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The Relation Between Scholastic Achievement and Economic Status as Shown by Parental Occupation

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THE RELATION BETWEEN SCHOLASTIC ACHIEVEMENT AND ECONOMIC STATUS AS SHOWN BY PARENTAL OCCUPATION

By

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Part I

INTRODUCTION

What bearing parental economic status has on students' scholastic work continues to be a matter of concern to school administrators and teachers. The question is related to the ability of high school students to profit from instruction. The degree to which pupils profit from instruction may be largely conditioned by the occupational status of parents. Chapman and Sims say "that most studies interested in measuring capacity and intelligence of school pupils have relatively neglected the importance of the socio-economic status".[1]

The question is no less significant to socially minded citizens. The economic status or income level is comprehensive. It has a bearing on the amount and quality of food, kinds of social contacts, education of parents, and

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1. Chapman, J. Crosby and Sims, V. M. "Quantitative Measurement of Certain Aspects of Socio-Economic Status." Journal of Educational Psychology, v.16, p.381, September 1925.

cultural aspects of home. Findings of several investigators have indicated that children of certain economic levels have an advantage over children of other economic levels in the performance of school work.

Statement of the Problem

The specific object of this study was to investigate the degree of correlation between high school students' grades and their parents' occupational status. Also, this study proposes to compare this correlation found among English-speaking pupils with that found among the Spanish-speaking pupils. Answers will be attempted for the following questions:

1. What economic group of high school students has the highest four year scholastic achievement?

2. How do the other economic groups of high school pupils rank?

3. What is the comparison between the economic groups of the English-speaking pupils and the economic groups of the Spanish-speaking pupils?

Definitions and Delimitations

In this study economic status means occupational level. An occupation is that activity which takes up most of one's time, thought, and energies, constituting one's regular and principal business as a means of making a living. In modern

society, with its characteristic divisions of labor and specialization of functions, the overwhelming majority of the people engage in a specific, relatively continuous activity in order to earn their livelihood and maintain a definite social status. The term "occupation" has a number of implications covering three different sets of factors. They are:

1. Technological: The specific manual or mental operations involved in the execution of occupational work.

2. Economic: The income yield of an occupation which serves to provide a livelihood.

3. Social: The prestige attaching to a person or group by virtue of an occupation.

These sets of factors themselves have implications of their own as will be shown.

An occupation is not a rigidly limited sphere of activity. Occupations tend to merge and subdivide. With our highly complex and equally interdependent economic system, workers changing to different occupations are not uncommon occurrences. However, it can be safely said that the occupational strata of parents remain fairly stable over long periods of time. Labor is not as mobile as sometimes theorized.

There have been other indices used to trace the correlation between scholastic achievement and economic status. Among these are amount of rent, presence or absence of telephone in the house, number of rooms in the home, and class of neighbor-

hood. Rent is not always easy to determine, nor are differences in rent necessarily significant. The telephone index does not yield a classification of more than the upper groups. Stoke, tracing the influence of social status upon intelligence quotients says, "The occupation of the parent is the most meaningful index of social status that could be determined with a reasonable degree of accuracy".[1]

In the beginning of this study several occupational classifications were considered. That of Taussig was finally selected. Its criteria are wide in scope, flexible and well reasoned. While not as comprehensive, those used by Haggerty[2] and Collins[3] were helpful in classifying odd cases.

Taussig's criteria for classification are five fold. They are as follows:

1. Amount of income. This is not necessarily of greatest significance. A few occupations, as that of professors, are characterized by low incomes, yet enjoy charm, respect, intellectual interest, and long vacations.
2. Type of work. The type of work, whether manual or mental, leaves its effect on the mind and body.

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1. Stoke, Stuart M. Occupational Groups and Child Development, p.4.
2. Haggerty, M. E. and Nash, Harry B. "Mental Capacity of Children and Paternal Occupation." Journal of Educational Psychology, v.15, p.569, December 1924.
3. Collins, J. E. "The Intelligence of School Children and Paternal Occupation." Journal of Educational Research, v.17, p.159, March 1928.

Arduous work crushes intellectual interest and dulls the mind. The higher occupations invite or favor study, reflective thinking, and aesthetic tastes.

3. Extent of security. The greater the economic security the greater is the peace of mind. The spectre of insecurity plays havoc with mental development.

4. Regularity or irregularity of employment. This is similar to number three. Regular employment, it is commonly known, indicates a substantial degree of security. A steady, sure income means relative control over material wants.

5. Length and expense of training. An occupation calling for a prolonged and expensive training will have a high reward, either monetary or social. The unskilled and semi-skilled classes have little or no training. The higher the scale the longer and the more expensive is the training period.

There are five divisions in Taussig's occupational classifications.

Group I. Unskilled Labor--This group includes day laborers, diggers, and similar workers who offer nothing but their bodily strength. The work is heavy and simple, the hours long. The education of this group is hardly beyond the minimum required by law. Sometimes it is

lower. Maximum wages, which are extremely low, are earned at time of physical maturity. They decrease appreciably at middle age and after. Wages are usually paid by the day or week. Occupations that were classified in this group were domestic workers, day laborers, porters, janitors, and watchmen.

Group II. Semi-skilled Labor--This group, while not needing specialized skill, has some alertness of mind and some responsibility. Its tasks are simple, yet require a degree of intelligence in watching machinery. Included in this group are mechanic helpers, deliverymen, motormen, farmers, truck drivers, gardeners, and firemen. Its wages are more often paid by the week than by the day. Its education is about the same as Group I.

Group III. Skilled Labor--This class of workers has been called the "aristocracy of the laboring class". General mechanical ability is its distinguishing asset. A sure eye, familiarity with tools, and deft, trained hands are pronounced among skilled laborers. Small savings and ownership of a home is common among them. Their education is higher than Groups I or II.

Their children usually complete the grade and secondary schools. Examples of this group are plumbers, carpenters, mechanics, machinists, electricians, bakers, printers, blacksmiths, shoemakers, butchers, auto-refinishers, and barbers.

Group IV. Lower Middle Class--This class avoids rough and dirty work and aims at clerical and semi-intellectual occupations. It has a contempt for manual labor, though its wages are not much, if at all, higher than those of skilled labor. Examples of this group are insurance salesmen, grocers, small merchants, mail clerks, store clerks, grade teachers, foremen, collectors, contractors, inspectors, and secretaries. Generally, the education of this group is carried through the secondary schools. A college education is common to the children of this group.

Group V. Professional Class--This is the well-to-do or the most favored class. Socially it is the most prominent. Salaried officials, public and private, in positions of responsibility belong to this group. Business men and managers of industries also belong to this class.

> Their education is carried through college, often through a long and expensive professional training. Examples of this class are bankers, accountants, lawyers, physicians, clergymen, civil engineers, presidents of corporations, managers of oil companies, pharmacists, high school teachers, university professors, wholesale business men, brokers, editors, and architects. The class is associated with property and accumulation, and the common aim is to procure and maintain a high standard of living.[1]

When viewing the five occupational groups together, a natural cleavage appears. The first three groups, unskilled, semi-skilled, and skilled labor, constitute a class by themselves. Their gradations of wages are continuous, the members have the same point of view, and the same prejudices. They have a latent class consciousness. They have a common dependence on manual labor with a corresponding sense of separation from the well-to-do and possessing classes. Expecting to live on their wages, they do not look to the accumulation of property or to an income derived from property.

The two upper groups have similar feelings of oneness and solidarity. While possessions and incomes among them

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1. Taussig, Frank W. Principles of Economics, v.2, p.124-137.

vary greatly, all have the same habits, hopes, prejudices, and a high standard of living. They resent manual labor for themselves. Accumulation of wealth and investment is their motive. Their economic activity is chiefly the management and direction of industry.

It is recognized that occupational groups cannot be arbitrarily and sharply differentiated. Unless it be a cumbersome category, in all likelihood such a classification of a group of people will be overlapping. Probably the classification cannot be wholly objective. The extent of error is unlikely to be more than one degree. For example, if one classifier placed a case in Group II (semi-skilled labor), another classifier is unlikely to place the same case in Group IV (lower middle class) or in Group V (professional class). To lessen somewhat the extent of error, the city directory was used to ascertain more definitely the function of a parent in a diffused occupation. Given the occupation "shops", in a high school application card, its classification would have become largely a matter of guesswork. The term may be meant either for janitor, helper, machinist, inspector, foreman or even superintendent. This particular function the city directory furnished.

Scholastic achievement in this study means the average grade of the entire four-year period for each high school graduate.

The validity of grades as measures of ability is strongly debated. Grades here, however, are considered as measures of accomplishment. While teachers endeavor to estimate fairly the work of pupils, traditional practices often vitiate appraisal of pupils' work. Educational progress is often-times measured by the time which a pupil is exposed to education rather than by educational growth; and also by the process of mass promotion rather than by individual progress.[1]

Starch, experimenting extensively on marks as evaluation of school work, concluded that "teachers differ enormously in evaluating the same pieces of work in terms of the ordinary percentage scale, differing as much in one subject as in another." He presents four causes of variation: (1) differences in standards of severity or leniency of different teachers, (2) differences in standards of severity or leniency in different schools, (3) differences in credit or penalty assigned by different teachers to any given fact or error in a piece of work, and (4) minuteness of the discrimination between successive steps of merit or quality in a given scale of qualities. The latter two Starch gives the most weight. His experimentations led him to discount the first two because of their insignificance.[2]

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1. Langwick, Mina M. "Do School Marks Indicate Needs or Abilities of Children?" School Life, v.15, p.83, January 1930.
2. Starch, Daniel. Educational Psychology, p.435.

However, a four years' average reduces the subjective element in grading. To that extent it is not unreasonable to consider it an indication of accomplishment. Grades are objected to mostly as evaluations of innate ability rather than of concrete achievement.

Sources of the Data

The data were procured from the records of the Albuquerque High School. They include the records of the graduation classes of 1933, 1934, and 1935. Summer school graduates were included.

Method of Procedure

A list of each graduation class was obtained. For each graduate there is computed by the school an official scholastic average for the entire high school work. This official average was adopted in this study. The school marks E, G, M, P, and F, as used at the Albuquerque High School have the following numerical value: E, 93-100; G, 85-92; M, 77-84; P, 75-76; and F, below 75. The lowest passing mark is 75. To arrive, then, at a four year average, 5 points are given for each E, 4 for each G, 3 for each M, and 2 for each P. The average is the sum of the points divided by the number of grades. For example, a student has 4 E's, 3 G's, 6 M's, and 3 P's; the total number of points is 56 and the number of grades is 16. The average is 3.50, which in terms of the school marks is the midpoint between G and M.

The next step was that of segregating the graduates of each class year into the five occupational groups. This segregation was based on the parental occupation as indicated on the application card of each graduate. The English-speaking and the Spanish-speaking students were separated on the basis of family names. Spanish family names are distinct. The students with Spanish family names were classified as Spanish-speaking and the students not with Spanish family names were classified as English-speaking.

Then the means, medians, ranges, frequency distributions, and percentage relatives were computed for the following:

1. The five occupational classifications of the three graduation classes with the Spanish-speaking and the English-speaking graduates combined.
2. The five occupational groups of only the Spanish-speaking graduates of the three graduation classes.
3. The five occupational groups of only the English-speaking graduates of the three graduation classes.
4. The five occupational groups of Spanish-speaking and English-speaking graduates combined for each of the class years, 1933, 1934, 1935.
5. The five occupational groups of only the Spanish-speaking graduates for each of the class years, 1933, 1934, 1935.
6. The five occupational groups of only the English-speaking graduates for each of the class years, 1933, 1934, 1935.

Review of Related Studies

A review of the several investigations and observations of other investigators shows a positive correlation between the economic status of parents and scholastic achievement of pupils. Those holding the most favored economic status in life have more capability than those in the less fortunate levels. That there is this common agreement among economists, educators, and psychologists is hardly questioned.

Can man by changing the conditions under which his offspring are reared produce in them significant changes both in their capabilities and their achievements? Jordan, after a study of twelve hundred children, using the Pintner-Cunningham Primary Mental Tests of Intelligence, answers in the affirmative. "When the scores of the children were classified into groups according to the economic level of their parents it was clear that in general the median scores increased proportionately with the economic level." Substantial differences appeared among the various occupational groups. Jordan identifies each occupational group with a particular level of leisure, refinement, opportunity, and control over material goods and services.[1]

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1. Jordan, Arthur M. "Occupations and Intelligence Scores." Journal of Applied Psychology, v.17, p.103-119, April 1933.

Stoke, tracing the influence of social status upon intelligence quotients with the Cyril Burt Mental and Scholastic Tests says "The relationship between occupational groups and intelligence is very strong". He concludes "that for children from the lower social strata the harder literary tests must be forever beyond their cultural horizon".[1]

However, three-fourths of the children of average intelligence that he tested came from below the highest occupational group. This he attributes to the above average ability and to the abundant opportunities in this country. Stoke made his study in 1927.[2]

Hirsch tested three hundred school children over a six year period in Nashville, Tennessee, with the Otis Primary Test and the Otis Advanced Test. He found a consistent correlation between the economic status of parents and the I. Q.'s of their children.[3]

The study of Haggerty and Nash is significant. They surveyed New York's rural schools covering 8,121 school children from the third to the eighth grade. Their investigation included 55 occupations. They conclude thus:

> "But little more than one-fourth of children of miners, masons, stoneworkers, laborers, farmers, bakers, and blacksmiths appear to be as able to profit by the work of the elementary high school

1. Stoke, Stuart M. Op. cit., p.24.
2. Stoke, Stuart M. Op. cit., p.87.
3. Hirsch, Nathaniel D. "An Experimental Study Upon Three Hundred School Children Over a Six Year Period." Genetic Psychology Monographs, v.7, p.532.

as three-fourths of children of druggists, brokers, officials, insurance men, lawyers, teachers, office workers, doctors, dentists, accountants, bankers, and merchants."

Their explanation is that children of the professional class can better master the current curriculum with its emphasis on conceptual knowledge.[1]

Holley, concerned with the qualitative analysis of the relationships between the schooling of children and their home conditions, made studies at Decatur, Centralia, Champaign, Gibson City, and Urbana, Illinois. His studies found "a close relationship between the advantages of the home, its education, economic, and social stations and the number of years of schooling which its children receive".[2]

Of large scale investigations on school children, Collins' study appears to be fairly representative. The survey of the first six grades included 4,727 children. The occupational distribution was representative of an American industrial city.

His occupational groupings exemplify classifications into levels of intelligence requirements justified by the Barr Scale of occupational intelligence. The most important conclusions of Collins' extensive study are:

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1. Haggerty, M. E. and Nash, Harry B. Op. cit., p.563.
2. Holley, Charles E. "The Relationship Between Persistence in School and Home Conditions." National Society for the Scientific Study of Education Yearbook, v.15, part 2, p.96.

1. The children of professional and managerial fathers have higher intelligence quotients on the average than those of clerical or trade fathers, who in turn have a higher intelligence rating than the children of laboring fathers.
2. The professional and managerial groups lie almost entirely above the general mean, whereas the unskilled labor and agricultural groups lie almost entirely below the general mean.
3. The chances are that half the children of professional parents will be of superior intelligence and that not more than one-tenth of the children of unskilled laborers will show a similar degree of intelligence.
4. It would seem, therefore, that such a direct relationship exists between the probable school success of the child and the occupational status of the family as to make the latter a definite factor in development of adequate educational and guidance progress.[1]

If we summarize the studies of the correlation between occupational status and scholastic achievement and intelligence, one salient deduction is inevitable: an improved

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1. Collins, J. E. Op. cit., p.157-169.

environment occasioned by a higher occupational status of parent will improve correspondingly the child's scholastic achievements. It may still be questioned whether the correlation is due to heredity or environment. A crucial test would be to make a study very early in the child's life before the influence of environment had been at work long enough to be a significant factor. To do that would be to study the influence of heredity. This specific objective was attempted by Furfey. Using the Linfert-Hierholzer Infant Scale and the Chapman-Sims Socio-Economic Scale, Furfey found "no significant correlation between intelligence of young offspring and parental status in the socio-economic world".[1]

In this study the relation of scholastic achievement and economic status of Spanish-speaking graduates was to be compared with the same relation of the English-speaking graduates. The comparison will show differences, whose cause it is important to know as far as possible. Three main possible factors may cause the differences: (1) racial heredity, (2) inferior home environment, and (3) language limitations.

There is an implication of racial inferiority when a racial group falls below another in intelligence tests.

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1. Furfey, Paul H. "The Relation Between Socio-Economic Status and Intelligence of Young Infants as Measured by the Linfert-Hierholzer Scale." Journal of Genetic Psychology, v.35, p.479, September 1928.

Delmet tested 341 Mexican children of a Los Angeles County school with standard tests. On the basis of the results Delmet was able to conclude that "Mexican children studied show on the whole greater school retardation, less acceleration, and are on the whole much older for a given grade than are white children".[1]

A conclusion similar in nature was reached also by Hughes. The latter used the Goodenough Scale on a sampling of 12,000 drawings by Mexican and non-Mexican pupils from the first four grades of the San Antonio public schools. He found that the higher scores are in favor of the non-Mexican children.[2]

Garretson, investigating the causes of retardation among Mexican children, declared mental ability the principal causative factor.[3]

A state-wide survey in New Mexico by Sinninger, based on the Monroe Silent Reading Test, revealed that the Spanish-speaking pupils show decidedly less ability in both rate and comprehension than do the English-speaking pupils.[4]

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1. Delmet, D. F. "A Study of the Mental and Scholastic Abilities of Mexican Children in the Elementary School." Journal of Juvenile Research, v.14, p.278, October 1930.
2. Hughes, L. S. A Comparative Study of the Intelligence of Mexican Children.
3. Garretson, O. K. "A Study of the Causes of Retardation Among Mexican Children." Journal of Educational Psychology, v.19, p.40, January 1928.
4. Sinninger, Harlan. New Mexico Reading Survey, p.88-89.

Tireman, in a survey of reading in the elementary schools of New Mexico, found that the Spanish-speaking children made progressively lower scores than the English-speaking. He partly attributes his conclusion to the economic level. He stresses the amount of reading matter available for children at home, whose quality and amount he presumes "reasonably" to be greater the higher the economic status. "The English-speaking make use of their more favorable environment and continue to read. The Spanish-speaking are unable to find (or to have) material in English, and cease to read."[1] The environment of the Spanish-speaking is not conducive to reading; it has few books and periodicals. A newspaper, in many cases, is the only reading matter in Spanish-speaking homes.

Both Sanchez in New Mexico and Manuel in Texas found extremes in the economic status of Spanish-speaking people. But the general condition was "inferior" and "underprivileged". Unskilled labor, pitiably low wages, unsteady employment, low standard of living--these are, in the main, characteristics of the Spanish-speaking people in the Southwest, according to Manuel[2] and Sanchez. With this condition, supported by the almost imperative findings of many investigators, Sanchez feels impelled to believe firmly that

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1. Tireman, Lloyd S. "Reading in the Elementary Schools of New Mexico." Elementary School Journal, v.30, p.624, April 1930.
2. Manuel, Herschel Thurman. The Education of Mexican and Spanish-speaking Children in Texas.

differences noted in test results of native children may in a large degree be explained by the low socio-economic status of the people.[1]

The existence of the language handicap of the native pupils should be recognized. The medium of expression in their homes is predominantly Spanish and its influence must be given serious consideration. There are conflicting conclusions on the subject. Garretson holds that the language difficulty operates to a disadvantage in grades one to two, disappearing at the time the child reaches the upper grades. Manuel and Wright, because the child on entering school knows little or nothing of the school language, say he has "more to learn". He has to learn both the oral and the written language of the school.[2] Otis believes the handicap a serious one only in the elementary grades.[3] There is this common agreement: the language handicap disappears beyond the lower grades and is almost non-existent in the high school grades. The rate of disappearance occurs more rapidly among Spanish-speaking pupils of high socio-economic status.

Yoder, a recognized student of the question, closes a review of a mass of data with these words: "It may be

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1. Sanchez, George I. A Study of the Scores of Spanish-Speaking Children on Repeated Tests, p.18.
2. Manuel, Herschel Thurman and Wright, Carrie E. "The Language Difficulty of Mexican Children." Journal of Genetic Psychology, v.36, p.461, September 1929.
3. Otis, Arthur S. Manual of Directions.

differences noted in test results of native children may in a large degree be explained by the low socio-economic status of the people.[1]

The existence of the language handicap of the native pupils should be recognized. The medium of expression in their homes is predominantly Spanish and the instruction must be given serious consideration. There are conflicting conclusions on the subject. Patterson holds that the language difficulty operates to a disadvantage in grades one to two, disappearing at the time the child reaches the upper grades. Hamel and Wright, because the child on entering school knows little or nothing of the school language, may be the "more to learn". He has to learn both the oral and the written language of the school.[2] Ortiz believes the handicap a serious one only in the elementary grades.[3] There is this common agreement: the language handicap disappears beyond the lower grades and is almost non-existent in the high school grades. The rate of disappearance occurs more rapidly among Spanish-speaking pupils of high socio-economic status.

Yoder, a recognized student of the question, closes a review of a mass of data with these words: "It may be

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1. Sanchez, George I. A Study of the Source of Spanish-Speaking Children as Represented Groups, p. 33.
2. Hamel, Herbert Ramsen and Wright, Gertrude S. "The Ian use DIFFICULTY of Mexican Children." Journal of Genetic Psychology, v.6a, p.461, September 1928.
3. Ortiz, Arthur R. Journal of Textbooks.

correctly concluded that the consensus of competent scientific thought... finds no proof of racial inferiority or superiority..."[1]

The question must take into full account such factors as amount of opportunity and education, social status, and the economic level. Not until their influence is definitely ascertained will finalities on innate racial differences be tenable.

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1. Yoder, D. "Present Status of the Question of Racial Differences." Journal of Educational Psychology, v.19, p.463-470, October 1928.

Part II

ANALYSIS OF DATA

In seeking a measure of central tendency, both the mean and median were computed. The means and medians of the different parts of the data correspond closely as Figure I graphically shows. The difference between the two is small. There is no reason, then, to use both as measures of central tendency. Since the median corresponds closely to the mean, the latter may be accepted as a fairly representative measure.

The mean, median, range, number of graduates, and percentage relatives of each occupational group, based on the four years' grades of 801 Albuquerque High School graduates, are shown in Table I.

Table I shows the distribution of the graduates' parents over the five occupational groups. The 801 graduates are distributed thus: unskilled labor, 50; semi-skilled labor, 78; skilled labor, 164; lower middle class, 287; and professional class, 222. It is seen that the number of parents in the two lowest occupational groups, unskilled and semi-skilled labor, are comparatively very small. Their numbers combined are less than the number falling in the skilled labor group. The

lower middle class group has the highest number of parents, closely followed by the professional class. Their numbers are decidedly higher. Combined these two upper classes have a total of 509 or 74% of the 801 graduates. The three labor groups have a combined total of 292 or only 36% of the 801 graduates. On the basis of this distribution, the student body of the Albuquerque High School comes, preponderantly, from middle class and professional parents. Roughly, one-third of the graduates belong to the working class.

From an inspection of Table I and Figure I, the relationship between paternal occupation and scholastic achievement is seen to be strong. To present significant comparisons of the means of the five occupational groups, it was considered appropriate to use percentage relatives. Percentage relatives in this study are computed by using the mean of Group I as a base equalling 100%. Thus differences in means are shown in percentage relatives.

The mean of Group V, the professional class, is 3.62, much higher than the mean of any other group. Small differences exist between the means of the lower middle class group and skilled labor. The former's is 3.14 while the latter's is 3.18. The mean of unskilled labor is 2.92; that of semi-skilled labor is 2.95. It is obvious that skilled labor makes a markedly higher average than the other two working class groups, even slightly higher than the lower

middle class group. Significantly enough, the professional class has a percentage relative of 123.84% or 23.84% higher than that of the unskilled labor group.

The ranges of the occupational groups reveal a significant finding: all the groups, except unskilled labor, have similar ranges. This means that the upper four occupational groups have graduates with both very high and very low means, though not in equal proportions. The unskilled labor group is dominated by middle value means with only a few means above 3.40.

Table II shows the frequency distributions of averaged grades in the five occupational groups for the Spanish-speaking and English-speaking graduates combined. It will be noticed that the class intervals in the frequency distributions are all equal, facilitating comparisons among the occupational groups.

Obviously, the frequency distributions show an increase in the number of means above the interval 4.00--4.19 as we move from Group I toward Group II.

TABLE I

MEANS, MEDIANS, RANGES, NUMBER OF CASES, AND PERCENTAGE RELATIVES OF THE FIVE OCCUPATIONAL GROUPS OF THE SPANISH-SPEAKING AND ENGLISH-SPEAKING PUPILS COMBINED FOR THE THREE GRADUATION CLASSES

Occupational Groups	Number of Pupils	Mean	Median	Range	Percentage Relative [1]
V	222	3.62	3.56	2.87	123.84
IV	287	3.14	3.13	2.93	107.62
III	164	3.18	3.13	2.71	108.74
II	78	2.95	2.92	2.50	101.12
I	50	2.92	2.935	1.94	100.00
Total	801				

1. Percentages in this column are computed using the mean of Group I as a base equalling 100 percent.

TABLE II

FREQUENCY DISTRIBUTION OF AVERAGED GRADES
IN THE FIVE OCCUPATIONAL GROUPS FOR THE SPANISH-SPEAKING
AND ENGLISH-SPEAKING PUPILS COMBINED

Occupational Groups	I	II	III	IV	V
Arithmetic Mean of Grades	Frequency	Frequency	Frequency	Frequency	Frequency
5.00-5.19...	0	0	0	1	1
4.80-4.99...	0	0	1	1	8
4.60-4.79...	0	0	5	5	16
4.40-4.59...	0	1	1	6	15
4.20-4.39...	0	0	3	4	18
4.00-4.19...	1	4	10	4	17
3.80-3.99...	3	1	7	15	16
3.60-3.79...	2	4	8	21	19
3.40-3.59...	2	4	13	27	22
3.20-3.39...	4	12	17	44	24
3.00-3.19...	11	12	35	42	19
2.80-2.99...	10	6	21	30	19
2.60-2.79...	3	14	19	38	19
2.40-2.59...	7	10	17	35	7
2.20-2.39...	3	7	7	13	1
2.00-2.19...	4	3	0	1	1
Totals	50	78	164	287	222

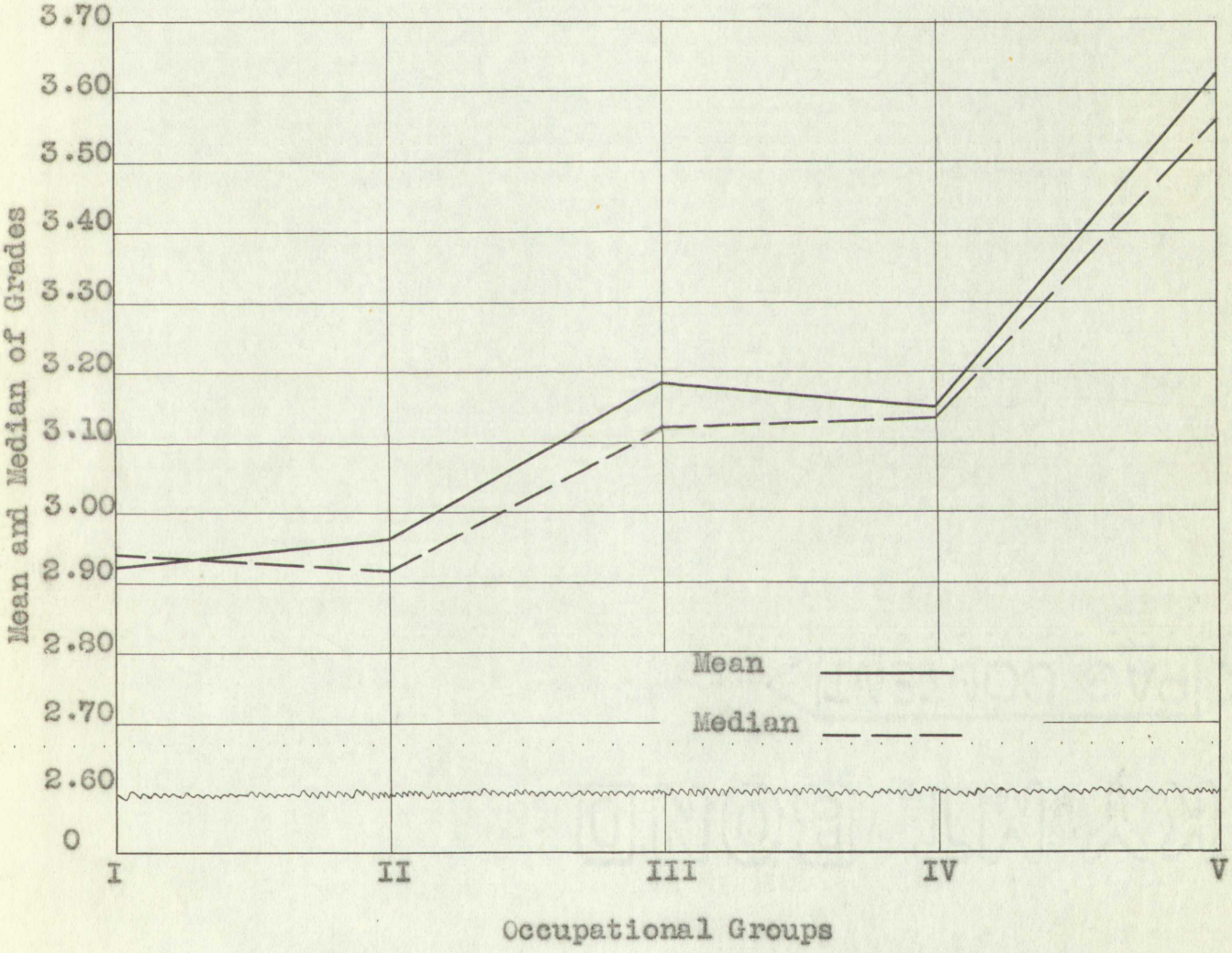

Fig. 1. Mean and Median of High School Grades of 801 Spanish-Speaking and English-Speaking Pupils Combined Among the Five Occupational Groups.

Having observed the general data and tendencies of Table I and II and Figure I, it is important to note the data of the component parts to be presented in the following tables and figures. The extent of consistency between the component parts and the data taken as a whole measures the reliability of our findings.

Table III presents the scholastic achievement of the 134 Spanish-speaking graduates among the five occupational groups. The distribution of the Spanish-speaking graduates among the five occupational groups differs from the distribution of the English-speaking and Spanish-speaking graduates combined, where two-thirds are found in the lower middle class and the professional groups. The Spanish-speaking graduates, according to paternal occupation, belong largely in the three working class groups. Only one-third of them are represented in the two upper groups.

In Table III the means and medians, while with some irregularities as indicated in Figure II, are similar to those of Table I and II. A relationship between scholastic achievement and paternal occupation is shown. The mean of the professional class is comparatively much higher than any other group. Its percentage relative is 19.51% higher than that of semi-skilled labor, which is the lowest.

Irregularities occur in the data of the Spanish-speaking graduates. Group IV is noticeably lower even than unskilled labor and barely above semi-skilled labor. While

the mean of skilled labor does not approach that of the professional class, it is much higher than the other three groups.

Table III shows that only the professional class and skilled labor have wide ranges. It can be said that these two groups possess extreme values, while the other three groups do not. Table IV further indicates this. Only the skilled labor and the professional groups have an appreciable distribution of means above the interval 3.20--3.39.

The comparatively small sampling of Spanish-speaking graduates, 134, lends weakness to the data of this racial group. The results are likely to introduce irregularities due solely to the smallness of the sample. Data based on large and equal samplings of Spanish-speaking and English-speaking graduates would preclude such irregularities.

TABLE III

MEANS, MEDIANS, RANGES, NUMBER OF PUPILS AND PERCENTAGE RELATIVES OF THE FIVE OCCUPATIONAL GROUPS OF THE SPANISH-SPEAKING PUPILS OF THE THREE GRADUATION CLASSES

Occupational Groups	Number of Pupils	Mean	Median	Range	Percentage Relative
V	13	3.39	3.27	2.16	114.19
IV	32	2.88	2.79	1.56	97.08
III	36	3.10	3.095	2.34	106.53
II	28	2.81	2.71	1.51	94.68
I	25	2.97	2.94	1.87	100.00
Total	134				

TABLE IV

FREQUENCY DISTRIBUTION OF AVERAGED GRADES
IN THE FIVE OCCUPATIONAL GROUPS
FOR THE SPANISH-SPEAKING PUPILS

Occupational Groups	I	II	III	IV	V
Arithmetic Mean of Grades	Frequency	Frequency	Frequency	Frequency	Frequency
5.00-5.19...	0	0	0	0	0
4.80-4.99...	0	0	0	0	0
4.60-4.79...	0	0	1	0	1
4.40-4.59...	0	0	0	0	0
4.20-4.39...	0	0	0	0	1
4.00-4.19...	1	0	1	0	0
3.80-3.99...	1	0	3	1	1
3.60-3.79...	2	1	2	2	1
3.40-3.59...	1	0	2	1	1
3.20-3.39...	1	5	4	6	4
3.00-3.19...	6	5	8	3	2
2.80-2.99...	5	1	6	3	0
2.60-2.79...	2	8	2	6	1
2.40-2.59...	3	6	5	7	1
2.20-2.39...	2	1	2	3	0
2.00-2.19...	1	1	0	0	0
Totals	25	28	36	32	13

Table V presents the scholastic achievement of the 667 English-speaking graduates in the five occupational groups.

The distribution of English-speaking graduates in the five occupational groups is very similar to the distribution of the two racial groups combined, as is shown in Table I. It is seen that the number of parents falling in the unskilled and semi-skilled labor group is but 75 or 11% of the 665. The professional class and the lower middle class groups claim 464 parents or 69% of the sample. The total number falling in the three working class groups is 203 or 31%. On the basis of this data, it can be said again that a large majority of the Albuquerque High School graduates come from middle class and professional parents. The working class groups contribute only one-third of the graduates.

A close examination of Tables V and VI reveals a strong and consistent relationship between scholastic achievement and paternal occupation. The mean of the professional class is decidedly higher than the means of the other groups. Its mean of 3.63 has a percentage relative of 126.45%. There is a distinct difference between unskilled and semi-skilled labor, and between semi-skilled and skilled labor. The mean and median of both skilled labor and the lower middle class groups are nearly equal. The mean of skilled labor is slightly higher.

Table V shows ranges similar to the ranges of Table I. It appears that the four upper occupational groups of English-

speaking graduates have extreme mean values, varying in proportions according to the occupational scale. The distribution of the mean values in the occupational classifications is shown in Table VI. It will be noticed that the number of higher means increase as we move from Group I to Group V.

It was deemed advisable to make a graphic comparison between the means of the Spanish-speaking graduates with the means of the English-speaking graduates. Figure II shows curves for the means of these two groups. Except for a slight drop from Group III to Group IV, the curve of the English-speaking graduates moves consistently and definitely upward as we go from Group I to Group V. While its trend seems also to be upward, the curve of the Spanish-speaking graduates has strong irregularities. From the skilled labor group to the lower middle class group, the curve drops sharply. From the unskilled labor to semi-skilled labor group another drop occurs. Another significant feature of Figure II is the noticeable spread between the two racial groups except in Group I.

TABLE V

MEANS, MEDIANS, RANGES, NUMBER OF PUPILS AND PERCENTAGE RELATIVES OF THE FIVE OCCUPATIONAL GROUPS OF THE ENGLISH-SPEAKING PUPILS OF THE THREE GRADUATION CLASSES

Occupational Groups	Number	Mean	Median	Range	Percentage Relative
V	209	3.63	3.60	2.87	126.45
IV	255	3.18	3.13	2.93	110.60
III	128	3.20	3.13	2.71	111.39
II	50	3.03	3.00	2.50	105.51
I	25	2.87	2.87	1.82	100.00
Total	667				

TABLE VI

FREQUENCY DISTRIBUTION OF AVERAGED GRADES
IN THE FIVE OCCUPATIONAL GROUPS
FOR THE ENGLISH-SPEAKING PUPILS

Occupational Groups	I	II	III	IV	V
Scholarship Index[1] Arithmetic Mean of Grades	Frequency	Frequency	Frequency	Frequency	Frequency
5.00-5.19	0	0	0	1	1
4.80-4.99	0	0	1	1	8
4.60-4.79	0	0	4	5	15
4.40-4.59	0	1	1	6	15
4.20-4.39	0	0	3	4	17
4.00-4.19	0	4	9	4	17
3.80-3.99	2	1	4	14	15
3.60-3.79	0	3	6	19	18
3.40-3.59	1	4	11	26	21
3.20-3.39	3	7	13	38	20
3.00-3.19	5	7	27	39	17
2.80-2.99	5	5	15	27	19
2.60-2.79	1	6	17	32	18
2.40-2.59	4	4	12	28	6
2.20-2.39	1	6	5	10	1
2.00-2.19	3	2	0	1	1
Totals	25	50	128	255	209

1. Found by computing the arithmetic mean of all grades earned in high school by given pupils.

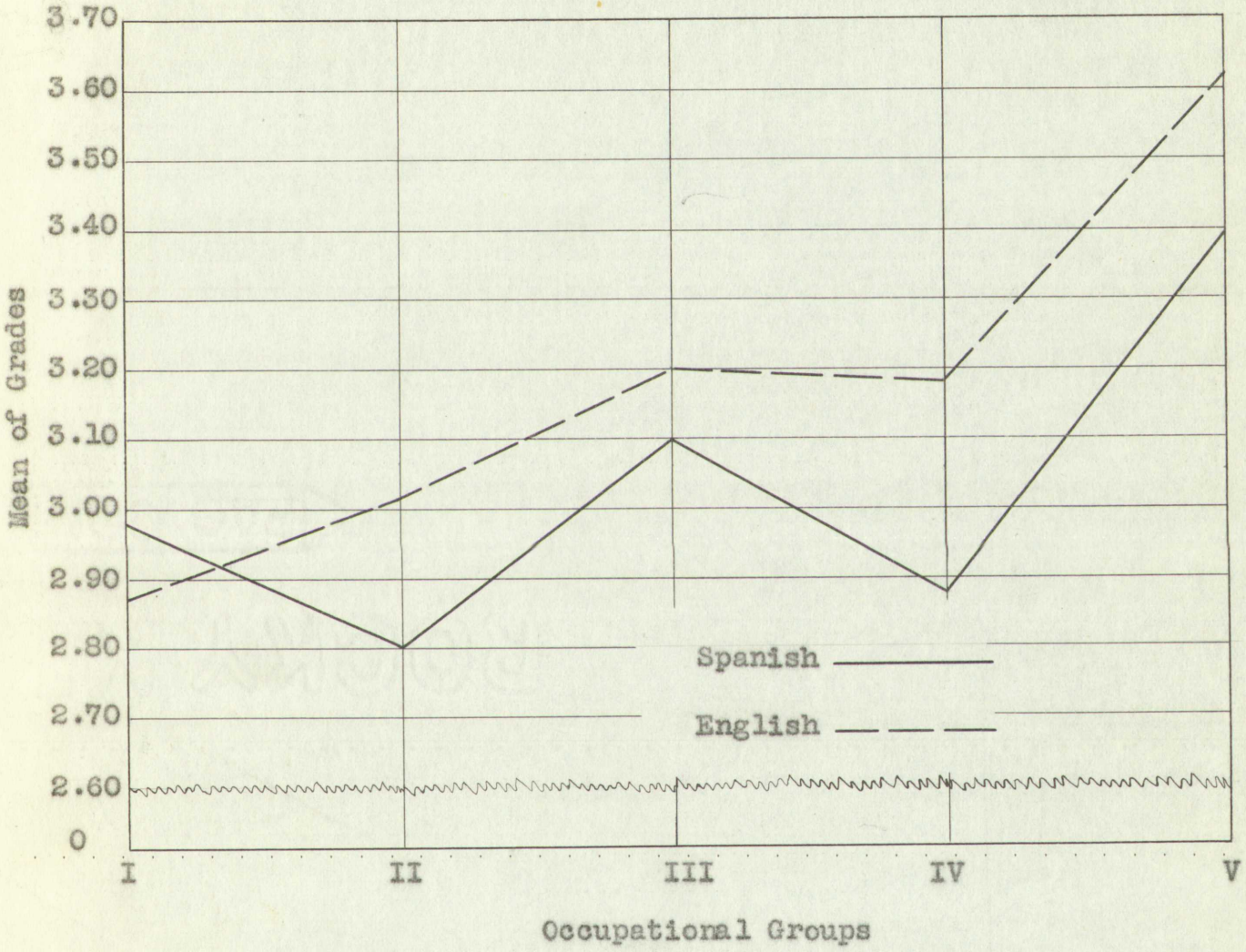

Fig. 2. Mean of the Spanish-Speaking and of the English-Speaking Pupils Based on the Four Years' Grades, Among the Occupational Groups.

Tables VII, VIII, and IX were constructed to present the scholastic achievement of each occupational group within each graduation class. It will be noted that Table VII includes the data of the Spanish-speaking and the English-speaking graduates combined. Tables VIII presents the yearly data of Spanish-speaking graduates, while Table IX presents the yearly data of the English-speaking graduates. Figures III, IV, and V graphically disclose the trends and the relative positions of the five occupational groups within the graduation classes with the two racial groups combined and separated.

When the data is broken up by years as shown in Tables VII, VIII, and IX, and Figures IV and V the results are quite similar to the general data already analyzed. The similarity lies in the consistent relative positions of the occupational groups according to mean, median and percentage relative. The professional class is decidedly highest and the unskilled and semi-skilled labor are uniformly low. The skilled labor in most cases is slightly higher than the lower middle class group. Similarity lies also in the distribution by years, which corresponds closely to the distribution of the general data. With the two racial groups combined about 64% of the graduates come from parents of the lower middle class and professional class. The rest, 36%, come from the working class groups.

When dealing with the racial groups separated, the results in the Spanish-speaking group are different. Only about 33% belong in the two upper occupational classifications, the rest, or about 67%, belong in the three working class groups.

TABLE VII

MEANS, MEDIANS, RANGES, NUMBER OF PUPILS, AND PERCENTAGE RELATIVES OF THE FIVE OCCUPATIONAL GROUPS OF THE SPANISH-SPEAKING AND ENGLISH-SPEAKING PUPILS COMBINED FOR EACH GRADUATION CLASS

1933					
Occupational Groups	Number	Mean	Median	Range	Percentage Relative
V	65	3.69	3.60	2.87	128.03
IV	77	3.12	3.13	2.40	108.40
III	44	3.24	3.13	2.51	112.63
II	24	3.05	3.065	1.99	106.08
I	12	2.88	2.77	1.87	100.00
Total	222				

1934					
Occupational Groups	Number	Mean	Median	Range	Percentage Relative
V	79	3.55	3.41	2.42	121.42
IV	103	3.19	3.19	2.68	109.10
III	64	3.27	3.195	2.67	111.87
II	27	2.90	2.87	2.12	99.33
I	17	2.92	2.93	1.10	100.00
Total	290				

1935					
Occupational Groups	Number	Mean	Median	Range	Percentage Relative
V	78	3.60	3.60	2.47	122.01
IV	107	3.125	3.07	2.73	105.90
III	56	3.02	2.87	2.55	102.55
II	27	2.91	2.78	2.32	98.68
I	21	2.95	3.00	1.76	100.00
Total	289				

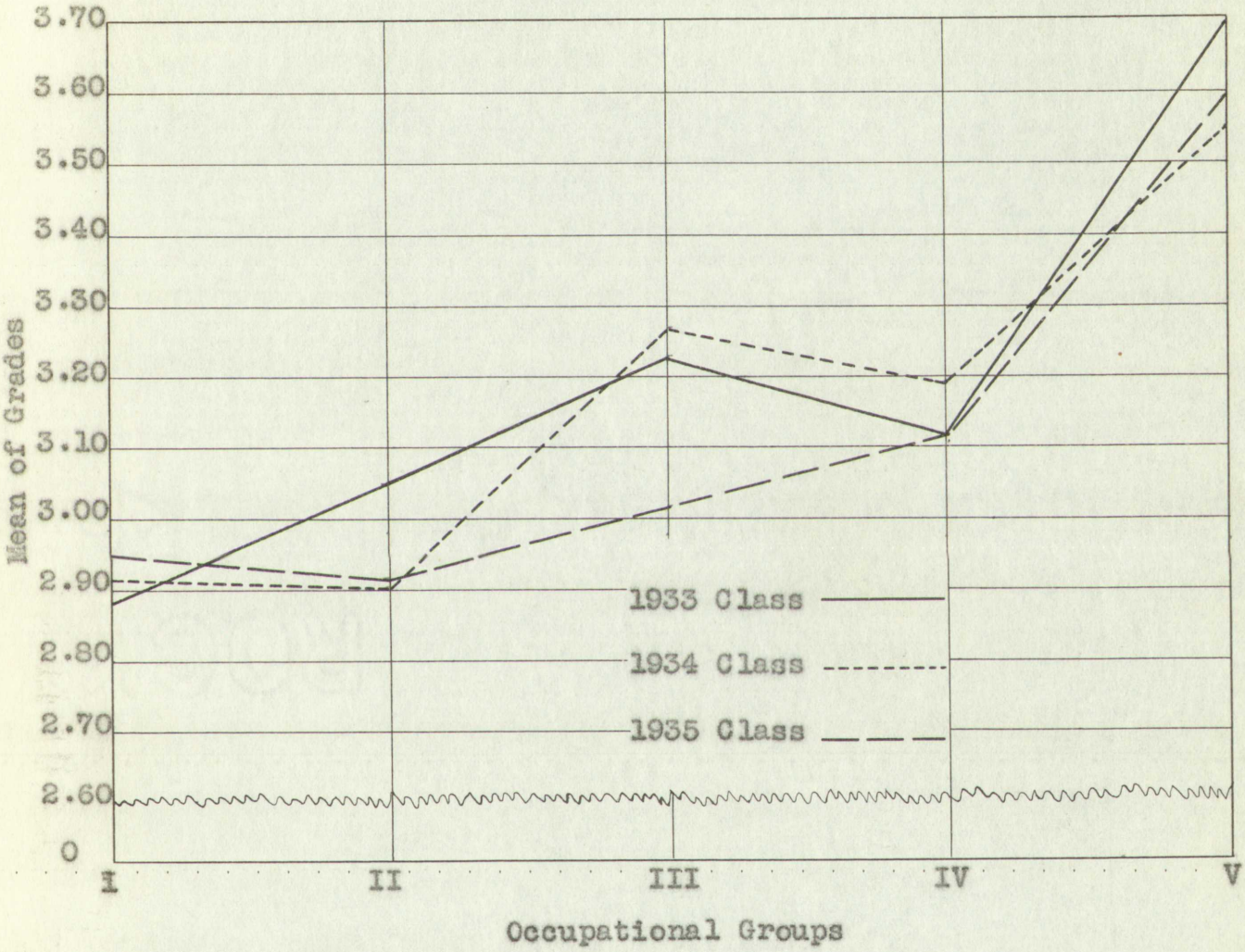

Fig. 3. Mean of English and Spanish-Speaking Graduates Combined for Each Class Year.

TABLE VIII

MEANS, MEDIANS, RANGES, NUMBER OF PUPILS, AND PERCENTAGE RELATIVES OF THE FIVE OCCUPATIONAL GROUPS OF THE SPANISH-SPEAKING PUPILS FOR EACH GRADUATION CLASS

1933					
Occupational Groups	Number	Mean	Median	Range	Percentage Relative
V	2	3.38	3.38	1.82	110.43
IV	11	2.89	2.87	1.13	95.12
III	8	3.31	3.23	2.34	108.93
II	10	2.80	2.25	1.06	92.03
I	6	3.04	2.97	1.87	100.00
Total	37				

1934					
Occupational Groups	Number	Mean	Median	Range	Percentage Relative
V	5	3.48	3.25	1.56	118.14
IV	7	3.08	3.21	1.56	104.73
III	15	3.09	3.13	1.47	104.90
II	8	2.99	2.975	1.19	101.52
I	9	2.94	2.94	.96	100.00
Total	44				

1935					
Occupational Groups	Number	Mean	Median	Range	Percentage Relative
V	6	3.33	3.39	1.06	112.68
IV	14	2.78	2.66	1.30	94.07
III	13	2.97	2.80	1.80	100.71
II	10	2.69	2.65	.95	90.97
I	10	2.95	2.935	1.31	100.00
Total	53				

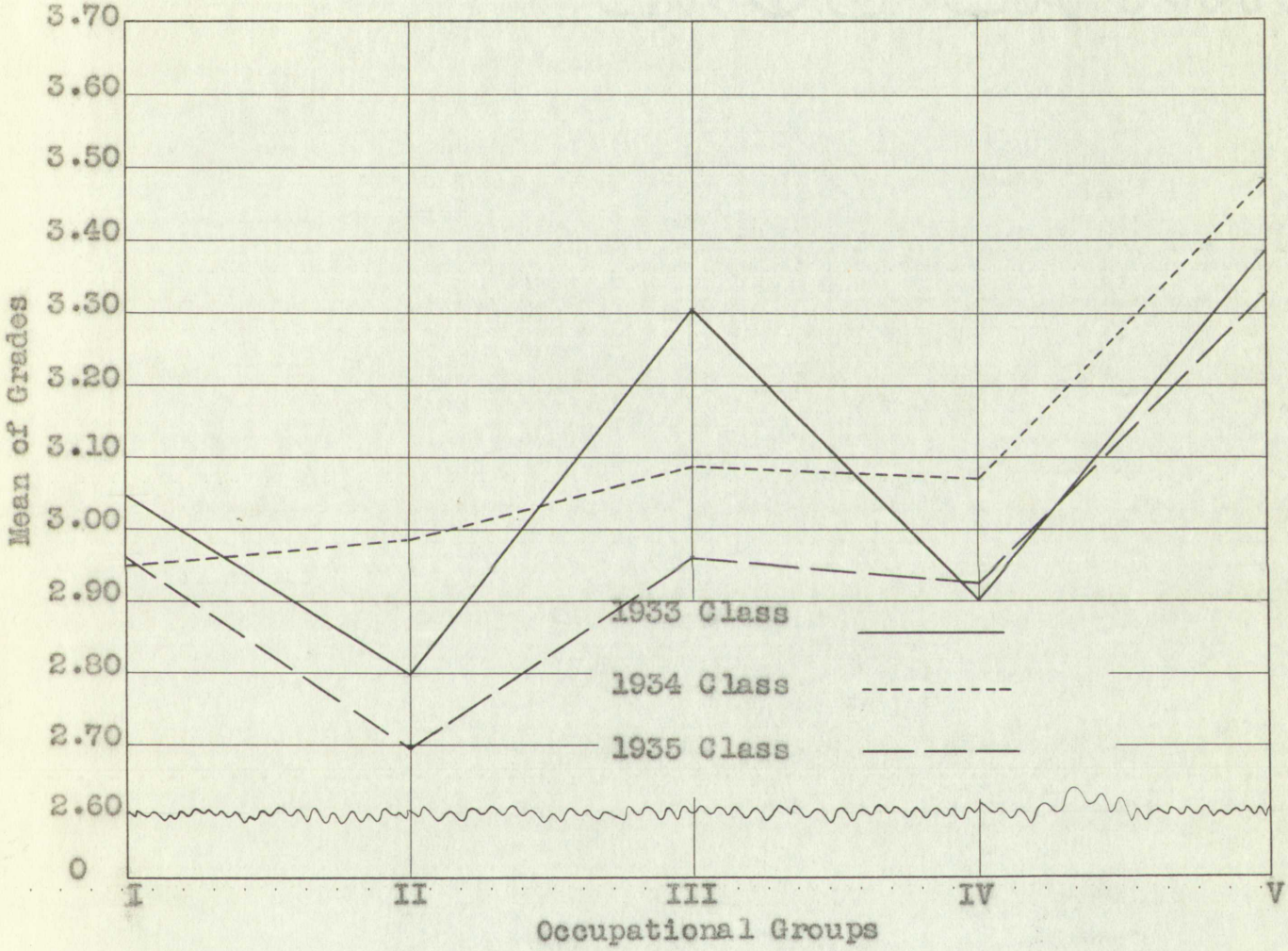

Fig. 5. Mean of the Spanish Students' Grades Among the Five Occupational Groups for Each Graduation Class.

TABLE IX

MEANS, MEDIANS, RANGES, NUMBER OF PUPILS, PERCENTAGE RELATIVES OF THE FIVE OCCUPATIONAL GROUPS OF THE ENGLISH-SPEAKING PUPILS FOR EACH GRADUATION CLASS

1933					
Occupational Groups	Number	Mean	Median	Range	Percentage Relative
V	63	3.70	3.60	2.87	136.04
IV	66	3.16	3.16	2.40	116.27
III	36	3.23	3.13	2.31	118.79
II	14	3.24	3.675	1.99	119.12
I	6	2.72	2.535	1.69	100.00
Total	185				

1934					
Occupational Groups	Number	Mean	Median	Range	Percentage Relative
V	74	3.55	3.50	2.42	122.66
IV	96	3.18	3.16	2.68	109.95
III	49	3.32	3.25	2.67	114.76
II	19	2.885	2.87	2.12	99.48
I	8	2.90	2.90	.98	100.00
Total	246				

1935					
Occupational Groups	Number	Mean	Median	Range	Percentage Relative
V	72	3.665	3.66	2.47	124.45
IV	93	3.17	3.13	2.73	107.86
III	43	3.04	2.88	2.55	103.24
II	17	3.04	3.00	2.25	103.31
I	11	2.945	3.00	1.76	100.00
Total	236				

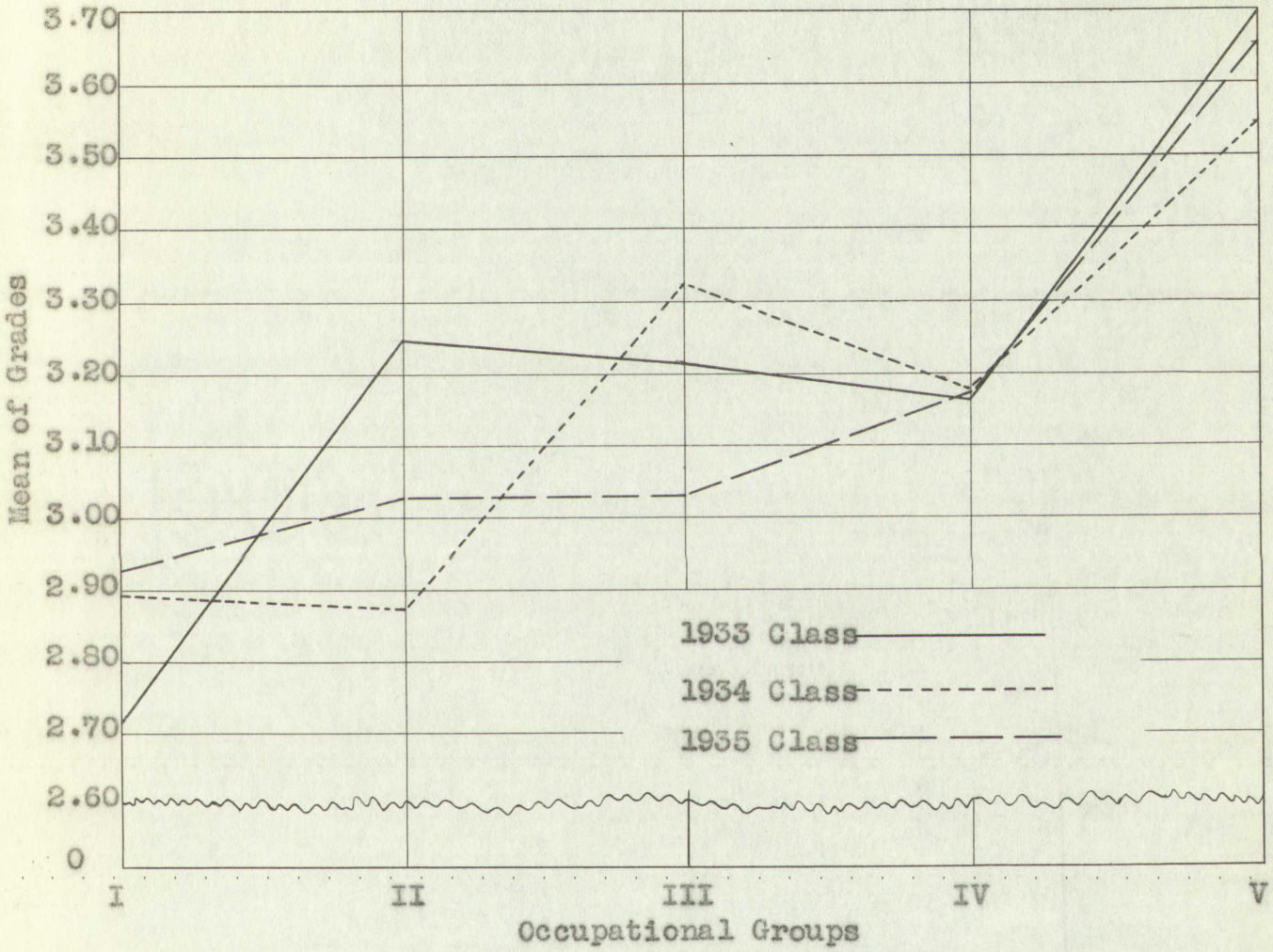

Fig. 4. Mean of the English-Speaking Students' Grades Among the Five Occupational Groups for Each Graduation Class.

Part III

GENERAL SUMMARY AND CONCLUSIONS

To summarize the analysis of the data, observable evidences have been presented showing a strong relationship between scholastic achievement and paternal occupational status. High school graduates whose parents belong to the most favored social and economic class, the professional group, have the highest scholastic achievement. On the other hand, the graduates whose parents belong to the least favored classes, the unskilled and semi-skilled labor groups, have the lowest scholastic achievement. Graduates of the skilled labor group are slightly above those of the lower middle class group. However, the scholastic achievement of both is only fair.

A two-thirds majority of the Albuquerque High School graduates come from parents of the middle class and professional groups. This is true when considering the Spanish-speaking and the English-speaking graduates combined and the latter separately. However, two-thirds of the Spanish-speaking graduates come from parents who belong to the three working class groups. Only one-third may be classed as

middle class and professional. This distribution of the Spanish-speaking graduates in the occupational groups has a direct bearing on their scholastic achievement.

The charts presented in this study show a somewhat constant spread between the mean curve of the English-speaking and that of the Spanish-speaking graduates, whose mean curve is lower. In other words, the scholastic achievement of the Spanish-speaking graduates is inferior to that of the other racial group.

The writer is of the opinion that the lower scholastic achievement of the Spanish-speaking graduates is a result of their generally low socio-economic status. The writer is in agreement with Sanchez, Tireman, and Manuel. The Spanish-speaking people in the Southwest have inferior living conditions and are underprivileged. Brilliant school work, refinement and culture are hardly paralleled by pitiably low wages, unsteady employment, low standard of living, poor housing and inadequate nourishment, which are the observable living conditions of most Spanish-speaking people.

Because of more and more new evidence, the assumption of innate racial or individual inferiority or superiority is not accepted by most investigators. Finalities on the question are no longer tenable.

The factor of occupational status is important in both English-speaking and Spanish-speaking students. In the

words of Davis,

> "The absence of culture in workers' homes is often cited as a mark of their inferiority, although most people forget that culture is generally expensive... privilege always has a tendency to deny the lowest classes abundant opportunities and then to accuse them of innate defects because they do not have the culture which privilege itself has denied".[1]

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1. Davis, Jerome. Capitalism and Its Culture, p.448,451.

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