

WHAT ACADEMIC ACHIEVEMENT CAN BE EXPECTED OF EDUCABLE SUBNORMAL CHILDREN?

EDUCATORS, psychologists, and parents are becoming increasingly concerned with the plight of the educable subnormal child whose prevalence is usually estimated to be from 5 to 10 per cent of the general school population. Exact figures in Puerto Rico are as yet unobtainable and, in other countries, estimates vary according to the definition of the term educable mental subnormality given by the various authorities in this field. As advances are made in preventive medicine, keeping alive many more damaged children, psychometric instruments refined, and general educational standards at all levels raised, an increase in the incidence of mentally subnormal children in the Puerto Rican public schools can be expected. Thus, some specialized form of education for these children of low intelligence, either in special schools or in special classes in the ordinary schools will inevitably be the ultimate goal of all those concerned with this problem.

On planning a sound educational program, initiating the

use of specialized techniques, and introducing special curricula to meet this problem, educators and teachers will justifiably ask what level of academic achievement is to be expected of subnormal children receiving their instruction in special schools or classes.

Description of Sample

The results from a recent study carried out by the author on a representative sample of 300 educationally subnormal adolescents may throw some light on this question.¹ The members of the group were selected from the leaving classes of eight boys' and seven girls' special secondary schools for educationally subnormal children.² Their chronological ages ranged from 14 to 16 years, the average age of the group was 15 years 2 months (average boy's age 15 years 3 months, girl's age 15 years 1 month). Their IQ's on the Stanford-Binet—a verbal individual test of intelligence, were from 41 to 90, mean IQ 65.7 (Boys' mean IQ 68.5, girls' 62.9) and on the Progressive Matrices—a non-verbal group test—from IQ 55 to 99, mean IQ 73.7 (boys' mean IQ 77.7, girls 69.8). The average Stanford Binet mental age of the group was 9 years 5 months (boys' 9 years 10 months, girls' 9 years) and their mean Progressive Matrices mental age was 10 years 7 months (boys' 11 years 3 months, girls 10 years).

The results expressed in age scores were obtained from standardized achievement tests constructed or adapted by the writer for the study.³

Results

There is a wide variability in the level of attainment among

¹ For a complete description of the sample see Morán, R. E., 1960, "Attainments of Subnormal Adolescents", *Brit. J. of Educ. Psychol.*, Vol. 30, part III, pp. 201-210.

² Legally, in England, an educationally subnormal child is one who by reason of limited ability or other conditions resulting in educational retardation, requires some specialized form of education, wholly or partly in substitution for the education normally given in the ordinary schools.

³ For description of tests see Morán, R. E., *op. cit.*, p. 203.

subnormal children as equally found among 'normals'. However, subnormals are generally deficient in all areas demanding verbal skills, although girls tend to be superior to boys. The average Reading Age of the group (average chronological age 15 years 8 months) was *8 years 3 months*, which is approximately *second or third grade level*. The average reading ages of the boys and girls were identical which indicates a slightly higher achievement in this area on the part of the girls who tended to have lower IQ's. However, the reading ages of both boys and girls (and those of other areas tested except craft) are significantly lower than their mental ages as calculated from both their intelligence tests. This suggests that the group is both subnormal and backward.⁴

The average score of the subnormal on the Language Test was *6 years 11 months* (boys' 6 years 10 months, girls' 7 years) which is equivalent to *first or second grade level*. While in Spelling the average age of the subnormal group was *7 years 5 months* (boys' 7 years 3 months, girls' 7 years 8 months) or *first or second grade level*.

In Arithmetic and General Information the subnormal boys, on the average, proved superior to the girls. The average Arithmetic Age for the group was *7 years 6 months*, which is equivalent to *first or second grade level*. The boys averaged *8 years 5 months* i.e. approximately *second or third grade level*, and the girls *6 years 7 months* or *first or second grade level*. Thus, it seems that subnormal boys are significantly superior to subnormal girls in this area. The average General Information age was *8 years 8 months*: (boys' 9 years 6 months, girls 7 years 11 months).

The group scored higher on the Craft Test—a pictorial test of general craft and household information—than in any other subject tested. The average Craft Age of the boys was *11 years 8 months*, while the girls obtained an average Craft Age of *10*

⁴ For the author's definition of backwardness see Morán, R. E., 1960, "The Problem of Backwardness in Puerto Rico and its Educational Implications", *Pedagogía*, Vol. 8, No. 1.

years 3 months. This was the only area in which the subnormals' attainments were equal or superior to both their Stanford-Binet and Progressive Matrices mental ages.

Also included in this study was an exercise in which the examinee's sole task was to write legibly and correctly his name, date of birth (day, month, year) present age, age next birthday, his present address, and the name of his school. The results of this exercise are given in Table II. As can be seen more than 20% of the group, receiving special education and on approaching the termination of their school career, could not perform these tasks correctly.

Summary and Conclusions

This research is an attempt to provide educators and teachers with evidence, based on an empirical study, as to the level of academic attainment to be expected of educable subnormal children receiving their instruction in special classes. At this juncture it should be recalled that all the adolescents comprising the experimental group were diagnosed as educationally subnormal only after having been subjected to a rigid medical and psychological examination by competent doctors and psychologists. Although their classification of educational subnormality is not based on the sole criterion of low IQ, it is significant that the experimental group had a mean Stanford-Binet IQ of 65.7, and a mean Progressive Matrices IQ of 73.7. Thus, the experimental group is apparently composed of veritably educationally subnormal children—backward 'normal' and ineducable mental defectives being excluded—whose poor scholastic achievement is due largely to their low intelligence, though other factors, e.g. emotional, may be aggravating their condition, and preventing their maximal classroom performance.

It should also be pointed out that England is the only country in the world that offers a nation-wide program of special education for subnormal children which has been functioning

for over fifteen years. Thus, each subnormal child tested had received specialized instruction from a specially trained teacher, in a class of no more than 20 children. Special school curricula and organization are designed to meet the subnormal child's educational needs, and vary from school to school depending on the discretion of the school directors. Therefore, at least in theory, the education of the experimental group has been based on modern pedagogical and psychological techniques for this type of child.

Thus, the salient observations of this study are, that;

1. Although a few subnormal children achieve scholastic attainments commensurate with their mental capacities, the majority of them tend to function academically below their mental ages;

2. There seems to be a wider discrepancy between the subnormals' attainments and their mental capacities when their mental ages are calculated from a non-verbal group test, than from a verbal individual one;

3. Subnormal children are relatively superior in subjects demanding visuo-spatial and motor abilities than in those depending on linguistic skills;

4. The subnormal group, as regards academic achievement, is not homogeneous as there exists (as in normal heterogeneous groups) a wide range of variability in the test scores. That is, in certain areas their scores approximate those of 'average' children of the same chronological age, or may be at the level of those of moderately defective children;

5. In those special classes where emphasis on and enthusiasm for a certain subject were found, this effected, in certain instances, a relatively superior achievement in this subject, sometimes at the expense of others in the curriculum: It therefore seems that if the same enthusiasm and emphasis prevailed in all special classes, an overall rise in the general level of attainment could possibly be accomplished;

6. The quality of work of the subnormal adolescents of this study is comparable to that done by children of average intelligence in the *second* or *third grade* of a good elementary school; and

7. That a reasonably high percentage of the subnormal group has not mastered such fundamental skills as writing correctly their name, address, etc.

It cannot be overemphasized, however, that the mental ages of subnormal children should be considered only as an indicator and not as a limit of academic potential, and that results obtained from standardized achievement tests do not always reflect these children's true academic ability. Therefore, the results of this study should be interpreted with much caution. Moreover, the type of test (individual, group, verbal, non-verbal, etc.) from which the mental age is calculated should always be specified. For, it was observed in this study that an M. A. calculated from a verbally loaded test will generally be lower than if calculated from a test with a high 'g', 'k', or perceptual factor, and that the subnormal child's attainments tend to approximate more closely to his verbal test M. A. Thus, on non-verbal tests subnormals tend to score higher, thereby increasing the discrepancy between their mental age and academic achievement. The corollary of this findings is, that the curriculum of special schools or classes for subnormal children should be based on those mental processes in which experimentation has shown these children to be relatively more competent, (e.g. visual and spatial perception), rather than on their weaknesses, (e.g. subjects demanding verbal skill). Nevertheless, until these mental processes have been conclusively determined, the special school or class curriculum could be planned around a program incorporating the necessary basic and craft subjects, but mainly directed towards inculcating attitudes and habits necessary for vocational and social competence. Such a program would be reinforced by continued and varied experiences in the areas covered in the general information test. Elementary Social & Natural Sciences, rules and regulation, health and hygiene, and current events.

Television and/or films could be used as a supplementary medium by which the subnormal child could be provided with instructive information in a form in keeping with his relatively superior visuo-perceptual ability.

TABLE I

MEAN AGES

	Boys	Girls	Total Group
Mean C. A.	15:3	15:1	15:2
Mean PMMA	11:3	10:0	10:7
Mean S-BMA	9:10	9:0	9:5
Reading	8:3	8:3	8:3
Arithmetic	8:5	6:7	7:6
Gen. Inf.	9:6	7:11	8:8
Language	6:10	7:0	6:11
Spelling	7:3	7:8	7:5
Craft	11:8	10:8	11:2

P. M. and S. B. refer to Progressive Matrices and Stanford-Binet, respectively.

TABLE II

The percentage of the group which scored correctly in each area.

	Name	Date of Birth	Present Age	Present Address	Name of School
	%	%	%	%	%
Boys	71.9	61.4	67.8	70.1	67.8
Girls	78.8	66.9	75.0	77.9	70.5
TOTAL ..	75.3	64.1	71.4	74.0	69.1