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ABSTRACT

Reported was a program designed to explore the remediation of motor problems among minimally brain damaged children. In an initial testing session the children were exposed to a six category test of gross motor functioning, the first part of the Frostig Developmental Test of Visual Perception, a self concept test, a games choice test, and other tasks designed for the subjective evaluation of motor function. Children participated in classes which exposed them to tasks which both were taxing but able to be performed, as well as to tasks which were stressful to a slight degree. Conclusions such as the following were drawn: younger children with slight problems are most amenable to change; approximately 80% of the children referred were males; and hand eye control is improvable not only with the application of remedial measures involving practice, but also with the application of medication in hyperactive children. (GW)

CHILDREN WITH MINIMAL BRAIN DAMAGE: PROGNOSIS FOR THE REMEDIATION OF MOTOR PROBLEMS

by
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There has been, within the past 25 years, as this group is aware, a considerable amount of interest surrounding the use of movement experiences with the brain injured youngster. While at times this interest has led to some rather bizaare theorizing and even more hysterically applied movement remedies, a positive outcome has been the attention which has been drawn to children with minimal motor problems. Research indicates that from 15-18% of all children consigned to an elementary school for normal youngsters evidence signs of motor discoordination which has some kind of neurological dysfunction at its root; while this percentage is even higher in groups of children with learning disabilities, and in schools for the retarded.

In 1961 I began a program in Santa Monica, California, whose intent was to explore the remediation of motor problems among children labeled as evidencing the "Clumsy Child Syndrome". This program has continued to this present time, and has at several points been accompanied by research in efforts to gain deeper understanding of the effects of various program content upon the abilities of the children with whom we dealt and with whom we are dealing now. (7)

The children are referred to us from a variety of sources, including the Department of Pediatrics, and Psychiatry, in the UCLA Medical Center, private pediatricians, and pediatric neurologists, as well as school psychologists, teachers, and parents. As would be expected the majority are

boys, with the girls consisting of only about 20-30% of those evaluated.

During an initial hour-long testing session the children are exposed to a six-category test of gross motor functioning, the first part of the Frostig, as well as a self-concept test and a games choice test, together with other tasks designed for the subjective evaluation of motor function. Examples of these latter exercises include alternate hopping, lateral movement of the total body, finger opposition, as well as running behavior. This evaluation, which is observed by the parents and myself, is followed by a conference illuminating salient points observed during the testing period.

The children then usually participate in classes which meet twice a week, lasting about an hour at each session. In groups of four the children are exposed to tasks which represent areas of deficiencies previously evaluated during an hour-long testing session at U.C.L.A. The age-range with which we normally work includes 4 year olds to 12 year olds.

Basic principles followed include attempting to expose children to what is termed a "stress-success" cluster of tasks, i.e. tasks which both are taxing but able to be performed, as well as some which are stressful to a slight degree. Moreover, we try to gradually modify the amount of social stress imposed on the children by modifying the constitution and/or size of the group in which they are working. Graduated sequences of fine motor control tasks have been found helpful in changing handwriting and printing performance; while overall, as the children grow older, more and more sports skills are phased into a program which, for the younger ones, consist primarily of basic developmental activities, involving balance, agility and the like. (8)

As the result of our research and observations, the following picture is emerging.

(a) Most amenable to change are children who are younger, and whose problems are slight. There does not seem to be any significant sex differences in prognosis for change of motor problems. (7)

(b) Over the years approximately 80% of the children referred to us are boys.

(c) As a group, boys afflicted with motor problems give answers reflecting lack of social acceptance on a standardized test of "self-concept". (7)

(d) Easiest to change are qualities reflecting physical fitness. Next in order of difficulty are motor qualities involving accuracy and control, i.e. balance, agility, ball handling ability and the like. Most difficult to change, after a 5-6 month period, are answers on the children's self-concept test.

(e) Little transfer will occur between training in fine motor qualities and those involving large muscle control. This finding prompted us several years ago to concentrate either on fine or gross motor problems, while working out a home training program for the quality not dealt with in the formal program.

(f) Hand-eye control is improvable not only with the application of remedial measures involving practice, but are also improved in hyperactive children with the application of medication.

(g) Improvement in groups of children exposed to a two-hour a week program of motor remediation will improve about 3 times more during a six month period, in tests reflecting balance, agility and the like, than would be expected as the result of normal maturational changes. (7)

(h) A program of gross motor activities, if directional concepts are emphasized, i.e. jump up, more toward your right, etc., results, after a 5 month period, in significant improvement in a drawing test in which arrangement of figures in proper locations around the corners of a large square is required. (7)

(i) A group of boys with motor problems will evidence game-choice profiles similar to those of girls; while they will also tend to report playing games involving "phantasy bravery" (cops and robbers, spacemen, et.)) at older ages than do comparable boys, free of motor problems. (7)

(j) There are marked individual differences, as is usually found in programs of motor remediation, relative to susceptability to remedial efforts. Cohen, among others, discovering differences in cortical responses following similar kinds of peripheral sensory stimulation, has concluded that unique patterns of interaction between cerebral motor activity and peripheral sensory activity, within each individual, explain the differential success of various methods of remediation. (3)

(k) It is unclear whether changes recorded on tests are reflective of basic neurological modifications to the demands placed upon the children, or whether they are simply due to the adoption of new and more effective strategies when attempting to accomplish motor tasks.

Our future research revolves around discovering the nature of the diffusion of ability patterns in children as a function of age. Thus, a hypothesis is being pursued similar to that espoused in 1946 by Garrett (11), and since corroborated in recent studies relative to intellectual abilities. (10) (12) Further investigations are exploring the nature of impulse control

measures and their relationship to academic learning and I.Q. scores. (13) (14) Moreover, following a four year study of the effect of learning games on academic abilities in the central-city of Los Angeles (Catholic Archdiocese), we are pursuing a program through which we hope to elicit change in selected intellectual attributes through selected, structured, and "cognitively loaded" programs of movement education, to which retarded children will be exposed. (9) The further illumination of racial differences in motor ability traits (1) and in self-control measures (2), uncovered by several of our students, present, I believe, other important directions for future studies.

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