
Learning to read at an early age

Case study of a Dutch boy

Erik A B de Graaf

*Stichting Down's Syndroom
Wanneperveen
The Netherlands*

If children with Down's syndrome have overcome the difficulties with their health in their first years of life, speech development is their main problem area. Research from English speaking countries has proved, that with them one can start with teaching reading at the age of three or four, even before they start to speak, how peculiar this may sound. The advantages are that the very first bit of reading proficiency might be used to increase speech production, to train syntax and to improve articulation. The primary objective here clearly is reading to speak.

A case study is presented of a boy with Down's syndrome between the ages of 3 and 8. We gratefully acknowledge the use of a video camera and recorder which was donated to us in 1985 by the Philips Company of Eindhoven. What follows can hardly be more of a summary of the experiences we have had in the last five years.

The Test Person

Acknowledgement

The author wishes to express his thanks to Mrs S Tonkens-Hart who corrected the English.

© 1993,1999. The Down Syndrome Educational Trust
Down Syndrome Research and Practice
1993, 1 (2) 87-90

The test person, the son of the authors of this article, David de Graaf, was born on February 29th, 1984. To better illustrate his point of departure at the time of the start of the reading programme, we quote a test with the Bayley Developmental Scales (2-30) he was subjected to. It was carried out on April 28th, 1987 by a staff member of the Department of Special Education of Groningen University. At that time David was 38 months of age.

"David is a little boy with Down's syndrome. He is small for his age and makes a younger impression than three years...."

"The development of active language has scarcely started. During the test no clear words were heard, also few language /sound utterances....According to his mother, David only says "bah"(poo) and "boem"(boom) clearly....David doesn't listen to verbal instruction very well. In particular, his behaviours are usually reaction to something he has seen or heard. David knows various words, like ball and clock, right".

"At a chronological age of more than 3 years David reached a test age of 19 months on the Mental Scale. If the language items are left out the mental test age is 22 months. On the Motor Scale David reaches a test age of 19-21 months. His development is delayed in the mental as well as the motor domain. There are certainly further developmental possibilities for David but, in relation to his chronological age, we have to speak of a considerable delay. Generally speaking, David seems to develop fairly harmoniously. In both domains (mental, motor) about the same levels have been found. There are no large distinct ups and downs, apart from the development of active language...."

Converted, the foregoing means that David at the moment of the test had an IQ of 50. Cunningham (1987) mentions in his book a level of 55 to 60 as a generally accepted average for the IQ of children with Down's syndrome. So David came out below that. As such, he certainly was no "child prodigy".

Experiences

Portsmouth and Macquarie

Roughly at the time of David's first birthday we learned about the ideas of Doman (Doman, 1964). He convinced us of the idea to teach David to read early, even if we were dissuaded to do so from various people with much emphasis, but with not very convincing arguments. At that time we ourselves only thought in terms of reading to read. Around his second birthday, we received our first video tape about reading from Portsmouth Polytechnic and also some relevant literature (a. o. Buckley, 1984 and 1985). Because of that video we literally saw for ourselves that it really was possible. It made us understand how much reading could help to promote speech development: reading to talk. The actual method in fact could be taken together in four basic steps, that had to be applied to pictures first and to whole words later on: "matching", "selecting", "naming" and "comprehending". At the 3rd International Down's Syndrome Congress in Brighton, in April 1986, we not only personally met Sue Buckley from Portsmouth Polytechnic, but also Moira Pieterse from Macquarie University in Sydney. The latter also showed

impressive video material of little children with Down's syndrome reading. We asked her to send us her method from Australia. Later we learned that Buckley's method to a large extent was a development of the method from Macquarie University in Sydney.

Both last mentioned methods appealed much more to us than that of Doman. So with David at an age of 2 years and 9 months we made a first attempt to let him match loose memory cards (Ravensburger). That went wonderfully well. Some weeks thereafter we tried a Lottino game (Ravensburger). To our astonishment David proved to be able to make that step without any problem.

At the age of 2 years and 10 months, David became confronted for the very first time with simple home made word lotto's. Following Doman, at that time our letters were very big (and coloured red). The first words were "mummy" and "daddy". After some initial difficulties (also due to the fact that these words looked too much alike for the beginners state, as we understand now) David also picked that up very quickly, particularly when the choice became somewhat bigger and therefore apparently more enjoyable.

Around David's third birthday we also made a large letter lotto. While working with that David started to pronounce several letters. In that way we could verify for half the phonemes of the Dutch language whether David was able to pronounce them. Because he had so little speech, almost nothing apart from some imitations of animal sounds, that information was extraordinarily welcome at that time.

When David was 3 years and 4 months old we succeeded for the very first time in having him return word cards named by us ("selecting"). That became the major activity of his reading programme for the next period of time. Besides we cut the size of the letters of his word lotto's as well as his letter lotto's in half. Due to that our materials became much easier to handle.

Naming failed to occur initially

How energetically we exercised, no matter how well David learned to match and select, naming the cards failed to occur initially, as well as further development of his speech. Yet we regularly assessed his knowledge of the words we used by holding the cards up in front of him without naming them and asking him to get or to point at that particular item. He did that very well. So, in fact comprehending was in advance of naming. (That could be the case with many children with Down's syndrome.) As a result, progressing further through his reading program slowed down considerably. Contrary to the guidelines of the Macquarie Program, that had been translated into Dutch by us in the meantime (Cairnes en Pieterse, 1988), we made an attempt to improve the situation by emphasising letter lottos. However, we didn't arrive at the result we desired so dearly.

After David had reached the age of four, the break through began only very gradually by having him also name cards. After advice by Moira Pieterse herself, the second author of the Macquarie Reading Program, who was in the Netherlands at the time, from then on we concentrated primarily on learning to name words that he knew already, thereby moving the letter lotto into the background for some time.

At that time we also introduced his first personal reading

book: a large ring binder having a picture of a person, an object etc., with the corresponding word card on every page. All pictures were covered by a piece of paper, stuck to the page along one side. David had to read the word first, e.g. "on". Subsequently, he was allowed to uncover the paper over the corresponding picture and saw e.g. a photograph of himself sitting on the shoulders of his dad, as a reinforcement.

At the age of four and a half, he spoke about 70 words. He could also "read" most of them and often combined them into little sentences. At that time his spontaneous speech mainly consisted of single words. Sometimes when he was unable to say a particular word, he would spontaneously point at its meaning, e.g. with "lip" and "eye".

Learning to read confidently

At the age of 4 years and 8 months, besides using the words from David's own perception of the environment, we began to match in lotto form with the first words from Holland's leading structured regular school reading method "Learning to read safely" (Veilig leren lezen, Zwijssen, Tilburg): "tree", "rose", "fish" etc. First we introduced words which we were certain that he would know the meaning of, e.g. "school" and "eat" instead of "weigh" and "sam".

After a few days he could select the first six perfectly well, as we had expected. However, again their naming failed to occur. About the same time he began repeating individual letters named by us, all by himself. For us, nothing more remained than building upon his own still severely limited spontaneous speech.

As such the reading programme "Learning to read confidently" moved into the background again for some time. Because of that, we further extended his personal reading books by adding drawings of words from his own vocabulary with computer printer texts like: "car and trailer", "boat on trailer" or, more difficult (in Dutch): "tea with bread", "peanut butter on bread", "bread bite off" etc. underneath. After some initial problems he began to "read" such little sentences reasonably fluently around the time of his fifth birthday. The fact that he knew the reading direction almost faultlessly in the meantime was remarkable. Of course, that was the great advantage when making work sheets, learning to count etc.

Analysis and synthesis

At an age of four and a half we had already made the attempt to teach David to say the word "oma" (granny). At that time we were only successful after exercising the sound synthesis "o-m-a" very frequently with him. We tried a similar thing a few months later with the word "oog" (eye), which he knew receptively very well already for many months, but which he refused to say.

As soon as he knew the letters "oo" and "g", and could programme them, we exercised their synthesis for a number of days leading to a strikingly well articulated "oog" (eye). Shortly thereafter we were successful with another word David never spoke: "aap" (ape).

Even before his fifth birthday David analysed very unexpectedly and entirely spontaneously the word "raam" (window), which he knew very well receptively as "r-aa-p",

and immediately corrected the "p" into an "m". From that moment on, we began busily and successfully exercising analysis and synthesis of CVC words from his own vocabulary, like "paal" (pole), "hoop" (heap), "bier" (beer) etc.

At the age of 5 years and 8 months David could spontaneously pronounce all graphemes of the Dutch language, including the double graphemes (and with exception of the very rare ones, "c", "q" and "x"), without having to think long. Besides he "read" much more than 100 words.

Exercise, exercise, exercise

From the time David knew all his letters, a period started in which we strived at exercising analysis and synthesis on the one hand, while maintaining and also increasing his knowledge of whole words on the other. As far as the analysis of words was concerned, the size of the constituent letters appeared to have a very distinct influence. Words with a letter height of say, 3 cm were much more often analysed spontaneously by him than words with a letter height of say, 1.5 cm. That had nothing to do with his vision, because he was perfectly able to distinguish familiar words with a letter height of less than 2 mm. Next to our home-made cards, the cards of another Dutch primary school reader, "Reading all by myself" (Zelf leren lezen, Stenvert, Apeldoorn), with next to the large word a picture that could be folded into view only after reading the word, proved to be very useful.

While working with the whole words, our goal was to make a card for every new word that appeared in his spontaneous speech. Those cards were then combined into little sentences and shown to him. Often he enjoyed this "game" more if the sentences were longer. With the increase of the number of words from his own vocabulary he recognised visually, in practice the "management" of that word stock became to be a more difficult problem.

How does one, as quickly as possible, while the child's attention is not fading, combine a number of words into attractive sentences, while simultaneously all relatively new words have to appear frequently, whereas the more familiar ones have to be repeated only every now and then? As the number of cards in the little box grew above 100 that became increasingly difficult. A certain superficiality was the unavoidable result.

Group 3

At 4 years and 7 months, David went up to group 1 (in conjunction with group 2, the former pre school kindergarten for children between 4 and 6 years of age and since 1985 an integral part of the primary school) of the regular "mainstream" primary school in our village. At the suggestion of teaching personnel, he spent two years in group 1 before moving on to group 2. In his third year in this former kindergarten, learning social skills had top priority. The result was that attention to his reading proficiency was negligible.

Yet it is worth noting that at the age of 5 years and 8 months, for the first time, David carried with him a text in large computer printer letters to be read before the group during the early morning group discussion. It was about a little trip the previous weekend: "David daddy eat French fries" as well as "David daddy on the boat". Normally he never had anything to say during that group discussion. Not only was

his reading in that particular situation such a success that we repeated it with a certain regularity; it also resulted in a real turning point in the attitude of the school teachers as far as David's possibilities in the future were concerned.

During David's one year in group 2 we made an attempt to have him work at home with the letter box of "Learning to read safely". But that was very unsuccessful. The underlying case was a motor problem. The little plastic cards with individual letters were much too small for David to handle. Because of that at the end of group 2, we made a scaled up version of those tiny letter cards in cardboard, the height of the letters now being 4 cm instead of the original 4 mm. That appeared to be the next breakthrough for which we had waited. David could now exercise his heart out by making words all by himself. In this way we trained him as much as possible all of the 35 words from book 1 from "Learning to read safely" that would be introduced right at the start of group 3 (the former first class). That also meant teaching him a lot of new words and we were successful at doing that.

As such, book 1 neither in class nor in resource room, did produce real problems. Very much on the contrary so, as we had expected, David appeared to be stimulated very much by all activities around him in the class aimed towards learning to read. Furthermore, we took great care to help him to remain a bit a head of the group from then on. That wasn't too great an effort. Stumbling blocks were the very many words that had nothing in common with David's daily experience. Neither "Little Snow White", nor "The Weigh (!) is nice" meant anything to David. And if we taught him what a "mus" (sparrow) was, and he had learned to read and spell that particular word, it was very confusing for him to be confronted all at once with a magician also called "mus".

However, from book 3 all these problems were over. The higher books are much more down to earth than the first two. In the mean time, at home, we have also devoted a considerable amount of time (as a total measured over the months) at teaching him capital letters, again by using our large cardboard letter cards in "Learning to read safely" lay out. Due to that, book 4, which the children are bound to read near the end of group 3, but which David will start months ahead of them, will be unlikely to pose any specific problems.

Time spent

As far as the time spent, we can state that in the past five years, since the first picture "matching", we only gave a few minutes per day on average structured attention to early reading as a tool for learning to speak. We always did that in the form of a little, varying game, that was enjoyed by David most of the time.

To give a few examples, initially we were very content to have him match say, six word card. Later on we were glad when he named some five word cards, and somewhat later again, some five individual letters, at every session. Upon reaching a higher degree of mastery this "target production" also went up. So, some five word cards became some five little sentences and later on five long sentences. At the present time, having reached the real reading phase, initially we crossed our fingers for one page per reading day. In the mean time he already reads some 3 or 4 at home, apart from

his reading at school.

The net result

When we draw up the balance conclude that:

1. picture "matching" itself has contributed significantly to David's receptive vocabulary,
2. at a very early stage he proved to be able to distinguish words and, somewhat later on, individual letters also,
3. at a relatively early stage, certainly before he began to speak, he clearly appeared to be able to imitate many individual letter sounds,
4. as a result of all his reading, he gets a great deal of extra training in saying words that he would not say, or rather less frequently, and certainly not in little sentences,
5. he has learned to start at the top of a page as well as to follow the reading direction; that also is of great advantage when making worksheets and as a strategy for counting irregularly grouped items etc.,
6. his knowledge is now generalised spontaneously, initially for example by pronouncing the "P" of a parking space sign or reading "bus" on the road surface and now by reading for example "odere?" on a deodorant stick or "KADETT" on the back of a car.
7. at the age of 8 years, as far as reading is concerned, he is still ahead of the level of his class (group 3 regular school),
8. the synthesis of words out of individual letters, and the resulting improvement in his pronunciation, has become a very important tool in his speech therapy,
9. the analysis of words in individual letters has become daily routine
10. we can check his vision, as often as we want to, by means of word cards

Finally, we would like to explain that it is an almost magic experience to hear your own child, who can only master sentences of two words in his spontaneous speech, read with devotion sentences like: "the heap and the pee in the potty" even if these words are badly pronounced. The same holds for words 'he' or 'she' could never say as a verbal imitation, but which are mastered as a synthesis of individual

letters read by the child. At a later stage it is nothing less than a wonder to hear a child with only very limited spontaneous speech, read a few good understandable pages about Tom Thumb or out of any other book at his reading level.

We conclude by repeating an expectation that we expressed in 1989 at a another symposium that, within a few years, Dutch research will have proved the usefulness of early reading for children with developmental delays. However, we would certainly discourage all parents and professionals with the strongest possible emphasis from waiting for the results of that research before starting to experiment on their own. If they do, many children would miss chances.

If even we, as inexperienced parents with their first child, not hindered by any professional knowledge and against all emphatic recommendations, have been able to reach the foregoing results, then with the proper support, in the future many children with Down's syndrome should be able to reach the same reading proficiency earlier or a higher proficiency at the same age as our David has now.

References

Buckley, S. (1984) *Reading & language development in children with Down's syndrome: A guide for parents and teachers*, Portsmouth Polytechnic, Portsmouth, England (this booklet belongs to a video)

Buckley, S. (1985) Attaining basic educational skills: Reading, writing and number. In Lane, D. and Stratford, B., (Eds) *Current approaches to Down's syndrome*, Holt, Rinehart and Winston, London

Cairns, S. and Pieterse, M., (1979) *The Macquarie Program for Developmentally Delayed Children, Reading Program*, Macquarie University, Special Education Centre, North Ryde, NSW, Australia

Cunningham, C. (1987) *Down's Syndrome: An introduction for parents*, Human Horizon Series, Souvenir Press, London, England

Doman, G. (1964) *How to teach your baby to read*, Random House, New York, USA

Journal of Practical Approaches to Developmental Handicap

c/o Rehabilitation Studies
 4th Floor, Education Tower
 The University of Calgary
 2500 University Drive, N.W.
 Calgary, Alberta
 Canada T2N 1N4

Editor: Dr Roy Brown

This Journal now produces issues on special topics

Price

Individuals in Canada	\$11.00
Institutions in Canada	\$14.00
Individuals/Institutions outside Canada	\$16.00
Back Issues per copy	\$5.00
Back Orders of Special Issues per copy	\$6.00

Current Issues:

- Cognitive Application in Rehabilitation Vol. 11(2)
- Aging and Disabilities Vol. 12(2)
- The Arts and Disabilities Vol. 13(2)
- Women and Disabilities Vol. 14(2)

Upcoming Issues:

- Prader-Willi Syndrome
- Personnel Preparation