Educational Research and Statistics

Group Intelligence Tests and Linguistic Disability Among Italian Children

The purpose of this study was to investigate the effect upon group intelligence test scores of linguistic disability, as expressed in the language spoken in the homes of the children. All the children so tested apparently suffered from no linguistic disability. The work of the school was conducted entirely in English and the children spoke English with sufficient facility to make such a course practicable. The children, American and Italian, in grades 6 to 10 of the Hammonton, N. J., public schools were given the Otis group intelligence tests, Forms A and B, and the results analyzed in the light of the available norms for the Otis tests and a wealth of biographical data for the Italian subjects.1 This biographical material consisted of language spoken at home, date of immigration of father and social status of parents, in addition to the facts of age, sex, grade, etc.

Procedure: The advanced examination, Form A, of the Otis Group Intelligence Scale was given to all the children in grades 6 to 10, inclusive, in the public schools of Hammonton, N. J., in the first week of April, 1923.2 In the last week of May of the same year, Form B was given to the same children. In August, 1923, forty-three of the Italian children, selected at random, were given an individual examination by the Stanford Revision of the Binet Scale.

All the tests were administered by myself. The standard directions of the Otis Scale were adhered to with two unimportant exceptions3 and a stop watch was used throughout. A positive correlation of .82 was found between the results of Form A and Form B and therefore the results of Form A alone have been used in the analysis.

1 The biographical data were collected by Emily Fogg Mead, in connection with a sociological study she was making at the time in pursuance of her earlier researches published in "The Italian on the Land," U. S. Bureau of Labor.
2 The publication of these results has been deferred because of the author’s absence from the country.
3 The following changes were made in the directions for the Otis Test: (a) In the directions for part 2 the meaning of underline was illustrated on the blackboard; (b) in the directions for part 5 the permission, "Do any figuring you like on the margin," was amended to a direction to figure on the left-hand margin only.
The "Index of Brightness," or the degree in which the raw score of the subject varies from the norm for 22,000 unselected school children, added to or subtracted from 100, as the score is above or below the norm, has been used as the basis for all comparisons. In each case the median, mean and sigma with the errors for the mean and sigma have been computed. The correlation between the results for Forms A and B was obtained by the Pearson formula. The selection of the "Index of Brightness" is felt to be justified on the grounds that it is a measure more germane to the Otis tests than the more derivative I. Q. Comparisons in terms of raw score were not possible, as the average age of the Italian group exceeded the average age of the American group.

Summary of the data used: The final comparisons were made between 276 Italian children and 160 American children on the basis of Form A. The observations on the results of the Binet scale are based on the records of forty-three Italians. The following material was obtained directly from the children at the time of the examination: name, age last birthday, date of last birthday, grade, father's name, mother's name, father's birthplace, mother's birthplace, subject's birthplace, occupation of father and language spoken at home. The question of language was particularly emphasized. The following directions were given:

I want you to pay particular attention to the next question, for it is very important. I want you to write down the language that your father and mother talk when they talk to each other. Now I don't want you to put down the language that you talk. I know that you can all talk English. But write the language that your father and mother talk to each other. If they talk German, or Russian, or Italian, put down German, or Russian, or Italian. If your father and mother talk two languages, put down the one they talk most, first, and the one they talk least, second. Be very careful about this, as it is very important.

In every case where it was necessary to ask a question referring to nationality, several nationalities were mentioned in order to avoid any emphasis upon the Italians. If the great number reporting Italian spoken in the homes be any sort of index, it would seem that this method had been successful in obtaining frank replies from the children.

In dividing the children according to nationality, the following procedure was followed:

American, a child both of whose parents were born in this country and in whose home English was the only language reported as spoken.

Italian, a child of Italian parents, one or both of whom was born in Italy; and in a few exceptional cases, the child of Italian parents, both of whom were born in this country but who still spoke Italian in the home.

All other nationalities and Jews and Negroes were excluded from the comparison. Although it has been claimed with ample justification that a child's nationality can not be accurately determined without a record of the birthplaces of the four grandparents, such caution is not necessary in this particular case. Hammonton has about 9,000 inhabitants, over half of whom are Italians from two or three restricted areas in southern Italy or Sicily. There are only a few northern Italians in the group. The more elaborate procedure required in dealing with an urban community of many nationalities was unnecessary here. Intermarriage is just beginning in Hammonton and does not need to be considered.

The occupations of parents was not a useful index of social status, as 67 per cent. of the Italian children gave their father's occupations as "farmers," an elastic term covering the man with a scant two acres of raspberries and the man with a large peach farm. The fact is of interest here, however, as it indicates that over 50 per cent. of the Italian children lived outside the town, in exclusive Italian surroundings which did not provide the same incentive towards mastering the English language as is given by urban residence. But it was necessary to have additional criteria for a classification of the children according to social status. They were so classified into four classes on the basis of a detailed study made by Emily Fogg Mead. The criteria used varied from the amount of taxes paid, education given to the children (particularly the older children), condition of the home, language spoken, to less...
tangible criteria of ambition as shown in attempts to participate in American life and adopt American methods of living as evidenced by the consultation of a physician instead of a midwife, use of books, newspapers, modern plumbing, telephones, etc.

In the light of Brigham's claims respecting later immigrants to this country, it seemed advisable to utilize these data also. An Italian school teacher was employed to collect the dates of immigration for the parents. Where the dates of both parents were ascertained, a fairly close agreement was found between them. For this reason and because in many cases it was not possible to obtain the date of the mother's immigration, the dates for the fathers only are used in this analysis.

Results: Analysis of the records of each nationality, American and Italian, on Form A of the Otis test yields the following results:

(1) The difference between the mean index of brightness for the American group and the Italian group is 27.33 ± .21.

(2) Six per cent. of the Italians exceed the mean index of brightness of the Americans.

(3) Seven per cent. of the Italians exceed the median I.Q. of the Americans.

(4) Analysis of the four language groups—those who speak only Italian at home, those who speak Italian and some English, those who speak English and some Italian and those who speak only English—shows:
   
   (a) A steadily increasing mean with the amount of English spoken in the home, 65, 70, 73.9 and 81.1.
   
   (b) The greatest increase occurs between the group who speak some Italian in their homes and the group who speak no Italian in their homes, 11.3 ± 35.
   
   (c) The difference between the Italians who hear only English in their homes and the Americans is 15.8 ± .69.

(5) Considering the differences between the mean index of brightness for the two nationalities we find:

The difference between the two sexes is less for the Italians than for the Americans. The difference between Italian boys and Italian girls is 6.9 ± .2 in favor of the girls, for the Americans it is 8.5 ± 3.6 in favor of the girls, also.

(6) Considering the mean index of brightness for each grade by nationality we find:

(a) A steadily increasing mean with each grade for the Italians. This, however, is accompanied by decreasing numbers and may be attributed to greater selection, a lower economic status reinforcing such selection.

(b) No such increasing mean is found in the case of the Americans and there is an increasing percentage of Americans in each grade.

(c) The smallest difference, 11.5 ± 7.2, between the indexes of brightness for the two nationalities occurs in the tenth grade, but the number of Italians is too small, ten individuals, for this result to have any significance.

(7) The occupational data obtained from the children show that the majority of the American children are drawn from other than the farming class; 17.5 per cent. are children of farmers, 29.3 per cent. children of skilled laborers, 24.9 per cent. of fathers listed under "Other Occupations," and 19.5 per cent. of unskilled laborers. On the other hand, the 67 per cent. of the Italian children whose parents are farmers live outside the town, in greater isolation and go to the poorer rural schools until the fourth and fifth grades.

(8) When the Italians were classified into five groups in respect to the date of immigration of the father—"Born in U. S.," "Immigrated between 1879 and 1889," "1889 and 1899," "1899 and 1909," and "1909 and 1923"—the means were found to be for these groups: 91.2 ± 4, 82.1 ± 4, 71.3 ± 4, 71.8 ± 4, and 57.5. (In this last group there were only six cases.)

(9) When these results were further analyzed in relation to language spoken at home, it was found that while 83 per cent. of those who had immigrated since 1909 spoke only Italian in their homes and none of them spoke English as the preferential language, only 14 per cent. of those who were born in this country or immigrated earlier than 1879 spoke only Italian in their homes, and 50 per cent. spoke English as the preferential language; 14 per cent. spoke English only.

(10) When the Italian children were classified into the four social status groups, it was found that only twelve children, or .05 per cent., could be classed as A, or fully comparable with the average American child in the community. This fact alone suggests that any comparison of the achievement

of these two groups would have doubtful validity as an index of intelligence of the two groups.

A steadily rising mean is found for the social status groups with significant differences between groups A and B, 29.65, and B and C, 10.75. The difference between C and D is not significant. The difference between A and D is 44.35.

(11) When the social status groups are analyzed in respect to the date of immigration of father and language spoken at home, we find:

(a) There does not seem to be any definite relationship between date of immigration and present social status.

(b) If group A, which contains only eleven cases, be disregarded, there is an increasing amount of Italian and a decreasing amount of English spoken as we go from the higher to the lower social status groups. But even here the relationship is irregular and the number of cases is small. (Language spoken at home, although a criterion sometimes used in the social status classification, was never a determining one and was frequently disregarded if contradicted by several other criteria.)

(12) When the scores of each group in the ten Parts of the Otis test were considered it was found that the Italians made 77 per cent. of the American score in the arithmetic test and only 35 per cent. of the American score on the Proverbs test. (The forty-three children given the Stanford B-Revision were questioned about the proverbs. Very few had ever heard any of them and then only as they occurred in lessons at school.) The Italians do not owe their score to their memories; they did better in both arithmetic and in following directions than in the section on memory. The Italians made 70 per cent. of the Americans score in the Similarities test, half of which involved pictures and no words. (These figures are of course only relatively significant, as the Italians were older than the Americans; the average age of the Italians was 14.1; of the Americans, 13.5.)

(13) Considering the means for each group in Forms A and B of the Otis Scale, the Americans gained 34.84 and the Italians 13.15, in the retesting.

Analysis of the results of the Stanford Revision of the Binet test given to forty-three Italians as a check upon the Otis results, yields the following suggestive results. The number is too small for the results to have any quantitative value.

(1) In these forty-three cases, forty of the children did better upon the individual scale than upon the Otis test. Of the three who did worse, two were feebleminded. The mean I.Q. was 95.3 ± 3; the median I.Q. was 98.

(2) Special care was exercised in the administration of the vocabulary test. When the level attained on the vocabulary test is compared with the level attained upon the whole scale, the mean difference in favor of the whole scale rating was twenty-eight months. As the vocabulary rating only comes in two-year intervals, all cases in which the difference was less than twenty-four months were eliminated and the remaining twenty-one cases analyzed. The median difference for these twenty-one cases was forty-one months. Scrutiny of the individual record sheets shows that most of the children attained the vocabulary ratings finally assigned to them with little or no margin, so that differences below twenty-four months may also be considered to be of some significance.

Conclusions: (1) The Italians are definitely inferior in performance to the Americans if judged by the test showing alone. Therefore, if grading or promotion were to be governed by test results the Italian would be placed at a clear disadvantage when competing with the American children in these particular public schools or other schools where similar conditions obtain.

(2) The scores of the Italian children have been shown to be influenced by: the language factor as demonstrated by the classification according to language spoken at home, the social status factor and the length of time the father has been in this country, this last factor being somewhat interwoven with the language factor.

(3) This study indicates that:

(a) Intelligence test scores made by foreign children, particularly on group scales involving chiefly the use of language, are subject to vitiation by the above-mentioned factors.

(b) Classification of foreign children in schools where they have to compete with American children, on the basis of group intelligence test findings alone, is not a just evaluation of the child’s innate capacity.

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