***Pupil E (4y 11 m)***

Pupil E had only just started school in September 2006, and although introduced to the scheme, she showed no interest in learning from it. School, quite rightly, felt that they should concentrate on settling her into the routines of the class and school, just as they were doing with the other new entrants. Pupil E was therefore not included further in the project.

### ***Pupil F (9y 5m)***

Pupil F has limited language and relies heavily on signs to communicate. He has dual diagnosis of Autism/DS, and relies very much on the 1:1 support afforded to him in this class. He is also visiting a Special school where he spends half a day working in a small class of 8 pupils.

Pupil F has accessed the reading scheme when he has been cooperative, and has been able to

word match, use corresponding signs and has searched for the elephant. He is unable at the moment to engage with the text independently but has shown interest and enjoyment having the books read to him. He showed more interest, however, when the sentences were short on each page as this held his interest for longer.

The initial letter was used primarily as the decoding tool for Pupil F, but this was made difficult when the names of the characters were the same initial letter i.e. Ben and Bella, Milly and Mum.

He was able to discuss the pictures and signed what was happening in each picture, e.g. for a picture of a child in bed, he signed 'sleeping'. The teaching assistant would then model this back to Pupil F as a whole sentence 'Yes, they are sleeping.' He enjoyed matching the words and was able to select the correct word when given a choice of three. Initially Pupil F would often choose the wrong word (usually one that had the same initial letter). However if prompted to check, he was able to recognise that it was incorrect and could then find the correct word.

### ***Pupil G (7y 3m)***

Pupil G reads one-to-one with a teaching assistant for 10-15 minutes most days. This involves sharing a book together and matching and reading the key words both in and out of context. She clearly enjoys the POPS scheme and is motivated to read the books. She read fluently and points to the words as she reads them. She can remember some of the characters names, although at times she mixed up which name went with which picture. She found the book quite funny and was keen to point out the funny bits to her TA. She could answer comprehension questions about the pictures and with some support was able to make predictions about what might happen next. When talking to me after the session Pupil G was able to recall what the book had been about and what had happened at the end.

She was able to match key words on each page and at the end of the book could match all of the key words printed on the page. She was



also able to read all of the words out of context. School report that Pupil G is also beginning to spell some of the words and to put the words into a sentence.

Pupil G has always enjoyed and excelled in her reading ability compared with her ability in other curriculum areas. She loves all books and engages particularly well with non-fiction. She derives a great deal of pleasure from reading and delights in being able to participate fully and independently. The materials were of a very high quality and certainly appealed to Pupil G. She continued to thoroughly enjoy reading all the stage one books which presented little challenge for her, but still continued to enjoy playing the games, matching words and sentences.

In January 2007 – Pupil G read all the Baseline Assessment of Common Words in Pack 1, Pack 2 (except *watch* she said *witch*, *naughty* she said *night*), Pack 3 (except *silly* she said *sly*), Pack 4 (except *burger* which she sounded out correctly).

**BAS word reading test**

Date	Word reading age
28.6.06	6.9
19.9.06	7.0
25.1.07	7.4

Pupil G has made 7 months progress in 7 months on a standardised test which reflects her ability – average for her age. It is nonetheless a very commendable rate of progress. It is difficult to measure the success of the reading scheme in isolation, as Pupil G continued to participate in all aspects of learning and has the additional opportunity to read a range of texts as her ability allows her to do so. However, the scheme has proved successful and integrates well with the other reading schemes used in school. Pupil G has a natural ability with reading and has still managed to enjoy the POPs scheme, even though it is clearly designed for low ability readers.

Pupil G says about the books: *‘I love them because they are different. It’s a square book. Lots of pictures. Easy!’*

**Feedback from schools**

- When schools were offered the chance to pilot the Red Elephant scheme, staff were excited at the prospect of books which were relevant to the children and at the correct level of reading. They were not disappointed and found the scheme colourful and detailed with plenty of kinaesthetic activity with the slider, sentence cards and lotto games.
- One of the children has significant visual difficulties and school found that the books were well designed to ensure that size of print and access were good.
- **Value for money** - Most reading schemes are very expensive and therefore the price of this scheme did not seem unreasonable. It was suggested that the lotto word cards could come in a pack with the books instead of separately even if this increased the cost as some schools may buy the books only due to finances and lose out on this valuable part of the scheme.
- **Illustrations** – The illustrations have captured the imagination of some of the younger readers. As the complexity of the text increases maybe a pack 5 and 6 would have stories of life skills and people at work.
- **Appropriateness of stories** – one school felt that some of the content of the stories was fun but a little inappropriate for children with Down's syndrome in school. They did not use 'Belly Button Painting' and 'The Lost Keys' at the request of several parents who did not want the children to copy these behaviours. This view was not supported by the other two schools who felt that discussion whilst reading the stories would establish the 'rights and wrongs' of the content.
- **Lotto game** – The lotto game at the back of the book was very popular. It would be helpful to produce a pack of words to match to all the words in the sentence, especially for those children with speech and language difficulties.



- **'Finding the Elephant'** on each page of every story was a huge success with all pupils and kept them motivated.
- **Comprehension** - Many of the children who have used these books during the trial, have some issues in terms of language and reading comprehension. A good extension from these books would be comprehension activities linked to each book. Comprehension was tested using 'book talk' at the end of the story – pupils' were relating words to other books e.g. 'That word was in Kal's baby'.
- This could provide a benchmark for Key Stage 1 SATS and pupils would be able to be moderated against level 1.
- More age appropriate stories for Key Stage 2, especially years 5 and 6.
- Extending the range to include secondary school key stages with age appropriate stories.
- Overlapping into non-fiction and life skills using photos and text and including self help, independence, shopping, crossing the road etc.
- Comprehension cards and games to be developed for each series and each book. Format could be a box at the end of the story with key questions, choice answers, and cloze procedure.
- Games could be developed using a fun format e.g. keys that open a room door where the key words are found.
- It would be beneficial to develop software for the scheme, particularly as it benefits pupils who are visual/kinaesthetic learners.
- A symbolised version of the reading scheme would be invaluable for those pupils who are unable to access print using the standard format.

## Recommendations

As evidenced from the qualitative data, the trial proved to be quite a success.

The team came up with a number of suggestions:

- The range of books offered extending beyond the current level 4, possibly developing comprehension and with more life skills and photograph use for pictures.

## Conclusions

- The scheme was flexible enough to use for each of the pupils' involved whatever their level of reading ability.
- POPS is a resource for many children with Special Educational Needs and is definitely a useful scheme to have in schools.
- Other pupils introduced successfully to POPS by the three schools included pupils who were not accessing reading through teaching phonics, pupils with autism, dyspraxic pupils, pupils with communication difficulties and pupils not responding to additional input for reading e.g. Reading Recovery. All pupils were reported to have made progress using POPS after being unsuccessful on other reading schemes.
- Pupil enjoyment is high.
- The scheme plays to strengths of visual/kinaesthetic learners
- The content is appropriate to children's experiences.
- Success in reading POPS provided a knock on effect for improved behaviour, self-esteem and attitude to learning.
- POPS makes pupils keen to read, and is viewed as something that is fun and special and is something that they can achieve. Some children on the project had never achieved in reading until POPS was introduced.
- The scheme provides quality resources – 'chunky', laminated cards so teacher/TA time is not wasted refining resources.

- The small steps progression within the series enables children to be successful in their reading.
- Vocabulary is reinforced because common words are revisited in each series.
- Words learned in books are retained and used in another context by pupils
- Functional words have been used imaginatively and the scheme has not 'played safe' by limiting the vocabulary and content of the stories which are also familiar to children's own experiences e.g. 'furniture, favourite, dirty, smelly'.
- POPS empowered the most able reader in the project to start asking questions herself about the story e.g. 'Why is daddy cross?' in Millie's Doll's House, and then was able to reason that this was because first he made things too small and then too big.
- The POPS scheme provided a means for the pupils to re-engage with the synthetic phonics strategy being taught in the schools.

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