A CORRELATION OF SOCIOECONOMIC GROUP AND ACADEMIC PERFORMANCE

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The purpose of this study was to identify a culturally deprived Vancouver Elementary School population through a correlation of socioeconomic group and academic performance. Two assumptions were made in this paper: one was that intelligence is not a fixed entity, predetermined at birth; the second was that unequal treatment is justified if we aspire to equality of opportunity.

To show a relationship between socioeconomic group and academic performance, the school population had to be ranked on a socioeconomic scale and an academic scale. Since a lower-class group was of most interest, districts were scored on their proximity to description of lower class. The criteria of a low socioeconomic group was low income, high percentage of laborers and low educational attainments. These factors were considered significant in Warner's book on stratification, Social Class in America. The figures for these factors were taken from the Dominion Bureau of Statistics census figures. The school performance was ranked according to scores on the Stanford Achievement Tests.

The correlation between the paired ranks of the socioeconomic class the school served and school performance was made using Spearman's Rank Correlation Coefficient. The resulting correlation was .77. Generally lower-class district schools received the lowest test scores, while the higher socioeconomic districts received the highest test scores.

Two questionnaires were developed, one for principals and one for special counsellors, to see if equipment and services were given
equally to all schools, irrespective of the socioeconomic district the school served. The results showed a very slight advantage for the poorer schools in terms of special classes; audio-visual equipment, counsellor services, and hot lunch provision. This partial response to certain of the educational problems of the lower socioeconomic districts could be broadened. It would seem that the results of this study would warrant an investigation of the possibility of setting up an organized program for the culturally deprived in Vancouver.
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A CORRELATION OF SOCIOECONOMIC GROUP AND ACADEMIC PERFORMANCE CHAPTER I

THE PROBLEM

## Background

Our society generally supports the ideal of equality of services and opportunities for its members. But the problem that absorbs so much of our thinking is whether society should be working towards the equality of means towards a comon goal or should be concentrating on seeing that the goal, happiness and prosperity for example, is equally shared as far as it is possible. The latter would require an inequality of means. To educators this dilemma is not a philosophical brain teaser but a problem of immediate concern. The provision of equal educational facilities for all, no matter how excellent, does not produce equally educated people. Differences in natural endowment, environment, and good fortune cause some children to come to school unprepared and unable to use the proffered facilities. School time and money plus prime learning years of children are wasted. Some would call this unjust and most would call it unproductive. Whether in response to the waste or the injustice, or simply to disruption in the classroom, special educational programs giving extra and compensatory services are seeking to find out if disadvantaged children can more closely approximate the
average distribution of academic success and thus move towards equality of opportunities in reaching a common goal.

## Problem

The evidence of Teacher reports and validated research shows that children of poor neighborhoods and impoverished home environments do more poorly in school than children of better neighborhoods and home environments (Abrahamson, 1952; Eells et al., 1951). Recent research also indicates that hereditary or organic defects cannot wholly account for these failures (Freeman et al., 1958). The idea that such a strong relationship between socioeconomic group and academic performance is not always inevitable is given encouragement when one notes the increase in academic achievements among the culturally deprived children in special programs (Lopez, 1965; Keppel et al., 1964; Shepard, 1962).

Unsatisfactory academic performance of children in poor areas is a problem not unknown to Vancouver teachers. Many feel they can predict the academic performance of a class from a general knowledge of the school district in which it is located. It is the problem of this paper to see if by statistical evaluation a relationship between socioeconomic group and academic performance can be found in Vancouver.

Definition of Terms

Gulturally deprived. While lower socioeconomic groups lack many of the advantages (and disadvantages) of the middle-class culture, it is not really appropriate to describe them as culturally deprived. They
possess a culture of their own with a difficult environment. However, because it is a term in current usage, culturally deprived will be used to refer to those members of lower socioeconomic groups who have not benefited from some aspect of middle-class culture such as education, books and formal language (after a definition by Riessman, 1952, p.3).

Culturally disadvantaged. This term and also disaffected, culturally handicapped, educationally deprived and underprivileged are used alternatively with culturally deprived in the literature. Because of the multiplicity of terms, each with its own variant meaning, only the socioeconomic term lower socioeconomic group and the term culturally deprived will be used.

Socioeconomic. This term is used widely and loosely in this paper. It is a word which denotes the interdependence and integration of social position with economic position. In this paper, a high socioeconomic group is measured by its distance from a low socioeconomic group. The latter is measured by low income and low status job and a deprivation of education to improve either.

Special services and/or compensatory services. These are terms used to designate any additional facilities, equipment, materials or professional help, either not normally given or not given to the needed degree and which are within the school's province to provide or procure in order to improve learning.

## Assumptions

Two assumptions are essential if the rationale of this paper is to be meaningful. One is that intelligence is not a fixed entity,
predetermined at birth. The second is that unequal treatment is justified if we aspire to equality of opportunity.

The notion of fixed intelligence has roots in Darwin's theories and has led to the belief that man's improvement lies not in education but eugenics (Hunt, 1964, p.83). Terman's study of fixed intelligence quotient and Gesell's discovery of a predetermined behavior pattern with which one should not interfere have also been interpreted as evidence on the side of heredity in the environment versus heredity controversy. However, recent studies show that I.Q. measurement itself is not as objective an instrument as popularly supposed. Practice sessions for children previously unfamiliar with tests and testers have resulted in higher I.Q. scores (Haggard, 1954). The notion of fixed intelligence is also challenged when the I.Q. of children regresses when unaided in a deprived environment (Goldberg, 1963, p.82; Landers, 1963, p.23). It has been found that the more underprivileged child is hardly at any disadvantage on picture, geometric design and stylized drawing items, but does more poorly on verbal tests. The authors believe,
. . . the lack of opportunity for familiarity with specific cultural words, objects or processes required for answering the (latter) items as the most adequate general explanation for most of the findings (Eells, et al., 1951, p.68).

Clarke shows the interdependence of heredity and environment.
. . . the basic resources of the central nervous system, hereditarily determined, allow a range of possibilities of development, depending upon the individual's interaction with his environment, which in turn may modify the qualities of the nervous system by what can broadly be termed 'learning'. At one time this range was thought to be narrow, but modern research has increasingly indicated a broader spectrum of possibilities. It seems likely that subcultural defectives


#### Abstract

function near the lower end of their potential while they are exposed to adverse environments, but that if removed from them sufficiently early before psychological damage becomes irreversible, a considerable change can take place (Clarke, 1958, pp.133-34).


In summary, many studies of the developments in neurophysiology and genetics have found no general answer to the questions concerning the proportion of variance in intelligence attributable to heredity and to environment (Hunt, 1961, p.361). Therefore it is assumed in this paper that intelligence is not a predetermined and fixed quantity.

That unequal treatment is justified is an assumption of this paper. Canada is demanding highly skilled workers, but in the present system many of the lower-class children will remain unskilled, later to become a burden as the technologically unemployable. Social services and adult education programs at this later time are burdened with years of accumulated failures, suspicions and established behavior patterns, which interfere with change. However, starting at the preschool level, compensatory programs using special motivation devices and extensive remedial services that are generally not given to the whole student population could be successful in keeping these children in school in order to become better trained and educated.

But disregarding the sound economics of such "inequality," some educators fear that such extra and compensatory services violate the principle of equality. A certain class of students would receive more than another. However, the logic of providing these additional services is the same logic that provides special services for children deprived of certain sense experiences or motor abilities. The blind, deaf, and
neurologically impaired are given special books, equipment and personnel enabling them to complete their studies more successfully. Both types of exceptionality need some educational experiences that are different from those of normal children to make up for deprivations in order that their chances of self-fulfillment will be improved. That children of impoverished environments should receive extra or different services according to their particular learning needs is assumed to be compatible with our ideal of educational equality.

If a relationship is found between socioeconomic group and academic performance in Vancouver, the question of compensatory services naturally raises itself. The Vancouver school board has shown, by its provision for special services to the blind, deaf and so forth, assent to the idea of unequal educational services.

## CHAPTER II

SURVEY OF THE LITERATURE

Social Class Measurement

Warner's book, Social Class in America (1949) was the principal source for general social class information. The purpose of this book was to research and define an objective method of identifying various social classes within a community. The book described two methods. The first one was called "Evaluated Participation" and made use of the interview technique to enable the investigator to place individuals in a social scale by using conments of other members of society. The investigator "translates the criteria and judgements of the informants (townspeople) into explicit, verifiable results which will correspond with the class realities of the community" (Warner, p.38). The second method was the "Index of Status Characteristics." Using information from the first method, Warner chose certain items that correlate highly with class. These were: occupation, source of income, house type and dwelling area. Each of these were weighted, occupation being weighted most heavily. These class indicators were broken down into types that would identify a certain class. The type rating times the weight would equal a number that would correspond to a total social class rank. However, only the descriptions of what was indicative of lower class were used in the present study.
W. S. Landecker's study also chose income, occupation and education as factors indicative of class (1963). He assigned to each a percentile rank and gave their totals in standard deviation form.

Sabragh et al. (1959) used census figures to compare districts on a socioeconomic level. They used statistics under occupation, years of schooling and ethnic group. They converted figures into percentages in order to determine, in broad outline, what a neighborhood was like.

While many people describe and identify the lower class, few people have tried to identify culturally deprived children statistically. However, James L. Olson and Richard Larson (1963) have devised such a scale. The scale necessitates giving eighteen tests in areas of language development, self-concept, social skills and cultural differences. These four areas were suggested by a thorough study of the literature. Those children scoring one standard deviation unit below the mean were considered culturally deprived.

Bearing of Social Class on Scholastic Achievement

Educators are aware that there are learning differences traceable to different class backgrounds. Two studies evolving from one project are landmarks in this area. They are Social-Class Influences upon Learning (Davis, 1948) and Intelligence and Cultural Differences (Eells et al., 1951). The first found a difference in motivation and learned behavior between lower classes and middle classes. The author discussed the implications of these differences in regard to school performance. The second study dealt specifically with the I.Q. test. The authors found
verbal items to be more related to socioeconomic class than are nonverbal items. Cultural factors rather than intelligence explained in part the difference between the mean I.Q.'s of upper and lower classes (Warner's Index of Status Characteristics was the instrument for socioeconomic evaluation).

Ernest Haggard (1954) found that three hours of special practice given to lower socioeconomic groups in understanding the types of problems found in intelligence tests produced significant improvements in test results. Rewards also improved the scores of these children, again raising the question of the extent to which cultural factors affect test scores.

Projects

A review of projects for the culturally deprived will serve several purposes. First, the number of projects reflects the significance many school boards are giving to the problem of educating the lower-class child. Second, the variety of projects shows the complexity of the problem. Third, the many degrees of success and failure point out the difficulty of the problem. Another purpose in citing the projects of different school administrations is to find direction for a possible program in Vancouver.

One of the first programs for the culturally deprived was the Demonstration Guidance Project. Started in 1959, this pilot program aimed at "reversing the process of apparent deterioration in ability and achievement among minority group children and the subsequent limitation
of educational opportunity" (Hillson, 1963, p.V). Their efforts included expanded guidance and counseling staffs, special instructional and remedial services, broader cultural experiences, increased contact with parents, and clinical and financial assistance. There was ample evidence in the project that the effect of an underprivileged environment was stronger than the possession of a high I.Q. or reading score. The increased academic success for pupils in this program was significant. For example, one hundred and eight academic diplomas were earned where only forty-three had been earned before by a comparable group.

With the results from the Demonstration Guidance Project a larger program called Higher Horizons evolved (Landers, 1963). The differences between the two programs were not decided arbitrarily and are instructive. Higher Horizons starts earlier, in grade three, and includes all abilities not just the bright. It is more decentralized than the former and also offers a wider field of choice for the disadvantaged rather than just the academic goals as in the Demonstration Guidance Project. However, optimum conditions of enough money and staff available to the Demonstration Guidance Project were not available to the larger project, Higher Horizons. For these reasons and others attributable only to the complexity of the educational problem involved, the Higher Horizons project, at the time of evaluation in 1964, was only partially successful (Wrightstone et al., 1964). There was little real academic improvement attributable to the special program and only class behavior and attendance showed significant gains. The lack of apparent improvement may also
have been partially attributable to the fact that control schools were also favored with special services from another program and that these schools were not as poor in socioeconomic terms.

The Great Cities Project started in 1957 tried to improve selection and utilization of personnel and instructional equipment within a school program and adapt these to the needs of deprived children. Involvement of parents and community in the educational program was also considered essential. Each program was slightly different, fitting the problem as the city saw it. The results of this project which involves fourteen major cities are being evaluated and although more time is needed, they prove entirely encouraging to pupils, teachers and community (Conant, 1961; Marburger, 1963; Spears, 1963).

The Banneker Group Schools of St. Louis have received considerable praise. Sometimes called "Operation Motivation," the program's aim was to convince teachers, parents, students and community that higher achievement was possible and necessary (Shepard, 1962). The communities were saturated with parent meetings, radio discussions, contests, games, and rallies. The results were encouraging. For instance, the median grade scores in grade eight went up over a year in comparison to grade medians of similar classes before the introduction of the program.

One kindergarten program, gigantic in its reach, is Operation Headstart. Part of the War on Poverty Campaign, this program gives over 100,000 four- and five-year-olds eight weeks of preschool education. It also puts toys and art materials into slum homes. Though early results give cause for optimism, the program has not been evaluated fully as yet.

Edmund W. Gordon, Director of Research and Evaluation was quoted as saying, "There appears to be little correlation between high pupil gain and any particular emphasis" (Mosses, 1966). He also said that flexible rather than highly structured programs seem to produce the best results. Baltimore, Maryland is giving its underprivileged children prekindergarten classes. In evaluating, they find more children are being enrolled in kindergarten than previously and, more important, the preschool project children are in higher percentiles in Grade One than children from the same area who did not participate in the program (Keppel, 1964).

The state of California has agreed to pay up to twenty-five dollars for each pupil participating in a program for the culturally deprived (Lopez, 1965). A wide variety of programs has been designed to demonstrate the close relationship between school and life, provide remedial services and arouse aspirations for constructive goals. A wide range of possible changes has allowed twenty-four schools taking part to adjust to their own particular problems. Various districts report successes such as one year's progress in reading accomplished in six months, increase in Mental Age of ten months in six months and rapid growth in an oral language program.

The All Day Neighborhood School Program for the Culturally Deprived has now been evaluated (Sexton et al., 1965). This program put an additional seven teachers in each project school. The teachers were to help the regular teacher to enrich and individualize her teaching. The extra teachers also conducted after school programs. The only apparent
difference in the project children was their increased ability to work alone or in groups, to speak more fluently and to write more original essays. There was no improvement over a control group on any paper and pencil type test.

The number of programs for the culturally deprived is increasing rapidly. Unfortunately the evaluation of such programs is often subjective, incomplete or nonexistent. Enthusiasm of the staff and the cooperation of administrators frequently seem to determine the success of a program. These ingredients are hard to duplicate or insure.

The interest in disadvantaged groups is steadily rising. Besides new programs; even new teachers are being demanded (Frazer, 1961; Ravitz, 1963). College educators like those at Hunter College (Haubrich, 1963) or associates of the Bridge Project (Kornberg, 1963) consider the deprived child different enough to warrant a specialized teacher. General

At the present time the comprehensive study in the field is The Culturally Deprived Child (Riessman, 1962). He organizes and reviews his own and other research on the intelligence, personality, environment and educational problems of the culturally deprived. Riessman's chief aims are to increase the teacher's respect for the disadvantaged child and to encourage the belief that the child can make normal achievement under proper school circumstances. Riessman emphasizes that the lower-class child's orientation is physical rather than verbal. This characteristic is a major handicapping factor in most school pursuits. He also warns
against expecting or enforcing middle-class values in a classroom of lower-class children. Riessman challenges the assumption that the lowerclass environment is nonstimulating. He argues that the problem experiences offered by the impoverished environment are just not the kind built upon in school. Riessman recommends the search for the "hidden I.Q." This potential evolves more slowly than the middle-class child's, yet can be fulfilled as productively.

Martin Deutsch's work with nursery schools reiterates Riessman's ideas that the lower-class children's experiences are not the kind required at school (1963). Further, he states that kindergarten must be the bridge between the two environments, home and school. The nursery school is important to the culturally deprived child because it can provide auditory, visual and speech training besides giving encouragement for further school work.

In Slums and Suburbs, Conant does not agree with the optimistic picture of Deutsch and Riessman. He is aware of the cultural differences that exist among classes but can see no remedial program comprehensive enough to deal with them (1961). Instead he believes that a school is limited by the status and ambitions of the families being served. Conant looks to the high school for adequate guidance and training as an answer, at least in part, to the culturally deprived.

Irrespective of the argument for or against special programs, Patricia Sexton in her book, Income and Education, points out that lowerclass children are getting fewer services even in an all equal school program (1961). She analyzes public education according to the class
receiving it, and although her study concerns one geographic area, the general indictment is pertinent to any urban area. Quality of teachers, school building and facilities were found to be decidedly in favor of the classes above the lower class.

There can be no question that class has a bearing on educational
achievment. What can be done about this? Before a school district attempts to propose an answer to this question, it must first satisfy itself that the educational problem exists to a significant extent within its own boundaries.

METHOD OF DEALING WITH THE PROBLEM

Almost anyone in Vancouver can point out a poor district and find children within the district doing poorly in school work. But this subjective method of identification and correlation is not sound. A person's familiarity with one district more than another, a small concentration of poorly kept or well kept homes, prejudices about one particular characteristic of poverty would possibly make such a method of identification unreliable. Before the need for a program can be demonstrated, an objective basis for gauging that need must be found. If a significant statistical correlation between socioeconomic group and academic performance were found in Vancouver, the need for compensatory services might warrant investigation.

To find how significant the relationship between socioeconomic group and academic performance is in Vancouver, a correlation between the two factors must be made. Therefore academic and socioeconomic descriptions must be rendered into statistical form. To eliminate fluctuations of scores due to particular circumstances and reduce a large amount of data to one usable score, means of scores would be used. Although means tend to obscure differences between comparable items, a significant correlation has no possibility of occurring unless socioeconomic and academic performance data can be differentiated into distinguishable
high, medium and low groupings.
Studies show that the section of society called the lower socioeconomic class varies in number from about thirty per cent (Co-Operative Research Project No. G-021, 1965, p.14) to fifteen per cent (Warner, 1949) depending on definitions and the location of the study. Before one could confidently suppose that class groups had been identified, the range would have to include a group at least one standard deviation unit below the mean. This would mean at least approximately fifteen per cent were within the lower-class group.

Also it is not enough for our purposes that performance tests identify the lowest academic rung within each school. As whole schools are being correlated with socioeconomic districts, the range of the school's mean grade on three annual tests must range at least one year. If the academic level of Vancouver's schools does not show at least a year's variation on standardized tests it would not be valid to suppose that there are definable lower-class districts in Vancouver.

The simplest explanation for a result is that it is due to chance. This is why the hypothesis will be put into null hypothesis form which assumes chance as the chief causative factor. If the null hypothesis is rejected, because by a test of significance the probability of such a result happening again on the basis of chance alone is very small, other reasons for the correlation would be assumed. If, by the test of significance, the probability of such a result occurring again by chance is high, the null hypothesis will be accepted.

Hypothesis

The correlation between the performance of schools and socioeconomic district will not exceed chance.

Delimitation of the Study

The study was confined to the City of Vancouver proper, as it had a small enough number of census districts to be handled statistically with ease. It was a large enough unit, however, to contain a variety of social classes.

Only elementary schools were studied because usually these schools were smaller and able to reflect a district more accurately than the larger, heterogeneous high school. In collecting data about teachers, services and equipment in the schools, sixteen schools were used as a sample. The sample was large enough to get accurate comparison information but small enough for the questionnaire-interview type of study.

It was not the purpose of this study to recommend a specific program for teaching the culturally deprived. Developing a program would take extensive research and careful evaluation of projects of other cities. That would be well beyond the scope of this paper. Its purpose was only to demonstrate statistically that a particular problem exists in Vancouver and to point out a likely area for further probing.

## CHAPTER IV

## PILOT STUDY METHODOLOGY

Social Class Placement

A pilot study was conducted to see if by using the Dominion Bureau of Statistics census figures 1961 (population and housing characteristic by census tract) the finding of a lower-class district in Vancouver was feasible. The census districts, fifty-six in all, served as units for comparing social levels. The characteristics chosen as indicative of lower-class area were low income, high proportion of laborers in the district, high percentage attaining only elementary schooling, and poor state of house repair generally within a district. These factors are held by sociologists to be indicative of a lower socioeconomic district (Warner et al., 1949; Lenski, 1954; Landecker, 1963). The measurement of these factors in the census was found under the following headings:

1 Wage and Salary Income per Family
2 Occupation Division: Males, Laborers
3 Highest grade of schooling attended: Not attending school; Elementary, one or more years

4 . In need of major repair
The Warner method of using several indicators of class and ranking and totaling them for a final score was adopted here. The descriptions he used for identifying the lower class were also used, adjusting them
slightly for use with whole districts (instead of individuals) and for use with census figures. Other classes would be identified according to their statistical distance from the lower class. That is, an upper-class district would be one sharing least of all in the characteristics of the lower class.

Two determinants of lower social class placement, as used in Warner's Index of Status Characteristics (I.S.C.), could be taken directly from the census statistics. These were occupation and house type. In determining lowest house type, Warner states, "size is less important than condition in determining evaluation" (Warner, p.150). Therefore a lower-class district would have a high percentage of houses needing repair, and this was given in the D.B.S. figures. In the I.S.C. scale the lowest occupational rung was "unskilled workers, including laborers and domestic servants." In D.B.S. figures, "laborers" were considered comparable to the I.S.C. definition. Thus districts with the highest percentage of laborers could be termed lower class.

The descriptions of lower-class education and income were taken from Warner's Seven Point Scale, the original of the later Index of Status Characteristics. Warner's two lowest education ranks were used rather than just the lowest one so as to be comparable to Dominion Bureau of Statistics figures of those (not attending schools) having only one or more years of elementary schooling. The distinction Warner makes between those having up to three years of elementary schooling and those having up to seven years of elementary schooling would likely be less important now, twenty years after the collection of the data, considering that people
stay in school longer. The age of the study was also the reason for not using Warner's income scale.

The statistical method used to rank these factors was a fiveinterval scale for each trait. The average wage and salary income per family per district was taken directly from the Dominion Bureau of Statistics figures and converted into a five-interval scale, having $\$ 9,756$ as the top figure and $\$ 3,022$ as the bottom.* To get the proportion of laborers in a district, the number of male laborers was put over the number of males in the labor force. This fraction was put into an equal scale, $1 / 92$ being the top number and $1 / 3$ at the bottom. To obtain the education attainment figures, the number having only one or more years of elementary schooling and not attending school now was put over the total number of persons in the district. The reduced fraction was put into an equal-interval scale with $1 / 1.76$ the highest figure and $1 / 17$ the lowest figure. The proportion of houses needing repair in a district was calculated by putting the number of houses in need of repair over the total number of dwellings. Some districts had no houses in need of repair; the highest percentage of houses needing repair was $34 \%$.

Depending on which interval the particular district statistic for one of the four traits fell, the district was given a rank for that trait of one to five. For example, income district thirty-seven had a mean wage and salary income of $\$ 6,266$. The range of each of the intervals was as follows:

[^0]\[

$$
\begin{array}{rrrr}
\text { I } & 9,756-8,410 & \text { IV } & 5,715-4,369 \\
\text { II } & 8,409-7,063 & \text { V } & 4,368-3,022 \\
\text { III } & 7,062-5,716 & &
\end{array}
$$
\]

District thirty-seven would rank in Class III for the income trait.
Eventually each district had four rank scores, one for each trait. These four scores were added together for each district and a final equalinterval scale was constructed with the five intervals representing the upper class, the upper middle and lower middle classes and the upper lower and lower lower classes. A map was drawn up showing the location of these areas. See Appendix A.

Results

The final equal-interval scale which determined the social class of a district yielded the following results:

TABLE I
SOCIOECONOMIC DISTRIBUTION OF DISTRICTS

| Class Name | Number of Districts | Percentage of Population |
| :--- | :---: | :---: |
| Lower Lower | 7 | 12.5 |
| Upper Lower | 19 | 33.9 |
| Lower Midale | 18 | 32.1 |
| Upper Middle | 10 | 17.9 |
| Upper | 2 | 3.6 |

The resulting socioeconomic map shows a core area of poor districts in the downtown area with semi-circles of first upper lower and then lower
middle coming out of it. The higher socioeconomic districts are west of Cambie Street exclusively.

School Achievement

The Vancouver School Board was contacted to see if standardized test results were available for all Vancouver elementary schools. The school's battery median score on the Stanford Achievement Test for Intermediate Grades became the instrument of comparing schools' performances. The Vancouver School Board had given this test to all sixth graders in 1962, 1963, and 1964. The battery median score for each of the three years was averaged out for each school. The city median of the same test was averaged out for the three years also. The averaging of the three battery medians was done so that the influence of the possible peculiarities of one year would be eliminated. The schools scoring below the city mean were circled on the socioeconomic map. See Appendix A.

The school's district and the census district did not, of course, coincide. Generally, schools were considered as part of the socioeconomic district in which the main school building resided. However, because the lower-class districts' school populations were to be studied as a possible culturally deprived group, three schools serving mainly these children, even though within the borders of another socioeconomic district, were included with the schools completely within the lower-class district.

## Results

Seven out of eight schools (approximately $80 \%$ ) serving the lowest socioeconomic area were below the city mean on school performance.

Fourteen out of twenty-three (approximately $61 \%$ ) in the upper lower area and seven out of twenty ( $35 \%$ ) in the low middle class were below the city academic mean, but no school in districts above lower middle class was below the city mean of the Stanford Achievement Test.

The statistics show that there is a relationship between school performance and socioeconomic district. The children of lower-class districts receive a greater proportion of low grades than do children of other classes.

Comment on the Pilot Study

The results obtained by using the interval method of finding social class were reasonable if one used the results of other studies and observations as tests of validity. However, personal judgment had to intervene in a few instances in order to keep the results logical. For example, some of the interval scales had to be open-ended to accommodate a particularly low or high statistic. Without this the result would have been unreasonable. For instance, the proportion of laborers in the district went from $1: 135$ to $1: 8$. In a closed interval scale $73 \%$ of the districts would be in the lowest class. As the borders between classes had to be adjusted for these events, it was possible that borderline districts could be manipulated into one class or another.

Another weakness of the study was that much information was lost condensing statistics into a rigid five-class system. A'scale was needed that showed the districts on a compendium. In this way class boundaries would be blurred as is actually the case. Only ranking
districts was necessary, the demarcation between upper lower, lower middle, upper middle, lower upper and upper classes was not. Ranked districts would lend themselves to correlation also.

## CHAPTER V

## FINAL STUDY METHODOLOGY

## Social Class Placement

The chief fault of the pilot study was the difficulty of putting districts into one of five categories. A finer method of differentiating a high or low district was standard deviation from the mean.

The same factors used as indicative of class, as recorded by the Dominion Bureau of Statistics, were used.* A mean income, a mean percentage of people having only elementary schooling were the starting points of discovering deviations. A lower-class district would be one that had a minus standard score in income but a plus standard score on percentage of laborers and on percentage having only elementary education. To make computation of an average standard score easier, all standard scores for the latter two items were multiplied by minus one. All minus standard scores for these two items were then plus and all plus standard scores were then minus.

The same income figures were used as in the pilot study except in order to compute standard scores, raw scores were rounded and divided by one hundred. The mean income for all Vancouver districts was $\$ 5,500$ per

[^1]year; the standard deviation was $\$ 1,392$. The percentage of laborers within a district was found as in the pilot study; the mean percentage of persons classed as laborers within all districts was $5.3 \%$; the standard deviation $2.67 \%$. The percentage of people having only elementary education was found by making a ratio of people, not attending school now, who had received only elementary education with the number of people over fifteen in the district. The mean percentage of people with only elementary schooling was for all districts $28.48 \%$; the standard deviation $13.10 \%$. Each of the fifty-six districts was given a standard deviation score for each of the three factors. These scores were then added together, separately for each district, noting the adjusted plus and minus signs. These totals were then divided by three to get the average standard score for each of the fifty-six districts. On the basis of this figure, districts that lay more than one standard deviation unit below the mean were designated as the lower-class districts.

The one standard deviation cut-off point was taken somewhat arbitrarily, for convenience. However, those one standard deviation unit below the mean (approximately $15 \%$ ) would approximate the number of people found to reside in the lower class in the pilot study (approximately $13 \%$ ). The one standard deviation below the mean was also used in a similar way by Olson and Larson in their test for cultural deprivation (1963). However, as the districts would be on a compendium, the cut-off could be made within a range of possible points depending on how large or small one wanted the group focus to be for the sake of programing.

School Achievement

The instrument used for ranking the schools was the scores on the Stanford Achievement Tests. The battery median score for each of the three years, 1962, 1963 and 1964, were averaged out for each school. If more than one school resided in the census district, the schools' battery medians were averaged out. The school districts could then be ranked from one to forty-four on the basis of school achievement.

## Correlation

A rank-order correlation method was used rather than a product moment correlation coefficient to reduce the arithmetical labor. This method was adequate for the needs of the problem and the type of data available from which to make the correlation.

Rank correlation methods always assume equality of intervals. The difference between the first and the second member is assumed equal to the difference between the second and third, and so on. When the census districts were ranked from one to forty-four (twelve of the fiftysix districts were without schools) in effect it was like creating fortyfour social class levels instead of the five of the pilot study. Both school and district scores only represented statistics which were the result of efforts to find comparatively high and low schools or districts. Little was lost by ranking. Spearman's Coefficient of Rank Correlation was the simplest method with which to find out if there was a relationship between Vancouver schools which do poorly on tests and Vancouver's lowerclass districts.

## Equality of Services and Equipment to Schools

An inquiry concerning equipment and services was made in order to see if schools were similar in regard to these facilities. If a discrepancy was shown in favor of the better situated schools, it could be argued that this could partially account for an academic superiority. If, on the other hand, a program for poor districts was already initiated and still great academic inferiority existed, then one would know it was not due to services.

Questionnaires to Principals and Counsellors

To determine the availability of, among other things, audio-visual and hot lunch equipment, the existence of special classes, the extent to which community resources were used and the pupil-teacher ratio of a school, a questionnaire for principals was devised. See Appendix G. The questionnaire, followed by an interview, was the chief means of acquiring information. Counsellors were also sent questionnaires to determine if schools received their help equally. (See Appendix H.)

The questionnaire was sent to the principals and special counsellors of the eight lower-class schools found in the pilot study. A random sample of school principals and special counsellors in districts much higher on the socioeconomic scale also received questionnaires. The method of random selection was to number the schools in districts over one standard deviation unit above the mean, or upper middle class, as they appeared on a mark sheet. The numbers were then recorded on slips of paper which were put in a hat. The same number of schools from these
wealthier districts were drawn as were schools serving the poorer districts, sixteen in all.

The questionnaire for principals was tested for validity on a sample of twenty educators taking postgraduate degrees at university. They were asked to complete the questionnaire on the school with which they were most familiar. From the study of their comments about format, content, length, and order, the final questionnaire was drawn up. This was submitted to the Vancouver School Board for further reviewing with the head of the Research and Special Services Department. The questionnaire was finally sent out with a covering letter stating the approval of the Vancouver School Board. See Appendix F. Also a letter from the School Board Offices, Research and Special Services Department, was sent to each principal concerned, asking for his cooperation.

Questionnaires for special counsellors were not pretested due to the scarcity of such persons for pretest purposes.

## CHAPTIER VI

## RESULTS

Social Class Placement

Fifty-six census districts were given a standard score related to socioeconomic factors. All seven districts identified as lower class in the pilot study were at least one standard deviation unit below the mean in the final study. One district in the center of the other seven was two standard deviation units below the mean. As in the pilot study, districts close to the poorest ones were below average, those west of Cambie were generally above the city average. (See Appendix B.) The range of standard scores went from -2.14 to +1.94 , a range of over four standard deviation units.

## School Achievement

An estimate of the schools' performance was obtained from the mean of battery medians for three years. The highest grade mean for a school's three battery medians was 9.06. The lowest grade mean was 6.9. The range of grade levels was 2.16 or just over two grades.

Correlation

The correlation by using Spearman's Coefficient of Rank Correlation was .77 between the paired ranks of socioeconomic class the school served
and school performance. The correlation was high and significant to the one per cent level. (See Appendix E.) The hypothesis that the correlation between the performance of schools and socioeconomic district will not exceed chance was not supported.

## Results of Questionnaires

There was a hundred per cent return of questionnaires by principals. About sixty-five per cent requested interviews. The answers to each question were combined for the low socioeconomic district schools and for the high socioeconomic district schools. The results are set out in Table II. They show that low socioeconomic schools had more special classes, teachers, books, counsellor time, S.R.A. Kits, audio-visual aid equipment and hot lunches. The higher socioeconomic district schools had more new books, field trips and kindergarten attenders.

Eight counsellors covered all sixteen schools, seven counsellors returned questionnaires. Six out of seven provided counseling services to four elementary schools (besides high schools as well); one had six elementary schools under his care.

Counsellors mentioned that they tried to divide their time equally among the schools unless there were large discrepancies in enrollment. In these cases, the larger schools (from 720 to 1,050 pupils) received twice the time of the smaller schools (from 347 to 775 pupils), the former getting about four days a month, the latter about two days, as shown in Table III, page 34.

RESULTS OF PRINCIPALS' QUESTIONNAIRE

|  |  | Low Socioeconomic Area School | High Socioeconomic Area School |
| :---: | :---: | :---: | :---: |
| 1 | Teacher-Pupil Ratio | 4,812 pupils, 171 teachers ratio 28:1 | 5,649 pupils, 183 teachers ratio 31:1 |
| 2 | Pupil-Book Ratio | 19,067 books ratio 3.7 books per pupil | 17,535 books <br> ratio 3.1 books per pupil |
| 3 | Pupil-New Book Ratio | $\begin{aligned} & 3,052 \text { new books } \\ & \text { ratio } .6 \text { new book per pupil } \end{aligned}$ | 4,079 new books ratio $\cdot 7$ new book per pupil |
| 4 | Teacher-Equipment Ratio | (included tape recorder projectors, film and 92 pieces of equipment ratio approx. I machine for every 1.8 teachers | , record players, opaque <br> lide projectors) <br> 80 pieces of equipment ratio approx. 1 machine for every 2.3 teachers |
| 5 | Field Trips per School | (does not include swimm school board to all fi <br> 23 field trips <br> average 2.9 per school | ng lessons given by the <br> fth graders) <br> 28 field trips <br> average 3.5 per school |
| 6 | Hot Lunches | 4 serve hot lunches, 4 do not | 1 serves hot lunches, 7 do not |
| 7 | Special Materials | 24 S.R.A. Kits <br> ratio approx. 7 teachers per set | 13 S.R.A. Kits <br> ratio approx. 10 teachers per set |
| 8 | Consultants come to all | chools on referral basis. |  |
| 9 | Kindergarten | approx. $82 \%$ of first graders attend | approx. $99 \%$ of first graders attend |
| 10 | Special Classes | 29 classes | 1 class |

## TABLE III

RESULTS OF COUNSELLORS' QUESTIONNAIRE

| High Socioeconomic Area School |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| School | Number of <br> Pupils | Counseling <br> $\frac{\text { Time }}{\text { half days }}$ <br> per month |  | Low Socioeconomic Area School |  |

## CHAPTER VII

## SUMMARY AND DISCUSSION

A means of locating various economic areas was needed. A pilot study and then a final study were made using census tract figures. Statistics on the state of house repair, occupation, education, and income were chosen, after a study in the sociological literature, to be most pertinent in defining class.

The methods of finding the lowest socioeconomic group were first by a five-interval scale and second by standard deviations from the mean. Those districts falling in the lowest interval or lying one standard deviation unit from the mean were designated lower class. In both statistical methods an identical core of seven or eight districts was found. See Appendix B. The range of standard deviations went from -2.14 to +1.94 , a range of over four standard deviation units.

It is believed that both statistical methods were valid and districts composed of principally low income, little educated, laboring families were found. Such districts could be termed lower class.

An adequate estimation of the performance of Vancouver schools was needed. Results from the city-wide Stanford Achievement Test were obtained for 1962, 1963, and 1964. The three battery medians for each school were averaged. The highest grade mean for a school's three battery medians was 9.06. The lowest grade mean was 6.9. The range
therefore is 2.16 or over two years.
The hypothesis stated that "the correlation between the performance of schools and socioeconomic district will not exceed chance." Districts were ranked according to their standard scores and schools according to their achievement test scores. Districts and the schools within them were paired. The correlation by using Spearman's Coefficient of Rank Correlation was computed and found to be .77. Although a few schools served census districts other than the one in which their building was situated and this situation would tend to lower the correlation coefficient, the resulting correlation was high and significant to the one per cent level. The hypothesis, that the correlation between the performance of schools and socioeconomic district would not exceed chance was rejected.

If one of the virtues of the statistical method is its objectivity, one of its drawbacks is inflexibility. Because of the necessity of using census districts rather than school districts, schools were matched with the census district in which the main school building resided. Sometimes a school served part of another census district. Two academically low schools were matched with socioeconomic districts higher than the ones from which the majority of the pupils came. Such instances tend to reduce the correlation coefficient and therefore make a high correlation all the more valid when it does occur.

In reviewing the results of the questionnaires, low socioeconomic district schools had more special classes, teachers, books, counsellor time, S.R.A. Kits, audio-visual aid equipment and hot lunches. The
higher socioeconomic district schools had more new books, field trips and kindergarten attenders.

In spite of considerable care taken to insure that all questions were clear, some answers showed misunderstandings due to ambiguities in the questions or misreading by the respondent. Though most of these were corrected in the principal's interview or through consultation with school secretaries, it would be wrong to view the results of the questionnaire as a precise inventory of school personnel or equipment. The questionnaire's purpose was only to reveal any wide discrepancies in services.

Two questions on the questionnaire were dropped after reviewing the results. The questions on remedial groups were discarded because the answers were difficult to compare. Answers such as "work done by interested teachers," "four hundred pupils, one teacher" and "groups frequently change" could not be adequately tallied. For the same reason, the community speakers questions was also deleted, although on the answers that were comparable both school groups were similar.

From the results of the questionnaire the ratio of teacher to pupil was seemingly in favor of the schools in poor neighborhoods. In reality, however, the teachers in one group of schools did not have an average class load of twenty-eight and the other an average class load of thirty-one. The poorer class districts have twenty-nine special classes and the privileged districts have only one full-time special class. These classes have an average of fifteen pupils and therefore bring down the schools' teacher pupil ratio. Leaving out the special education population and teachers, the approximate ratio of pupil to
teacher in both areas is about thirty to one.
Considering that the schools in poorer districts are generally much older than the schools in wealthier districts, the fact that the former have more books in their libraries is not surprising. The quality of the accumulated books in these older libraries as compared with the newer libraries of schools in privileged districts is a question too broad for incidental discussion here. However, that upper-class district schools have had more additions to their libraries in the last three years than the lower-class district schools suggests that the larger libraries of the latter do not necessarily denote greater reading enrichment in these schools.

Counsellors in lower-class schools had lighter case loads than counsellors in upper-class schools. Neither the relative seriousness nor number of problems in the schools were taken into account. Also the lighter case load may be primarily a function of larger school size in the upper-class area and not an effort to cope with a multi-problem district. (Average school size for upper-class district schools was 673, whereas in the lower-class district schools the average was 601 pupils.)

The presence of more special classes in the lower socioeconomic area schools did not lower these schools' scores on the achievement tests because special classes were not participants in these tests. Therefore they cannot account for differences in performance scores between the schools in high socioeconomic areas and those in low socioeconomic areas.

The existence of such classes predominantly in the lower-class area shows that existing forms of special education could be expanded to
include the culturally deprived without requiring a change in school policy or philosophy. The classes for new Canadians, for example, are an attempt to deal with a group of children unfamiliar with the language used in the school. This is a facet of the problem of educating culturally deprived children. Methods, facilities and equipment used by these classes could provide the basis for a specific program for the underachieving child from a lower-class district.

## CONCLUSION

The purpose of this study was not to recommend a solution to a problem but to demonstrate that a particular situation in Vancouver exists. However, the problem also exists in a similar pattern in other cities where solutions have been attempted.

One of the largest and most ambitious projects for the culturally deprived is New York's Higher Horizons. For all the seemingly dissimilar factors (sixty-five New York schools in the project, with approximately $88 \%$ colored pupils) even this situation is not really different in essence from the one in Vancouver.

The children of Higher Horizons were said to ". . . live either in slum areas or on the edge of them, and come from low income families without an educational tradition" (Landers, 1963, p.8). This is not far from the Vancouver lowest income, poorly educated, laboring group.

Higher Horizons had many children coming from crowded dwellings. In the low socioeconomic Vancouver area, $13 \%$ of families (as opposed to the city average of $7 \%$ ) live in crowded dwellings.*

In the Higher Horizons program there was an average of one year seven months reading retardation of project children in grade seven. In

[^2]the Vancouver area in question, the schools were an average of one year one month retarded in reading at the grade six level.* Similarities between certain Vancouver children and children identified as culturally deprived in other cities are consistently evident.

At the present time the only practical method of identifying pupils as culturally deprived is to measure causal and coincidental factors, as no standardized tests measuring cultural deprivation exist. The only other alternative would entail measuring cultural differences, self-concepts, language development and other things relative to the behavior of the culturally deprived and taking those children that score lowest as being part of this group. Such a test is one Olson and Larson developed (1963). Composed of eighteen tests, this third way entails a great deal of time if a whole school population is to be given the tests.

At present there is no specific program for Vancouver's culturally deprived children. Classes for new Canadians and slow learner classes can be seen as a reaction to the educational problems of the lower-class child but do not directly speak to the culturally deprived group. It is no longer adequate to say that the majority of the lower-class children suffer from irreparable familial retardation. Special programs have improved these children's academic performance, many graduating who did not graduate before. The children under question in this study are not accurately identified as slow learners.
*As the retardation of culturally deprived children, and in particular Higher Horizons pupils, increases as they go through school, the Higher Horizons reading retardation of one year seven months and the Vancouver group's reading retardation of one year one month are comparable (Landers, 1963, p.23).

The culturally deprived child is often quick to learn many skills in the necessity of coping with a difficult environment. But this environment has little relation to the middle-class school environment. Vancouver mast face the dilema that other cities have faced. Having seen the high correlation between school performance and socioeconomic class, it must ask, what compensatory program will motivate and improve the school performance of our culturally deprived children?

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FINAL STUDY SOCIOECONOMIC MAP


APPENDIX C

CENSUS AND STANDARD DEVIATION FIGURES

| Census <br> District | Average <br> Family Income <br> per Year | Population <br> Over 15 <br> Years | Elementary <br> Education <br> Only | $\%$ | Adult <br> Males | Adult <br> Male <br> Laborers | $\%$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | $\$ 5,316$ | 5,798 | 1,370 | 23.62 | 1,726 | 61 | 3.53 |
| 2 | 5,621 | 6,388 | 1,200 | 18.78 | 2,047 | 66 | 3.22 |
| 3 | 4,977 | 6,453 | 1,525 | 23.63 | 1,974 | 77 | 3.90 |
| 4 | 4,798 | 5,147 | 1,490 | 28.94 | 1,561 | 62 | 3.97 |
| 5 | 3,376 | 7,877 | 4,412 | 56.01 | 2,703 | 200 | 7.39 |
| 6 | 3,052 | 3,359 | 2,239 | 66.65 | 1,051 | 84 | 7.99 |
| 7 | 4,034 | 5,520 | 2,457 | 44.51 | 2,002 | 213 | 10.63 |
| 8 | 4,282 | 4,827 | 2,192 | 45.41 | 1,811 | 174 | 9.60 |
| 9 | 4,836 | 6,326 | 2,582 | 40.81 | 2,327 | 175 | 7.52 |
| 10 | 4,991 | 5,583 | 2,014 | 36.07 | 2,151 | 148 | 6.88 |
| 11 | 4,697 | 6,082 | 2,653 | 43.62 | 2,184 | 192 | 8.79 |
| 12 | 4,866 | 4,671 | 1,711 | 36.63 | 1,834 | 133 | 7.25 |


| Census <br> District | Average <br> Family Income <br> pear | Population <br> Over 15 <br> Years | Elementary <br> Education <br> Only | \% | Adult <br> Males | Adult <br> Male <br> Laborers | $\%$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 13 | $\$ 4,270$ | 5,243 | 2,096 | 39.97 | 1,944 | 202 | 10.39 |
| 14 | 3,682 | 3,727 | 1,699 | 45.58 | 1,281 | 157 | 12.25 |
| 15 | 4,597 | 4,100 | 980 | 23.90 | 1,386 | 73 | 5.26 |
| 16 | 5,006 | 8,165 | 1,933 | 23.67 | 2,720 | 130 | 4.77 |
| 17 | 4,936 | 7,342 | 1,575 | 21.45 | 2,504 | 95 | 3.79 |
| 18 | 7,185 | 3,524 | 403 | 11.43 | 1,263 | 18 | 1.42 |
| 19 | 6,621 | 5,655 | 687 | 12.14 | 1,909 | 49 | 2.56 |
| 20 | 5,453 | 4,215 | 901 | 21.37 | 1,450 | 48 | 3.31 |
| 21 | 5,354 | 5,777 | 1,216 | 21.04 | 1,593 | 60 | 3.76 |
| 22 | 5,559 | 6,333 | 1,220 | 19.26 | 1,665 | 51 | 3.06 |
| 23 | 4,378 | 7,571 | 2,730 | 36.05 | 2,681 | 212 | 7.90 |
| 24 | 5,048 | 4,888 | 1,765 | 36.10 | 1,920 | 116 | 6.04 |
| 25 | 4,936 | 5,897 | 1,755 | 29.76 | 2,349 | 116 | 4.93 |
| 26 | 5,034 | 5,542 | 1,838 | 33.16 | 2,102 | 107 | 5.09 |
| 27 | 4,980 | 5,777 | 1,866 | 32.30 | 2,057 | 103 | 5.00 |


| Census <br> District | Average <br> Failly <br> per Yeome | Population <br> Over 15 <br> Years | Elementary <br> Education <br> Only | \% | Adult <br> Males | Adult <br> Male <br> Laborers | $\%$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 28 | $\$ 4,987$ | 6,735 | 2,323 | 34.49 | 2,611 | 160 | 6.12 |
| 29 | 4,776 | 5,674 | 2,194 | 38.67 | 2,120 | 149 | 7.02 |
| 30 | 4,719 | 4,061 | 1,444 | 35.56 | 1,532 | 108 | 7.04 |
| 31 | 4,895 | 7,175 | 2,335 | 32.54 | 2,607 | 163 | 6.25 |
| 32 | 4,785 | 4,213 | 1,351 | 32.07 | 1,519 | 100 | 6.58 |
| 33 | 5,181 | 3,702 | 1,161 | 31.36 | 1,311 | 73 | 5.56 |
| 34 | 8,735 | 1,440 | 232 | 16.11 | 557 | 14 | 2.51 |
| 35 | 6,342 | 7,590 | 1,569 | 20.67 | 2,281 | 81 | 3.55 |
| 36 | 7,310 | 5,225 | 680 | 13.01 | 1,796 | 36 | 2.00 |
| 37 | 6,266 | 4,971 | 630 | 12.67 | 1,644 | 33 | 2.00 |
| 39 | 6,940 | 4,409 | 466 | 10.57 | 1,594 | 37 | 2.32 |
| 40 | 7,701 | 2,575 | 205 | 7.96 | 940 | 11 | 1.17 |
| 41 | 7,351 | 4,759 | 673 | 14.14 | 1,498 | 24 | 1.60 |
| 42 | 7,976 | 5,627 | 677 | 12.03 | 2,095 | 52 | 2.48 |
| 43 | 5,771 | 8,193 | 1,854 | 22.63 | 2,922 | 119 | 4.07 |


| Census <br> District | Average <br> per Year | Population <br> Over lncome <br> Years | Elementary <br> Education <br> Only | $\%$ | Adult <br> Males | Adult <br> Male <br> Laborers | \% |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |

## APPENDIX D

STANDARD SCORES FOR CENSUS FIGURES

| Census District | Income | Education | Laborers | Total |
| :---: | :---: | :---: | :---: | :---: |
| 1 | -. 14 | $+.37$ | $+.63$ | +. 86 |
| 2 | +. 07 | +. 74 | +. 75 | 1.56 |
| 3 | -. 35 | +.37 | +. 49 | +. 51 |
| 4 | -. 50 | -. 03 | $+.47$ | -. 06 |
| 5 | -1. 50 | -2.10 | -. 80 | -4.40 |
| 6 | -1.72 | -2.91 | -1.03 | -5.66 |
| 7 | -1.07 | -1.22 | -2.02 | -4.31 |
| 8 | -. 86 | -1.29 | -1.63 | -3.78 |
| 9 | -. 50 | -. 94 | -. 85 | -2.29 |
| 10 | -. 35 | -. 57 | - . 61 | -1.53 |
| 11 | - . 57 | -1.15 | -1.33 | -3.05 |
| 12 | -. 43 | - . 62 | - . 75 | -1.80 |
| 13 | -. 86 | -. 87 | -1.93 | -3.66 |
| 14 | -1.29 | -1.30 | -2.62 | -5.21 |
| 15 | -. 64 | $+.34$ | -. 01 | -. 31 |
| 16 | -. 35 | $+.36$ | $+.17$ | +. 18 |
| 17 | -. 43 | $+.53$ | $+.53$ | $+.63$ |
| 18 | +1.22 | +1. 30 | +1.42 | +3.94 |
| 19 | +.79 | +1. 24 | +1.00 | +3.03 |


| Census District | Income | Education | Laborers | Total |
| :---: | :---: | :---: | :---: | :---: |
| 20 | -. . 03 | $+.54$ | +.71 | +1.22 |
| 21 | -. 07 | +. 56 | +. 55 | +1.04 |
| 22 | +.07 | +. 70 | $+.81$ | +1. 28 |
| 23 | - . 79 | -. 57 | -1:00 | -2.36 |
| 24 | -. 35 | - . 58 | -. 30 | -1.23 |
| 25 | -. . 43 | -. 09 | +.11 | -. 41 |
| 26 | -. 35 | -. 35 | $+.05$ | -. 65 |
| 27 | -. 35 | - . 29 | +.08 | -. 56 |
| 28 | -. 35 | - . 45 | -. 33 | -1.13 |
| 29 | -. 50 | -. 77 | -. 67 | -1.94 |
| 30 | - . 57 | -. 54 | -. 67 | $-1.78$ |
| 31 | -. 43 | -. 30 | -. 38 | -1.11 |
| 32 | -. 50 | - . 27 | -. 50 | -1.27 |
| 33 | - . 21 | - . 21 | - . 12 | -. 54 |
| 34 | +2.29 | $+.94$ | +1.01 | $+4.24$ |
| 35 | $+.57$ | $+.59$ | + .62 | +1.78 |
| 36 | +1.29 | +1.18 | +1.20 | +3.67 |
| 37 | $+.57$ | $+1.20$ | +1.20 | +2.97 |
| 39 | $+1.00$ | +1.36 | +1.08 | +3.44 |
| 40 | +1. 58 | +1. 56 | +1. 52 | $+4.66$ |
| 41 | +1.36 | +1.09 | +1.35 | +3.80 |
| 42 | +1.79 | +1.25 | +1.02 | +4.06 |

Census District Income Education Laborers Total

| 43 | +.21 | +.44 | -.43 | +.22 |
| ---: | ---: | ---: | ---: | ---: |
| 44 | +2.80 | +1.35 | +1.68 | +5.83 |
| 45 | -.07 | -.39 | -.27 | -.73 |
| 46 | -.21 | +.05 | -.59 | -.75 |
| 47 | -.28 | -.60 | -.59 | -1.47 |
| 48 | -.43 | -.60 | -.42 | -1.45 |
| 49 | -.14 | +.36 | +.33 | +.55 |
| 50 | -1.79 | -2.62 | -2.01 | -6.42 |
| 51 | -.57 | +.23 | -.32 | -.66 |
| 52 | -.43 | -.52 | -.65 | -1.60 |
| 53 | +3.08 | +1.47 | +1.18 | +5.73 |
| 54 | +.79 | +.97 | +1.14 | +2.90 |
| 55 | +1.00 | +1.16 | +1.31 | +3.47 |
| 56 | -.07 | +.01 | -.77 | -.83 |
| 57 | +.14 | +.07 | +.28 | +.49 |

## APPENDIX E

PAIRED RANKS FOR SOCIOECONOMIC DISTRICT AND SCHOOL SCORE

| District | District Rank | School Rank | District | District Rank | $\begin{gathered} \text { School } \\ \text { Rank } \end{gathered}$ |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | - | - | 21 | 14 | 33 |
| 2 | 13 | 37 | 22 | 12 | 18.5 |
| 3 | - | - | 23 | 39 | 42 |
| 4 | - | - | 24 | 29 | 20 |
| 5 | 43 | 35 | 25 | 20 | 27 |
| 6 | - | - | 26 | 22 | 25 |
| 7 | - | - | 27 | 21 | 21 |
| 8 | 42 | 36 | 28 | 28 | 33 |
| 9 | 38 | 34 | 29 | 37 | 40 |
| 10 | 33 | 29.5 | 30 | 35 | 22.5 |
| 11 | 40 | 27 | 31 | 27 | 29.5 |
| 12 | 36 | 33 | 32 | 30 | 17 |
| 13 | 41 | 40 | 33 | - | - |
| 14 | - | - | 34 | - | - |
| 15 | 19 | 22.5 | 35 | 11 | 9 |
| 16 | - | - | 36 | 6 | 4 |
| 17 | 15 | 10.5 | 37 | 10 | 14 |
| 18 | 4 | 8 | 39 | 8 | 2 |
| 19 | 9 | 10.5 | 40 | - | - |
| 20 | - | - | 41 | 5 | 4 |


| District | District <br> Rank | School <br> Rank | District | District <br> Rank | School <br> Rank |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 42 | 3 | 1 | 50 | 44 | 38 |
| 43 | 18 | 15.5 | 51 | 23 | 33 |
| 44 | 1 | 6 | 52 | 34 | 40 |
| 45 | 24 | 15.5 | 53 | 2 | 7 |
| 46 | 25 | 27 | 54 | - | - |
| 47 | 32 | 18.5 | 55 | 7 | 4 |
| 48 | 31 | 12.5 | 57 | 26 | 12.5 |
| 49 | 16 | 33 |  | 17 | 24 |

APPENDIX $\dot{F}$<br>COVER LETTER FOR PRINCIPALS' QUESTIONNAIRE

Dear $\qquad$ :

With the approval of the Vancouver School Board I am sending you this questionnaire. Its purpose is to obtain data about the needs and uses of services and equipment. The information will be used in my thesis studying the culturally deprived children of Vancouver.

Realizing how busy you are the questionnaire has been devised so that your secretary might fill it out if you so desire. I shall be by to pick up the questionnaire myself on May 28. If you wish to add anything further or ask me questions at that time, I will be happy to meet with you.

Thank you for your help.
Yours truly,

## /s/

Denise Knowlton

## APPENDIX G

## PRINCIPALS' QUESTIONNAIRE

1. Total number of teachers $\qquad$ Number of male teachers $\qquad$ including
2. Number of pupils $\qquad$ annexes
3. If the school has any special classes or groups such as slow learners, remedial, or accelerated classes, please specify below. Types No. of pupils No. of teachers Part time or Full time
4. If any groups in your school go on excursions, please complete the following:

Regular Trips:
How often student
per month affected Number
Place Financed by per month affected Number

Special Trips:
5. How many bound volumes are in the school library? $\qquad$
Periodical subscriptions (for student use) $\qquad$
How many new books in the last three years $\qquad$
6. How many of each of the following equipment are permanently in your school? Film Projectors Record players_Tape recorders $\qquad$ Slide projectors $\qquad$ Opaque projectors $\qquad$
7. Has your school any special materials or equipment besides those issued generally to all schools? (e.g. S.R.A. Reading Kits, teaching machines, set of six or more special texts) Type
8. If any of your pupils receive special remedial help, please specify by filling in the following:

Other
Reading Arithmetic Speech (Please specify)
How many pupils served in a year
Is the remedial teacher a member of your staff?
If not, does this person come to school on routine visits or on referral $\qquad$
9. How often per month do consultants or subject specialists visit your school?

On referral Primary Reading \begin{tabular}{c}

Physical | Ed. |
| :---: |
| Elass | (please specify)

\end{tabular}

Routine visits
10. How are children recruited for kindergarten in your school?
11. What percentage of the present first graders have been to kindergarten? $\qquad$
12. What are the facilities and finance arrangements for hot lunches

Milk
13. How often, if at all, do these community speakers come to speak to the students? (Give number of times per year) Community helpers
(e.g. firemen, Others

Speak to Librarians Parents police) (please specify) class
Speak to
Assembly

## APPENDIX H

## COUNSELLORS' QUESTIONNAIRE

Please answer as of September 1965

1. What elementary schools do you serve? Please give names of schools. 1.
2. 
3. 
4. 
5. How much time in a month do you actually spend at the school or dealing directly with the problems of the school? Please use hours or half days for each school separately.
6. 
7. 
8. 
9. 
10. Do you have any regular conferences or meetings to deal specifically with the problems of the elementary schools in your district?

YES NO with TEACHERS PRINCIPALS PARENTS SOCIAL WORKER OTHER
1.
2.
3.
4.


[^0]:    *The intervals were equal although the bottom and top figures encompassed but did not represent the actual highest and lowest income.

[^1]:    *State of house repair was deleted because only seventeen out of fifty-six districts had any house in this category at all. In fact, all districts that were in the lowest grouping had houses in this category.

[^2]:    *From Dominion Bureau of Statistics figures, Census 1961, under "Occupied Dwellings; Crowded Dwellings."

