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SEVERE LEARNING DISABILITIES

An investigation into the incidence and  
treatment of children failing to reach  
their reading potential.

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requirements for the Degree of Master of Arts  
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by  
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## SECTION 1

### ABSTRACT

During 1976 teachers in Taranaki, as in other parts of New Zealand, were expressing concern for children who appeared to make scant progress in language skills despite the best endeavours of teacher and pupil. Discussions with psychologists and education department officers resulted in a research programme being structured to survey such a group. In view of the then current interest in visual and auditory perception deficiencies which were believed to contribute to learning difficulties, investigations were to be made of several strategies. It was planned to institute proceedings which would not only remedy deficiencies but could also become the basis for preventive action with similar pupils at an earlier age.

At that time teachers were available to allow staffing of the project and so two schools were selected for field trials. Teacher nominations of candidates were tested and groups of children isolated who would benefit from the programme.

Staff training commenced to build up a set of practices which would subsequently be modified as experience was gained. Teachers were also helped to devise monitoring behaviours to ensure adequate and comparable data collection strategies were instituted.

During the investigation, changes in approach were made as programmes developed and from new insights resulting from concurrent reviews of the literature which became available.

Two major shifts occurred, the second resulting in the abandonment of some major precepts concerning remedial programming. Investigations are still proceeding related to the early identification and preventive aspect.

### THE PROPOSAL

It is now time to go back to the beginning. At that stage the writer held certain beliefs on causation and remediation of reading disabilities which became the basis for examining the hypotheses:

- . That learning disabled children present a number of neuro-sensory deficits which led to their disability.
- . That remedial programmes which build up these areas and reading programmes which are tailored to avoid use of those deficits will result in improved performance.

SECTION 2LITERATURE REVIEW

What is normal? How does one describe a slow learner? What are severe learning disabilities?

When setting up the research programme it was often asked why it was decided to work with a group whom many believed did not exist. Indeed Dr Marie Clay has suggested that New Zealand schools should first concentrate on reducing reading failure to less than 5%. These commentaries really proclaim that reading failure is basically due to bad teaching or at least to inappropriate strategies and/or ineffective interventions. With this the writer agrees. It was therefore for this very reason that the Severe Learning Disabilities (SLD) group were sorted out for it was believed that if strategies could be derived which met the needs of these children it would be possible to generalise the programme for pupils who were underachieving for known reasons.

By definition one may say that 49% of all populations attain at a level below the average for their age. Are they slow learners? If one extends the concept of average to cover those attaining between the 25th and 75th percentile, some 25% still attain below average levels, and considerably lower if one were to derive a new median for the attainments of the remaining 75%. Are these the slow learners? Is it sufficient to define those who achieve less as being slow learners?

Are all slow learners mentally retarded? Or are there other causations? Many have been suggested. This investigation set out to investigate the learning disabled syndrome.

What is S L D? Literally, any child with a severe learning disability. However, as any child whose attainment falls significantly below his potential is already described as "retarded", the term is taken to refer to such children for whom no acceptable explanation of causation has been found.

Factors related to learning difficulties are varied and often multiple. For every failing child exhibiting factors believed to be relevant to his failure to learn, other children are found with the same problems who are coping or even doing extremely well.

This has led to the rejection of one cause solutions to learning failure. Often it has been hypothesised that such factors are only contributory and that appropriate teaching is the solution. From such hypotheses it may follow that causes are irrelevant - take the child from where he is and provide appropriate learning experiences and progress will be made. The second section of that tenet is accepted as being sound teaching philosophy and while the first premise is valid in terms of the child who has failed it is illicit to append it to all learners. One might say with equal justification that preventive medicine is irrelevant because medical science has reached the stage where it can remedy all, or most, illnesses.

To the writer it does not seem pointless to attempt to identify early those children who educationally are at risk and to attempt to provide programmes which diminish the effects of deficiencies and highlight other modalities. In certain cases deficiencies and some of their solutions are obvious - education of the blind utilises the hearing and tactile modes

while deaf education augments residual hearing and emphasises sight and touch. Continuing the medical analogy, pregnancies are constantly being monitored for at risk births - amniocentesis at weeks 14 - 16 will indicate Downs syndrome and spina bifida may now be detected by a simple blood test during the 16th week of pregnancy.

No-one cavils at providing assistance for the obviously handicapped. And indeed the educationally handicapped are also being assisted - slow learners - provided their IQ is below 75 and attainment is severely retarded may be helped through the provision of classes or resource teachers for backward children. Children who are retarded but not backward may receive some help from part-time teachers, or the half dozen reading clinics in this country or the enthusiasm of a teacher who wants to do something for "Johnny who can't read". Within this latter group there are groups of pupils whose failure to make adequate progress is believed to be affected, if not caused, by such factors as health - debilitation and hospitalisation; home environment - socio-economic levels; emotional insecurity; schooling - frequent changes, ineffectual teachers; pre-school experience - limited language due to cultural differences, subculture groups, ethnic origins. However, a further group may be readily discerned - a small number of intelligent children from "good" homes with wide pre-school experience, good command of oral language, sound in wind and limb, who somehow fail to make adequate progress in the early years and such lack of progress generally spills over into post-school life. When one examines their backgrounds, the usual concomitants of learning failure are missing.

For a number of years it was thought that such children suffered minimal brain damage, had perceptual problems - auditory and/or visual, lacked motor control, lacked lateral dominance or had some such similar type of neurological dysfunction. Studies indicating

- that the presence of blood in the spinal fluid of 95% of all live births suggests nearly all babies experience some degree of damage in the birth trauma;
- that some successful learners exhibit crossed dominance;
- that some children with perceptual problems are high progress readers etc;

have led to the rejection of the brain damage hypotheses by many researchers.

In the reading field much current research is being directed towards the learner and how he/she directs learning. On the basis that reading is only an aspect of language and that nearly all humans learn to speak, ie, teach themselves, then it follows that reading failure may result from inappropriate interventions by the teacher.

The purpose of this investigation was two-fold -

- 1 To search (a) for factors which may have been contributory to learning failure and (b) for assets the learner brings to the learning task.
- 2 To take the assets such children have and attempt to provide programmes to meet their specific needs. At first this would be largely individual work, establishing bench marks on attainment, examining ways in which each child learns best and detailing appropriate strategies which would be modified through subsequent experience.

Indications are that improvement in health, in factors leading to emotional stability, in factors dependent on socio-economic conditions, or in teacher effectiveness, lead to increased attainment levels. Similarly, learners with lesser intellectual capacity have progressed favourably in the shelter of special classes.

As there is evidence to show learning despite the presence of what are believed to be inhibiting factors, it is believed that it is not the presence or absence of such factors which is critical but rather how effectively the learner reacts to the misconceptions whatever their cause.

In Piagetian terms if the learner adjusts the incoming percepts and assimilates them into his previous understandings, there should be few problems. However, should he continue to adjust previous understandings to accommodate the incoming misconceptions then a breakdown in his faith that he has the power to understand the world is inevitable. Concern for those who lose touch with reality is outside the realm of this paper. However, in respect of specific areas it is believed that insults to the learner's cognitive style occur at the time of teacher intervention.

Examination of the S L D group - those whose failure to learn could not be accounted for in terms of intelligence, socio-economic deprivation, pre-school experience, frequency of teacher change etc, was extended to determine their ability with certain psychological processes. The reported findings of similar dysfunction in successful learners has frequently led researchers to reject the concept of an S L D syndrome.

By contrast this research is based on the premise that such factors are significant for many learners and accordingly the basis of selection was lack of academic achievement and the presence of certain neuro-sensory deficits. A detailed statement follows. This has been culled from reports and texts available to the writer who previously as inspector supervising special education had oversight of the psychological service and all handicapped children plus a district delegation of supervising the field of reading in this education board district.

The definition of the S L D category is vague, varying from country to country, clinic to clinic, clinician to clinician. Many researchers have looked for those specific objective characteristics necessary and sufficient to distinguish this group from all others and have found none. While some therefore deny the validity of the S L D concept it is a matter of experience that any group of handicapped children tend to be more heterogeneous than a random group of 'normals'.

Stanley A Perkins<sup>1</sup> states that -

When the National Advisory Committee on Handicapped Children of the U S office of Education suggested a definition of learning disabilities in 1968 there was general agreement, but major differences remain in conceptualisation. The definition stresses disorders in neuropsychological processes. It states - "Children with special learning disabilities exhibit a disorder in one or more of the basic psychological processes involved in understanding or using spoken or written language. These may be manifested in disorders of listening, thinking, talking, reading, writing, spelling

or arithmetic. They include conditions which are referred to as perceptual handicaps, brain injury, minimal brain dysfunction, dyslexia, developmental aphasia, etc. They do not include learning problems which are due primarily to visual, hearing or motor handicaps, to mental retardation, emotional disturbance or to environmental disadvantage".

Cruikshank<sup>2</sup> goes further and claims that "learning disabilities are essentially and almost always the result of perceptual problems based on the neurological system" and for this reason believes the term should be modified to "specific learning disabilities" ie, specific and diagnosed perceptual problems in any one or in all sensory modalities. Furthermore, he believes that definitional difficulties will recede as less inclusive and more refined concepts are used.

If we examine the substantial number of pupils - say 20 - 25% who are unable to cope with the normal prescribed work of their age group, the proportion with 'unaccountable' learning delay is determined by the number of factors taken into account. At one time it was believed that variance in scholastic achievement could be accounted for almost entirely by variance in intelligence; in fact, this left a large portion of the observed variance in reading progress as 'error', 'residual' or 'unaccounted for'. The inclusion of factors such as social class, physical characteristics of the neighbourhood and school, parental attitudes and aspirations each in turn whittle down the unaccounted variance. Nevertheless, within any social class, individual school, individual family, or at any given intelligence

level, there are children whose achievement deviates substantially from expectation. In other words, there are unexplained factors within some individual pupils that exercise a major influence on their scholastic success.

Large scale research on random samples does not highlight these unaccounted discrepancies. Their apparent importance is diminished mainly because they exercise a major effect on only a small fraction of pupils, and also because there is quite a large number of distinct types of impairment, so that in any random group specific deficits average out, merely to appear as error variance at the foot of an analysis of variance table. Furthermore, it may be argued that even the unexplained variance does not give a realistic estimate of the influence of these intra-individual factors because the commonly controlled variables often correlate highly (but irrelevantly) with S L D factors. For example, in this survey there were found four S L D boys for every S L D girl. If sex is 'taken out' of an analysis of reading variance the unaccounted variance is significantly reduced without any acknowledgment of elements that seriously influence reading progress.

Much recent research has centred on processing deficits in association with learning disabilities. For example, learning disabled youngsters have been reported to exhibit:

- . Auditory memory deficits (de Hirsch, Janskya Langford<sup>3</sup> 1966; Masland & Case<sup>4</sup> 1965; Spencer<sup>5</sup> 1959).
- . Temporal sequencing deficits (Aten & Davis<sup>6</sup> 1968).
- . Auditory figure - ground problems (Flowers & Costello<sup>7</sup> 1970; Lasky & Tobin<sup>8</sup> 1973).

- Reauditorization deficits (Internal auditory rehearsal of digits etc) (Johnson & Myklebust<sup>9</sup> 1967)
- Auditory-visual integration deficits (Birch & Belmont<sup>10</sup> 1964, 1965; Birch & Leffors<sup>11</sup> 1963; Stamback<sup>12</sup> 1951).
- Limitations in Symbolization, abstraction and conceptualisation (Johnson<sup>13</sup> 1968; Johnson & Myklebust<sup>14</sup> 1967; Myklebust<sup>15</sup> 1964; Strauss & Kephart<sup>16</sup> 1955).
- Deficits in linguistic processing (Farnham-Diggory<sup>17</sup> 1967; Menyuk & Looney<sup>18</sup> 1972; Semel & Wiig<sup>19</sup> 1975; Wiig & Roach<sup>20</sup> 1975).
- Deficits in cognitive and logical processing (Wiig & Semel<sup>21 22</sup> 1973, 1974).
- Perceptual-motor deficits (Hallahan & Cruikshanks<sup>23</sup> 1973).
- Visual processing deficits (Luria<sup>24</sup> 1966; Schuell, Jenkins & Jimenez-Pabon<sup>25</sup> 1964; Wepman<sup>26</sup> 1951).
- Form discrimination deficits (Bender<sup>27</sup> 1938; Cohen & Edwards<sup>28</sup> 1964; Marshall & Newcombe<sup>29</sup> 1973).

These are only some of the references extant in the literature. As one of the major premises is that no one deficit is causative but rather the absence of several abilities and then in relation to how the deficit impinges on the learners' schema, it is not necessary to be exhaustive in listing the known deficits, nor to test for them all. It will be sufficient to show a relationship between learning disability and the presence of several process deficits.

At the commencement of 1978 a boost was given to the project when the research section of the N Z Education Department accepted the project for funding. On receipt of a grant of \$1000, equipment, books and materials were purchased and presented to the two trial schools.

A twofold reaction was noted. Teachers now felt they held a special position in the education field and strove to deserve it. Secondly, the actual resources made a significant difference to programming. More efforts of an individualised nature were noted. Tape recordings of pupil reading behaviour were constantly made and frequently referred to. Variations in types of reading material read increased while reinforcement activities became more closely related to the learner's needs.

As time passed, procedures close to many now being followed in the very successful Auckland Reading Recovery project were developed - regular, sustained and usually individual programming; careful monitoring of reading behaviour; regular formal evaluation of developments. This constant monitoring of reading behaviour led to variations being made to each individual programme. Coupled with this was regular contact with class teachers who were kept informed of each child's development. As a consequence, classroom expectations were generally in line with current abilities, thus reinforcing newly learned behaviours.