

Research

PROJECT AT SUDBURY PRIMARY SCHOOL, WEMBLEY, U.K.

CAN AN EFFICIENT, COMPREHENSIVE AND PRODUCTIVE NEURODEVELOPMENTAL PROGRAM BE DEVELOPED FOR GENERAL WHOLE CLASS USE?

SEPTEMBER 2006 – JULY 2007

by Tamara Nathan

In May 1996 a Literacy Task Force was established by David Blunkett, Shadow Secretary of State for Education and Employment. This Task Force, headed by Professor Michael Barber, was charged with developing a strategy for substantially raising standards of literacy in primary schools in England over a five to ten year period. To this end many millions of pounds were spent.

On 29th November 2007 The Guardian Newspaper confirmed that England had plummeted from third to nineteenth in an international league table of children's literacy levels.

In their quest to help these primary school children many schools in England now involve them in some form of neurodevelopmental work. However, much of this work is at an Interhemispheric Integration level and few reach the core skills. The programs that do reach some core areas tend not to look at the individual comprehensively and so the interhemispheric integration level is not considered fully. In addition these programs often take quite a lot of time out of each academic day.

My neurodevelopmental work is specific to the individual and the challenge was to see whether I could produce a simple but comprehensive program that attends to the deeper levels of necessary skills, such as the vestibular or proprioceptive systems, as well as interhemispheric integration. It would be vital that the program be easily administered, time efficient, not interfere in any way with the teaching program, be general to the whole class and require no testing. The purpose of the program would be to raise academic levels, primarily in literacy but also numeracy.

TARGETTED CLASS

- Year 1 (5-6 year olds) in a local authority London school – Sudbury Primary School, Wembley.
- Class teacher - Stan Cripps, who had some basic knowledge of neurodevelopmental work.
- Out of three mixed parallel classes the one used was thought to have generally the neediest children.
- Our overview during the two weeks of initial testing (early September 2006) was that these children were fairly disorganised as a group and certainly, in the main, rather immature.
- We had 23 children available for testing at the beginning and end of the academic year. Two children were considered to have quite severe problems and for them an individual program would be necessary. This was not the purpose of our project and so for this reason these particular children were excluded from the trial.

THE PROGRAM

This consisted of a mixture of developmental programs:

- **The HANDLE® Institute** – This institute advocates *strengthening neurological function without producing stress. Movement activities, performed briefly, are used to work on the underlying neurological systems. This results in a shift in the person’s neurodevelopmental differences which have interfered with processing, leading to improved academics, organisation, efficiency and social interaction.*
- **The Listening Program** – This approach uses psycho acoustically modified music and patent-pending production techniques which are designed to stimulate or “exercise” the different functions of the auditory processing system. It enables the brain to better receive, process, store and utilize the valuable information provided through the varied soundscapes in our lives such as music, language and the environment in which we live.
- **Write from the Start** – Teodorescu’s writing program targets fine-motor control and various aspects of visual and spatial understanding.

PROGRAM IMPLEMENTATION

There was a core of activities which took place each and every school day. We had hoped that some others which were more appropriate to follow during PE time and therefore only covered perhaps once a week would also be possible. However, this proved too difficult to instigate

regularly and indeed was abandoned before we were well into the academic year. For this reason we shall ignore this minor input.

The daily tasks:

The HANDLE® Institute Activities

- Crazy Straw – special mugs provided
- Side-To-Side Tip – adapted
- Ball Back Roll – adapted
- Blanket Roll – adapted
- Hug And Tug
- Sunrise-Sunset – adapted

The Listening Program

The music played daily for 15 minutes through open listening in the classroom was Full Spectrum.

Write from the Start Program

One sheet completed every day (during registration time).

TESTING

For the sole purpose of this trial it was necessary to pre- and post-test the children.

As the children we had access to were rather young, we were interested not only in the academic levels (some being at a level too low to score) but also levels of various underlying skills necessary for good academic performance.

Each child was tested for:

- **Auditory Sequential Memory – The HANDLE® Institute** - quick test which involves the child repeating nonsense syllables.
- **Visual-Motor Integration – Beery Buktenica VMI test** – easy to administer, the child is required to copy various shapes – it is a timed exercise.

- **Fine-Motor Coordination – Beery Buktenica Motor test** – easy to administer, a maximum 5 minute task where the child is required to draw lines precisely inside pathways that make various shapes.
- **General Visual Perception – Beery Buktenica Visual Perception test** – a 3 minute test which requires the child to choose exactly the same shape as the target shape from a number of shapes where they may be different in size or form.
- **Graded Arithmetic-Mathematics Test – Vernon and Miller** – this test covers a numeracy age of 5 to 12 years. On initial testing 3 children in our sample were unable to reach a 5 year level.
- **Graded Word Spelling Test – Daniels and Diack** – this test covers spelling ages of 5 to 12.3 years. 9 out of the 21 children in our sample did not reach the 5 year level on initial testing.
- **Standard Sentence Reading Test – Daniels and Diack** – this test covers reading ages of 5 to 9 years. 15 out of the 21 children in our sample were unable to reach the 5 year old level on initial testing.

It should also be noted that we were controlled by the following:

- Testing took place in less than perfect circumstances – sometimes in a hallway with other children passing by.
- This was in no way a blind test.
- We were controlled by the fact that all activities would have to be overseen in the class group by the class teacher without support. It was clear that it was impossible for him to make sure that all children were following the activities appropriately and so on many occasions the very children that most needed this support missed out by being unable to follow properly, being distracted by others and some were not doing the activities at all.
- All activities would have to be class group appropriate, take little time and be easy to follow and control.
- The program would have to allow for children being absent and able to drop back into the program and for the children to be relatively independent in following the activities.

RESULTS

It should be noted that when a child did not reach the lowest academic score possible in a particular test, for expediency they were given the lowest possible score. As a consequence true growth may be more than actually shown in the results.

**Average growth Sept 2006 to July 2007
(1 academic year; i.e. 10 months)**

Visual-Motor Integration improvement	1 year 9 months
Visual Perception	2 years 1 month
Fine-motor Control	2 years 0 months
Reading	1 year 10 months
Spelling	1 year 7 months
Maths	0 years 7 months

CONCLUSION

Clearly the results are extremely pleasing as, despite the difficulties in making sure that each child was following the program correctly, their underlying performance and literacy skills have grown by well over a year in one academic year.

We were not surprised to find that the growth of maths was disproportionate to the growth in other areas considered. It is particularly difficult to use activities to strengthen proprioception (a necessary skill for proficient maths) as many are inappropriate for in-class instigation. However, it should be noted that vestibular function is one of four of the base skills loop, the others being kinesthesia, muscle tone and proprioception. They are all interrelated and interdependent and as one strengthens so will the others and so there is good reason to believe that with prolonged access to this program the skills will develop through into the area of conceptual maths.

In any event appropriate literacy skills gives a child access to their curriculum and so at this stage is perhaps of greater importance than other academic subjects.

I understand from the school that the form teacher for this class during the academic year 2007-2008 has expressed her delight at the independence, confidence and personality development evidenced by these children. She has stated that when given information they are unusually able to use the information; to think, evaluate and talk about things. One float teacher has noticed that the class has moved on and is the best balanced group in their year. Mr. Cripps feels that they have exceeded his expectations.

FUTURE PROJECTS

It is clear that, in order to take the particular teacher out of the equation, it would now be appropriate to give a program to two out of three parallel classes in perhaps year 2 where all the children should have reached the base levels at the initial testing stage and where the third class would allow for blind testing.

The program instigated for this year group would be minimized because of the constraints of the curriculum at this level. Consideration should also be given to the possibility of inserting a couple of activities into regular PE lessons which would allow the targeting of proprioceptive growth.

This second level of testing should be a proper blind test so that at the end of this a program for any academic year could be prepared in the knowledge that the few minutes spent a day would greatly benefit the growth, both social and academic, of the children in any specific class.

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