DOCUMENT RESUME

ED 106 394 UD 015 124

AUTHOR Davis, Sharon A.; Haller, Emil J.
TITLE Socioeconomic Segregation within Elementary School Classrooms and Teachers' Own Socioeconomic Background: S me Contrary Evidence.
PUB DATE Apr 75
NOTE 21p.; Paper presented at the Annual Meeting of the American Educational Research Association (Washington, D.C., April 1975)

EDRS PRICE MF-$0.76 HC-$1.58 PLUS POSTAGE
DESCRIPTORS Bias; Classroom Integration; *Elementary Schools; Elementary School Students; *Flexible Progression; Measurement Techniques; Reading Ability; Research Methodology; *Social Discrimination; Socioeconomic Status; Student Evaluation; *Student Grouping; *Teacher Attitudes; Teacher Background
IDENTIFIERS New York

ABSTRACT

Several Methodological problems characterize the large number of studies of the relationship between students' socioeconomic background and their group or "track" placement in schools. Thus the degree of SES segregation resulting from instructional grouping in schools is unclear. One purpose of this study was to construct an alternative index to measure segregation directly, and to compare the results obtained under it with those obtained using a measure based on proportions. A second purpose was to examine the extent to which segregation was increased as a consequence of teacher judgments entering into grouping decisions. Also, an hypothesis relating teachers' own SES backgrounds to SES segregation was examined. Data on reading grouping were collected in 38 fourth, fifth and sixth grade classrooms in four school districts in central New York State. 114 reading groups based on a total of 914 students were included in the study. In an interviewing situation, teachers were asked to recommend to the following year's teacher an appropriate reading group placement for each of their students. Student scores on the comprehension portion of the Iowa Test of Basic Skills were collected, and a modified version of "The Home Index" was administered to each student to obtain an SES score. (Author/JM)

Session # 14.01

SOCIOECONOMIC SEGREGATION WITHIN ELEMENTARY SCHOOL CLASSROOMS AND TEACHERS' OWN SOCIOECONOMIC BACKGROUND: SOME CONTRARY EVIDENCE

by

Sharon A. Davis, Cornell University

and

Emil J. Haller, Cornell University

Paper presented at the Annual Meeting of the American Educational Research Association, April, 1975, Washington, D.C.

Socioeconomic Segregation Within Elementary School Classrooms and Teachers' Own Socioeconomic Background: Some Contrary Evidence

There have been a large number of studies of the relationship between students' socioeconomic background (SES) and their group or "track" placement in schools. On the basis of this research many have concluded that educational grouping or tracking practices result in substantial segregation of social classes within schools and classrooms. However, the majority of these studies have relied on either of two related methodological procedures, both of which raise serious problems when interpreted as measures of segregation. Specifically, many studies have demonstrated either that a statistically significant association exists between a trichotomized measure of individual student SES and his or her group placement; or, using proportions, they show that students in the upper or lower groups created by such a measure are over-represented in the corresponding instructional groups. These statistical relationships, in themselves, are not necessarily accurate measures of socioeconomic segregation, and, of course, do not constitute measures of social class segregation.*

In regard to the first of these procedures--chi-square tests applied to contingency tables--there are several reservations. First, and most obviously, these tests do not provide measures of SES segregation consequent on grouping practices. Segregation denotes a process by which a group is drawn from a larger population, which is heterogeneous on some attribute, in such a way

---

*We will not belabor the distinction between SES and social class. We do suspect that the distinction tends to get lost at least partly as a consequence of the procedure of installing arbitrary cut-off points on an SES scale and then naming the resulting "groups" with the nomenclature of social classes. That is, the top and bottom SES scorers become the "upper" (or "upper middle") and "lower" classes--appellations which would undoubtedly surprise many of these students and their parents.

as to separate those who possess the attribute from those who do not. That is to say, the group is made more homogeneous than the population from which it was drawn. This notion of homogeneity is central to the concept of segregation. Chi-square tests are tests of the independence of two attributes in the population, not measures of a group's homogeneity. Thus, studies which rely on these tests to conclude that educational grouping results in substantial socioeconomic segregation have placed an inappropriate interpretation on a significant chi-square. Further, the value of the coefficient itself is not necessarily reflective of the degree of segregation which might exist. That is, a high coefficient may be obtained under conditions of little segregation and a low coefficient under high segregation.*

In the case of the second procedure--comparing proportions-a related issue arises. When the attribute on which the segregation is said to occur is nominal--e.g., race or sex, an appropriate measure of the degree of segregation is a comparison based on proportions of the group and population who possess it. In this case proportions are equivalent to measures of homogeneity. A useful index in this situation is the one proposed by Farley and Taeuber.[1] However, when the attribute is not a nominal variable, but ordinal or interval (as in the case of SES), such proportions may be misleading because of the "loss of information" which results from categorizing the SES measure. Consider a simple and relevant example:

Suppose a classroom consists of nine students with measured respective SES scores from nine to one, and the teacher selects three of these students

---

*The same criticism may be levelled at analyses of variance in which SES scores are classified by instructional group and the resulting "significant" F is interpreted as evidence of significant segregation.

for advanced instruction in some subject. If he happens to choose the three pupils with the highest SES scores (9, 8 and 7), we would conclude that his decision had the effect of segregating pupils along SES lines. Under the usual procedure of trichotomizing the SES scale and computing a simple proportion, the segregation index for this group would be 1.0. However, if the group selected consisted of two students from the top SES category and one from a lower classification, the index would be .67 regardless of the SES score of the third student. This is equivalent to saying that a group made up of pupils with scores of 9, 8 and 1 is as segregated as one composed of pupils with scores of 9, 8 and 6. It is debatable whether the first case represents an instance of SES segregation at all. Despite this fault, however, this procedure is preferable to the first, since it does attempt to assess group homogeneity and is interpretable as a measure of segregation.

Given the weaknesses of these two common procedures, the degree of SES segregation resulting from instructional grouping in schools is unclear. One purpose of this study was to construct an alternative index to measure segregation directly, and in the process, to compare the results obtained under it with those obtained using a measure based on proportions.

A second purpose is derived from the first. It is well known that most commonly-used standardized tests measuring student achievement correlate with student SES.[2] It follows, therefore, that some degree of SES segregation would result were test scores to be used as the sole criterion in grouping decisions.[3] However, schools generally encourage teachers not to rely solely on tests, but to add their own judgment to the process of forming ability groups.[4] This may tend to result in an increased level of segregation. A study by Kariger found that ability grouping based on test performance alone would result in disproportionately large numbers of middle class children in high groups and disproportionately large numbers of lower class children in

low groups.[5] The addition of teacher judgment produced even greater disproportions, apparently the result of the teachers' social class stereotypes. Barker Lunn, who examined streaming in schools in Great Britain, also found that when teacher judgments were solicited in making the grouping decision, socioeconomic segregation was furthered beyond what could be expected if the children's test scores alone were the basis for placement.[6] However, these studies suffer from the defects noted earlier regarding segregation measures. Nevertheless, teachers' judgments of pupils tend to be related to pupils' SES. That is, teachers tend to perceive higher SES students as more talented and more likely to succeed than lower SES pupils.[7] In particular, Albro and Haller, Goold, and Davis found that, besides judged ability, some teachers used additional criteria in making grouping decisions (e.g., work habits, motivation, attendance) and that these criteria are related to pupils' SES.[8] Therefore, the more frequently these criteria are used, the greater should be the increase in segregation over that which would be obtained using test scores alone. Thus, a second purpose of this study was to examine the extent to which segregation was increased as a consequence of teacher judgments entering into grouping decisions.

Finally, we wished to examine one hypothesis concerning the causes of SES segregation in schools. If grouping and tracking practices result in some degree of socioeconomic segregation, and further, if some teachers increase the degree of this segregation over that which would result from the use of standardized tests, we asked whether or not the increase was related to the teachers' own SES backgrounds. That is, is it the case, as is sometimes argued,[9] that teachers from upper SES homes bring to the classroom, as adults, values and attitudes which cause them to discriminate among children on SES criteria?[10] If so, we would expect that a measure of teachers' own SES background would be related to the degree of SES segregation in their

classrooms.

METHODS

Data Sources. To examine socioeconomic segregation resulting from instructional grouping decisions, reading grouping in elementary schools was selected. This particular practice was chosen because it is widely used[11] and is known to be related to pupil SES.[12] Further, the locus of decision-making is clearer in this instance (i.e., the individual teacher) than in the case of high school tracking where counselors, administrators and parents are often involved. This quality was needed to test the hypothesized influence of the teachers' own SES. Data were collected in 38 fourth, fifth, and sixth grade classrooms in four school districts in central New York State. One hundred and fourteen reading groups based on a total of 914 students were included in the study.

In an interviewing situation, teachers were asked to recommend to the following year's teacher an appropriate reading group placement for each of their students--either a high, middle or low group. Student scores on the comprehension portion of the Iowa Test of Basic Skills were collected, and a modified version of Gough's instrument, The Home Index, was administered to each student to obtain an SES score.[13] Teachers were interviewed as they made their grouping recommendations and in the process data regarding their own background were collected, including their fathers' and mothers' occupational and educational levels. Parental education was coded on a 5 point scale and parental occupations were coded using the Duncan socioeconomic index.

Procedures. Using the data collected, two additional hypothetical groupings of pupils within each classroom were established. On the first, an SES grouping, students were ranked according to their scores on the Gough SES scale. Cuts were made on this ranking which corresponded to the size of the reading

groups which the teacher had established. That is, if a teacher had formed three reading groups of 8, 10 and 7 pupils (high, middle, and low respectively), the SES ranking was cut at the same points, so that the top 8 SES students formed one group, the next ten a second, etc This produced high, middle and low SES groups. A second grouping, based on test scores, was established by ranking students according to their scores on the Iowa Test, and making similar cuts.

Next, the first index designed to measure segregation was constructed. This measure (Index 1) was simply an average of the proportions of children in each teacher's top and bottom reading groups who were also in the top and bottom SES groups respectively. These two reading groups were chosen to index the degree of segregation in the classroom because they are assumed to be the ones which would be most segregated. (Mehl, who examined the assumption with students in grades five through eight, found that these groups contained an over-representation of upper and lower SES students respectively, while the middle group had all SES represented proportionately.[14]) Before summing, .33 was subtracted from each proportion since that is the proportion of any SES group which could be expected in the equivalent reading group if assignments were made randomly. Thus, a 0 on the index would indicate no segregation in the classroom, and .67 perfect segregation. A second and identical index was constructed using the hypothetical groups which would result if test scores alone were used as a grouping criterion, and indicates the degree of segregation which would result from the use of tests alone. When multiplied by 100, both of these indices are interpretable as the percentage of students who would have to be moved from their assigned reading groups to make the distribution of upper and lower SES children conform to a random one---i.e., to desegregate the classroom. This index represents the commonly used proportional measure of segregation discussed above, and has its major shortcoming--i.e., its

value is dependent entirely on the number of students in the diagonal cells, and it is insensitive to the variation in the SES scores of students in those cells.

Finally, a second index of segregation in each classroom was constructed which was intended to directly measure changes in the degree of homogeneity in SES resulting from grouping decisions. This measure utilized the standard deviation of the SES scores in reading groups and that of the entire class. That is, we reasoned that if teacher assignments were made randomly, each reading group should evidence approxi ely the same standard deviation in SES as the class as a whole. To the extent that a group's standard deviation was smaller than that of the class, segregation was occurring. Accordingly, this index (Index 2) was constructed by dividing the standard deviation of SES scores in a reading group by that of the class and subtracting the result from 1. This measure is commonly termed eta. Th two measures thus obtained for the top and the bottom groups were averaged. As with the previous index, a similar measure was determined for the hypothetical groups based on test scores. When multiplied by 100, these indices are interpretable as the percentage reduction in the classroom SES variance which results from teachers' decisions, or which would result from the use of the Iowa Tests to form reading groups.

RESULTS

Our first research problem was to determine the extent to which our two indices of segregation were measuring the same thing. We approached the question by computing a Pearson correlation between them. This correlation was .35, indicating relatively little overlap. We also calculated a rank-order correlation, which was .40. While we expected the two indices to differ, we were surprised that they differed quite so much. In order to examine these

differences more closely, we divided each scale into deciles and arrayed each classroom in the resulting 10 X 10 matrix. It was immediately apparent that classrooms tended to rank lower on the second index than the first. That is, the variance measure tended to show a lesser degree of segregation in a classroom than did the proportional one. We next divided both scales at their means and placed them in a 2 X 2 table. Twenty-eight cases fell into the diagonal cells, with 5 in each of the off-diagonals. We selected these off-diagonal "deviant" classrooms for closer scrutiny.

In the first set of 5 (i.e., those high on the proportional measure and low on the variance one), the reason for the discrepancy was as we had expected, and which we mentioned at the beginning of the paper. In each of these classrooms the teacher had placed one or two children with very low SES scores in the top reading group and/or the reverse. The fact that the variance measure had picked up this information was support for our argument concerning its advantages. This also explains the tendency for classrooms to score relatively lower on the variance index.

An analysis of the second set of deviant cases, however, revealed a basic problem with Index 2. These were the cases which registered high on the variance index and low on the other. In examining these, we found that the teachers had formed the top reading groups almost entirely from lower or middle SES students (or the reverse in the case of the lower group). Thus, she or he had substantially reduced the group-to-class ratio of standard deviations, but could be said to have "segregated" the class only if one is willing to say, in the hypothetical extreme case, for example, that a high reading group made up entirely of low SES pupils is segregated. In a sense, the current debate over "reverse discrimination" had turned up as a measurement problem in our sample.

We are currently in the process of testing an alternative measure to

Index 2. Time constraints, however, prevented us from reporting our results here, though preliminary analyses do not differ significantly from those reported below. Essentially, the solution to this problem requires that the variance in the group or class SES scores be computed from some arbitrary point at least as high (or as low) as the extreme values in the class's SES distribution, not from their own mean. This procedure "anchors" the measure for a particular group. Thus, an appropriate measure of segregation now seems to us to be

$$1 - \left(\frac{Vg}{Vc}\right), \text{ where}$$

Vg = the variance of a reading group's scores from X, where X $\geqslant$ the highest SES score in the class
Vc = the variance of SES scores of the entire class from X.

In the case of a low reading group, X $\leqslant$ the lowest SES score. This measure would discriminate the cases of "reverse segregation" from the more common variety. Random assignment to groups would generate a value of zero, and the extreme of segregation (i.e., all children in a group with the same high or low SES scores) would register 1. As with our Index 2, this is interpretable as a proportional reduction in variance. Further, this measure appears applicable to any situation in which segregation on an ordinal or interval characteristic is to be measured.

The reader should be aware, in the following analyses, that because of our problem with Index 2, we have five deviant classrooms in our sample which evidence a degree of segregation of this reverse type. This has the effect of slightly increasing the mean on Index 2, and slightly increasing the measured difference between the segregation effected by a teacher and that effected by tests. The presence of these cases has no substantive effect on our conclusions regarding the effect of a teacher's own SES on his classroom segregation.

The first substantive problem was to determine the extent to which teacher-formed reading groups resulted in socioeconomic segregation within those classrooms. Figure 1 shows the percentage distribution of Index 1 (Proportions). This index ranged from -.25 to .55, indicating a considerable variation in the degree of segregation within the sample. Four classrooms (10.5%) had scores below 0--i.e., had upper and/or lower reading groups with fewer than the expected number of children from the equivalent SES groups. Three additional rooms registered 0. The mean of .226 indicates that, overall, approximately 23% of the children in these groups would have to be moved from their assigned groups to bring those groups to the expected proportion of .33. A test of the hypothesis that the mean of the proportions is 0 was rejected at the .05 level. We conclude that grouping does result in a degree of segregation.

Figure 2 illustrates the results obtained when the segregation index based on the standard deviation is used. In this instance, 6 teachers (15.8%) had increased rather than decreased the relative SES heterogeneity of their upper and lower groups over that which would have obtained had they assigned students randomly. Two additional classrooms had scores of 0. Thus, in all, 21% of these classrooms had no evidence of segregation. On the other hand, the highest index value was .61, indicating a substantial (61%) degree of segregation. The mean of .156 indicates that, on the average, reading grouping resulted in about a 16% reduction in the SES variance of the groups relative to that of the class. As before, a test of the hypothesis that the population mean is zero was rejected at the .05 level.

Question 2 concerned the degree to which teacher judgment in grouping decisions increased segregation over and above that which would obtain from the use of standardized tests alone. Table I addresses the question by comparing the mean segregation indices which result from teacher decisions to

those which would result if test scores alone were the criterion for group placement. Using Index 1, the difference between these two measures indicates that, on the average, teacher judgment increases SES segregation in reading groups .031 or about 16% over tests. Similarly, using Index 2, the average reduction in SES variance associated teacher judgment was .061 or about 64% over tests. While the absolute mean increase in segregation resulting from teacher judgment was slight using either measure, the percentage increase was considerable, particularly with Index 2. Since Index 2 is more sensitive to the variation of SES scores in a group, it picks up more information than Index 1 which ignores within group variance. Comparing the segregation resulting from the two indices on an absolute basis showed little difference. When Index 1 was used, teacher judgment had the overall effect of desegregating groups in 13 classrooms (34.2%), increasing segregation in 23 classrooms (60.5%) and showing no change in 2 classrooms (5.3%). The equivalent classroom figures for Index 2 were 13, 24 and 1, respectively.

Even though teacher judgment had little overall absolute effect in increasing segregation over that which would result from tests, there was a considerable variation in the difference scores from classroom to classroom. Some teachers decreased segregation in their classrooms over that which would have occurred under grouping by standardized tests, while others increased segregation when allocating students to reading groups. The use of Index 2 tended to show greater percentage increases in classrooms than measured by Index 1. In an effort to explain this variance, regression analysis was used to determine whether or not the social class background of the teachers themselves affected the degree to which their classrooms were segregated (question 3). Table 2 presents the results of these regressions.

Table 2 indicates that none of the teacher background variables account for a significant amount of variance in the segregation indices. This finding

also held when years of teaching experience was held constant and when the regressions were run without first subtracting out the test segregation indices.

DISCUSSION

Several limitations to this research need to be mentioned before the discussion of conclusions. One is that intraclass reading grouping probably doesn't represent the degree of segregation which would result from high school tracking or from interclass ability grouping in the elementary school. Previous research examining socioeconomic segregation of ability grouping has most often been done using interclass groups and tracks. Other limiting factors are the small size of the sample and its lack of generalizability because it is a convenience sample. We also do not know how heterogeneous on SES these classrooms are compared to other classrooms.

There are several points we would make in concluding. First, it seems clear that reading grouping (and probably most other forms of ability grouping at other levels of schooling) does result in some degree of socioeconomic segregation among pupils. However, this study does not support those who assert that such practices effectively segregate students along SES lines. The results obtained with Index 1 indicated that, on the average, about 23% of the students in the upper and lower groups would need to be moved in order to "balance" those groups in terms of SES. Similarly, the second index showed that grouping resulted in a 16% reduction in the variance of SES scores. These figures are certainly not negligible. Neither, however, do they depict anything like a completely "biased" instructional practice. Disaggregating the upper and lower groups illustrates this point in another way. There were 76 reading groups involved in this study. In only two (2.6%) did teacher-formed groups correspond to the equivalent SES groups.

Second, classroom segregation can be mainly explained by the use of students' reading test scores as the only grouping criterion. When teacher judgment was added to the grouping process, the overall absolute increase in segregation was slight. This lends credence to earlier studies[15] which found that the most important criterion used by teachers in making allocation decisions is perceived achievement. The mean levels of segregation for groups formed on the basis of the Iowa Test were .195 and .095 — that is, a 20% overrepresentation of individuals in the equivalent SES groups and a 10% reduction in variance. In only one instance would grouping by tests have resulted in an exact correspondence of reading and SES groups. However, Index 1 and Index 2 revealed differences when the percentage increase in segregation of teacher over test was examined. The second index showed a considerably greater percentage increase (64% as compared to 16%), partially because it measures the segregation or desegregation occurring when teachers move higher status children up or lower status children down. Teachers who form a top group mainly of lower SES students have probably reduced group variance which will be measured as an increase in segregation by Index 2. It is questionable whether or not the occurrence of "reverse discrimination" should be measured as contributing to classroom segregation.

Third, the failure of the SES background variables to predict classroom segregation came as no surprise. As Charters[16] pointed out years ago, the chain of reasoning which leads from the childhood experiences of teachers to their behavior as adults in the classroom is a long and extremely tenuous one. Despite his warning, however, the belief persists in some quarters, and we could find no study in which it was directly tested. The failure of the hypothesis seems to us to lend support to the notion that the values and attitudes which come into play in pupil allocation decisions are not so much rooted in

social class as in educational constraints and imperatives. That is, the other criteria which teachers use in grouping pupils (besides achievement) may well be related to the SES of children--e.g., good work habits, lack of physical aggressiveness, daydreaming, etc.--but these criteria are important not because of a teacher's past or present class background, but because they are relevant to his daily work.

The fact that teachers' decisions did result in a slight absolute increase in classroom segregation also supports the argument made elsewhere[17] which suggests that when allocating pupils to instructional groups the primary criterion is perceived achievement--in this case, in reading. Other criteria, however, may come into play when differences in perceived achievement are slight or non-existent. Grouping students for reading requires the teacher to make achievement distinctions among pupils at the margins of groups where reliable distinctions may be impossible. In those fewer cases, such SES-related criteria as aggressiveness may come subtlely into play, which tilt the balance in such a way as to place the lower SES student into the lower of the two groups under consideration. Such a process could account for the small increases of teacher segregation over that of tests which we found.

Finally, we would suggest that some measure of segregation based on the variance of SES scores available in a classroom or school be used by researchers in this area. The inadequacies of contingency tables and simple proportions for this purpose, pointed out at the beginning of this paper, will stand in the way of our understanding the causes and consequences of socioeconomic segregation in schools.

FIGURE 1

PERCENTAGE DISTRIBUTION OF CLASSROOMS ON INDEX i

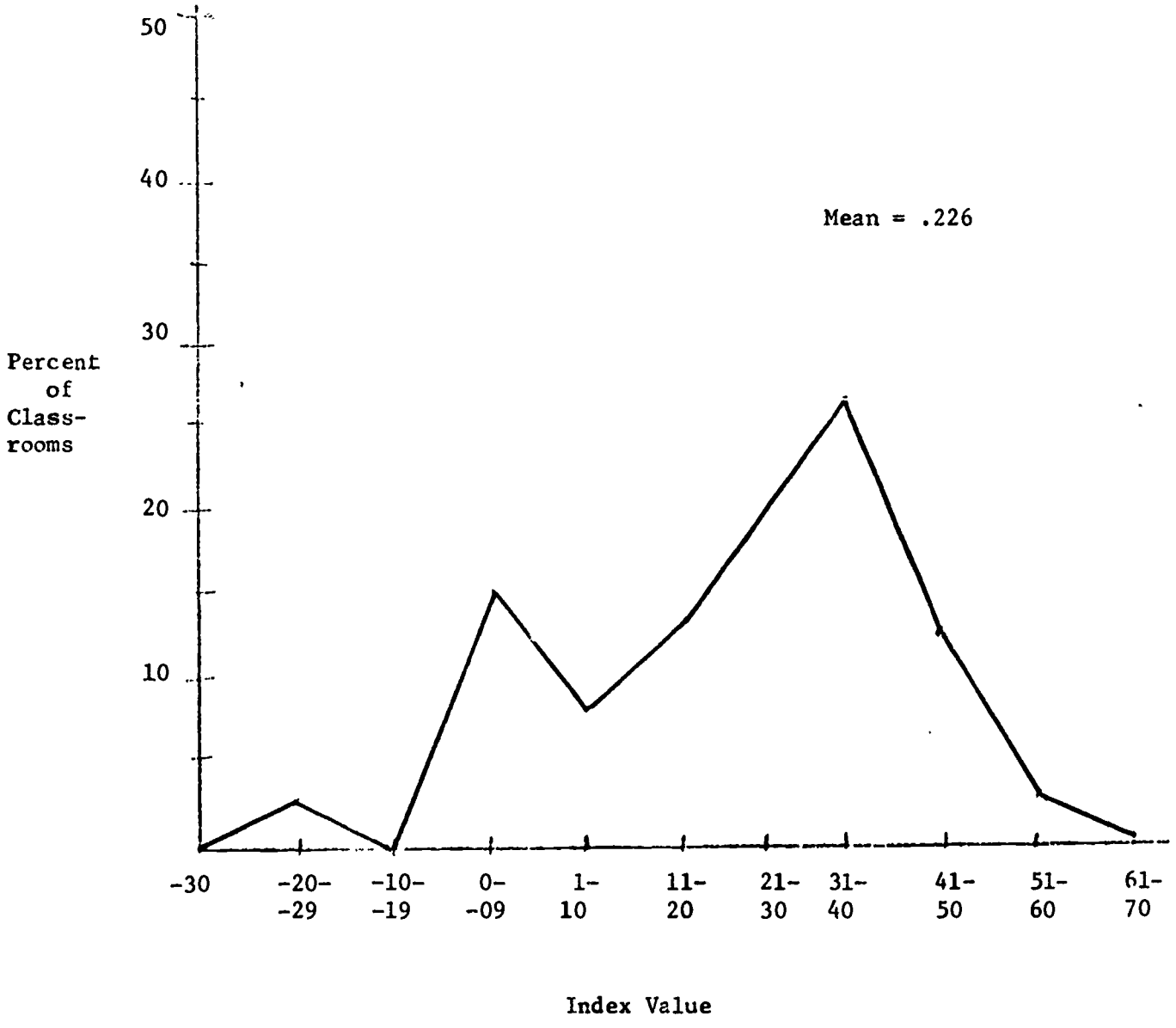

FIGURE 1

PERCENTAGE DISTRIBUTION OF CLASSROOMS ON INDEX 2

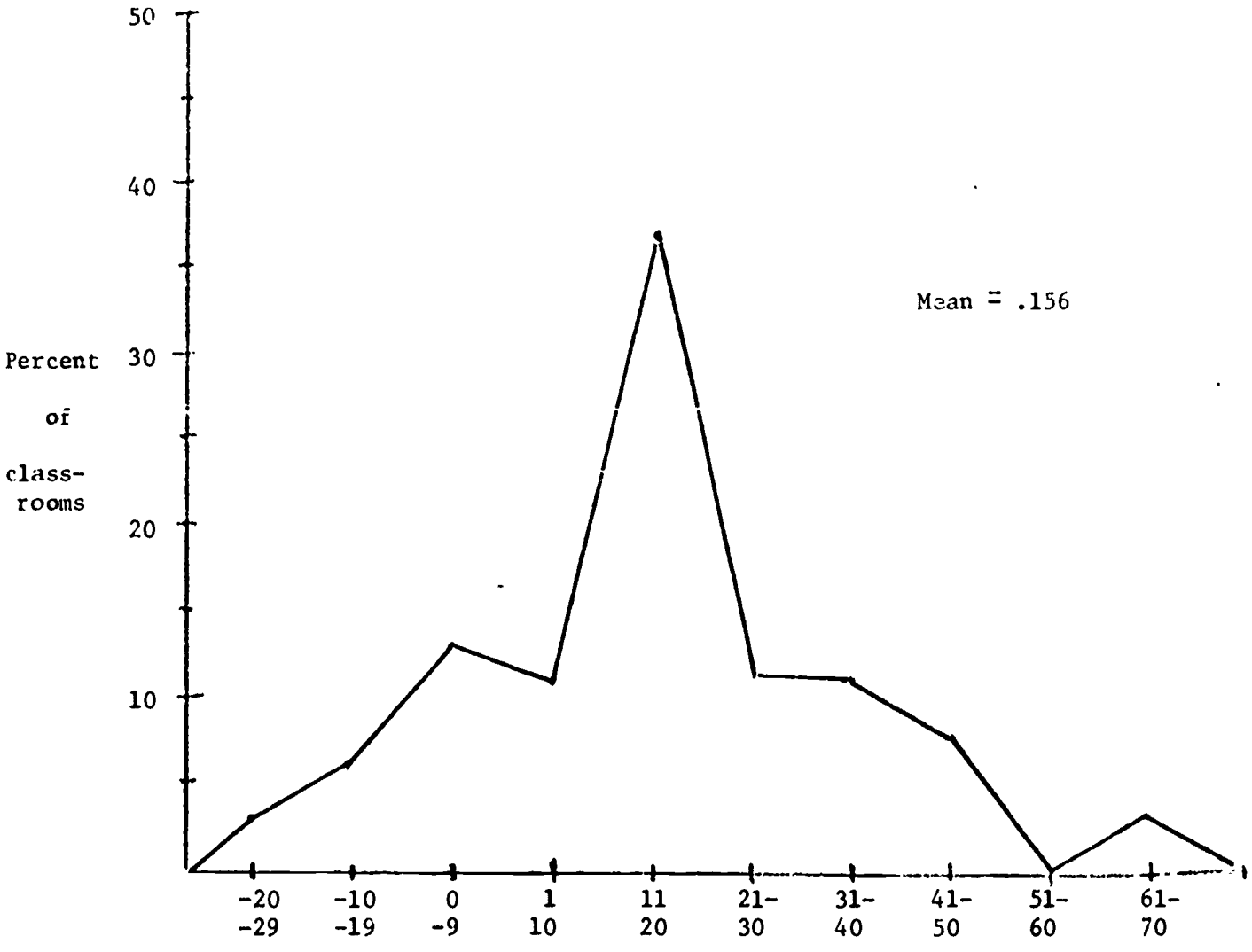

TABLE I

Comparison of Teacher and Test Mean Segregation Indices

	Teacher Mean	Test Mean	Difference
Index 1 (Proportions)	.226	.195	.031
Index 2 (S.D.)	.156	.095	.061

TABLE 2

Regressions of Segregation Indices on Teacher Background Variables

		Standardized Regression Weights	
		Index 1: Teacher-Test Segregation	Index 2: Teacher-Test Segregation
Background Variable			
Father's Occupation		.27903	-.20718
Father's Education		-.20592	-.05934
Mother's Education		.27525	-.07243
DF = 3/ 34	R^2	.11734	.07098
	F	1.50671 (ns)	.86587

References

[1]R. Farley and A. Taeuber, "Racial Segregation in the Public Schools." American Journal of Sociology 79 (January, 1974), 888-905.

[2]David E. Lavin, The Prediction of Academic Performance. New York: Russell Sage, 1965.

[3]Warren G. Findley and Miriam M. Bryan, Ability Grouping 1970: Status, Impact, and Alternatives. Athens, Georgia: Center for Educational Improvement, 1971.

[4]Ibid.

[5]R.H. Kariger , "The Relationship of Lane Grouping to the Socioeconomic Status of the Parents of Seventh-Grade Pupils in Three Junior High Schools." Unpublished Dissertation,Michigan State University, 1962.

[6]Joan C. Barker Lunn, Streaming in the Primary School. London: National Foundation for Educational Research in England and Wales, 1970.

[7]W.E. Schaefer and C. Olexa, Tracking and Opportunity. Scranton: Chandler, 1970. E.J. Goodacre, Teachers and Their Pupils' Home Background. London: National Foundation for Educational Research in England and Wales, 1968.

[8]H. Albro and E. Haller, "Teachers' Perceptions and Their Tracking Decisions," Administrator's Notebook 20, 7, (March, 1972), 1-4.
D. Goold, "Criteria Related to Pupils' Allocations to Reading Groups." Unpublished M.A. Thesis, Cornell University, 1973. S. Davis, "Students' SES as Related to Teachers' Perceptions and Ability Grouping Decisions." Research in Education 9, 9 (September, 1974).

[9]See Schaefer and Olexa, op. cit., for such an argument.

[10]See W.W. Charters, Jr., "The Social Background of Teaching" in N.L. Gage (ed.), Handbook of Research on Teaching. Chicago: Rand McNally, 1963, for an incisive critique of this argument.

[11]M.C. Austin and C. Morrison, The First R. New York: McMillan, 1963.

[12]Davis, S. op. cit.

[13]H. Gough, "A Short Social Status Inventory." Journal of Educational Psychology 40 (1949), 52-56. See Davis, op. cit. for a discussion of the reliability and validity of this instrument.

[14]R.F. Mehl, Jr., "A Study of the Relationship Between Homogeneous Grouping in the School and the Social Class Structure in an Up-State New York Community." Unpublished Dissertation. State University of New York at Albany, 1965.

[15]Albro and Haller, op. cit. Goold, op. cit. Davis, op. cit.

[16]Charters, op. cit.

[17]Albro and Haller, op. cit. Davis, op. cit.