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Geographic Distribution of Teaching Talent in California. Consultant's Report Prepared for the State Committee on Public Education.

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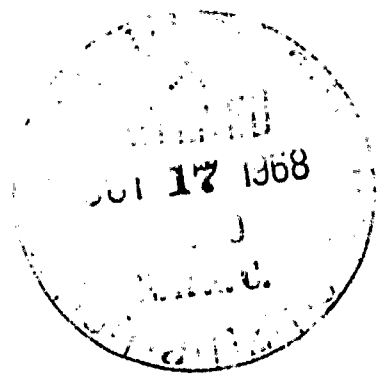
The central purpose of this study was to examine the relationship between distribution of teaching talent and geographic location of local school districts of California. School districts were assigned to one of four geographic categories (urban, suburban, rural, or small urban centers). Each category's teaching talent was assessed on six measures of experience and training. The most striking finding was that rural schools possess a disproportionately low number of the State's most highly qualified teachers. It was suggested that the study's findings needed elaboration to determine if differences in teacher quality reflect themselves in differences in pupil performance. It was recommended that rural districts' ability to compete for talented teachers be improved by (1) instituting a statewide minimum salary schedule, and (2) increasing the attractiveness of rural teaching by offering benefits such as home building loans and added opportunities for professional contacts. Short range improvement efforts should be directed at stimulating rural school recruitment activities and forming a statewide volunteer teacher corps. Statistical data are included. (SW)



GEOGRAPHIC DISTRIBUTION OF TEACHING TALENT IN CALIFORNIA

Consultant's Report Prepared for the State Committee on Public Education

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David N. Evans

Berkeley, California

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Innate intellectual capacity and early childhood environment are the two dimensions which have been given the most attention in scientific explanations of human learning. In recent years, however, evidence has begun to mount in support of the importance of a third dimension: access to and quality of formal educational opportunities. This study concerned itself with a portion of this third dimension, namely the quality of teachers. More specifically, the study had as its central purpose an examination of the relationship in California between the distribution of teaching talent and the geographic location of local school districts. The study's primary question was: "Does every California student have equal access to the highest quality teaching?"

All California school districts were assigned to one of four geographic categories: urban, suburban, rural, and small urban centers. Thereafter, each category's teaching talent was assessed on six measures of experience and training. When comparisons were made between categories of districts, the most striking finding was that rural schools possess a disproportionately low number of the State's most highly qualified teachers. Teachers in the remaining three categories appear to possess a more homogeneous blend of talent.

The study's findings are in need of elaboration in order to determine more accurately if differences in teacher quality reflect themselves in differences in pupils' performance. Nevertheless, even without the benefits of extended research, the study's conclusions are sufficient to justify practical steps to remedy the disadvantaged position of rural districts. Specifically, consideration should be given to improving

the long-range abilities of rural districts to compete for the most talented teachers by (1) instituting a statewide minimum salary schedule for teachers and (2) increasing the attractiveness of rural teaching by offering benefits such as home building loans and added opportunities for professional contacts and improvement. Short-range, stop-gap, improvement efforts should be directed at (1) stimulating rural schools' teacher recruitment activities and (2) forming a statewide volunteer teacher corps to assist rural (as well as inner city) disadvantaged schools.

Background

Do Teachers Make A Difference?

The genetically conferred learning capacity of humans has long been a subject for scientific inquiry. Environmental effects have come under study only relatively recently, but investigations to date already mark this area as containing powerful explanatory potential. Suffice it to mention here that these two categories are not, either singly or in consort, capable of explaining all differences in pupil achievement. As influential as nature and nurture may be, other conditions appear to affect student learning. Conventional wisdom suggests that at least some of the additional conditions are related to the individual's access to formal educational opportunities.

Indeed, there is increasing empirical evidence that the quality of formal educational opportunity, particularly the quality of one's teachers does affect student performance. A study conducted for the U. S. Office of Education by James S. Coleman found 12 proxy measures of teaching quality to be significantly correlated with pupils' scores on achievement tests. The Report states:

> ... The quality of teachers shows a strong relationship to pupil achievement. Furthermore, it is progressively greater at higher grades, indicating the cumulative impact of the qualities of teachers in a school on pupil achievement.[1]

Recent evidence from an investigation conducted by Charles S. Benson for the California State Senate demonstrates forcefully that teacher quality is closely associated with student achievement. The California Senate study discovered a significant statistical relationship between pupil achievement and proportion of a district's teachers in the upper statewide salary quartile.

> ... The interpretation of this finding is as follows: After account is taken of the influence of education of adults and of the income of households in the district, those school systems in the low achievement category that manage to employ a higher-than-expected number of teachers in the upper salary quartile by statewide salary standards have higher-than-expected standards of achievement of pupils and the instruction offered by these teachers who are qualified by experience and training to be paid in the upper salary quartile is positive, and the association stands independently of the known connection between the home environment of pupils and their achievement.[2]

Where are the "Good" Teachers?

If teacher capability affects the manner in which students learn, then, in a society committed to equality of opportunity, it would seem important to provide each child with equal access to high quality teachings. Is such, indeed, the case? Does every child in California have equal access to the best teaching? This study's purpose was to begin to answer that question.

There does exist a small amount of information, gathered in other states and in other contexts, which provoked the suspicion that teacher quality might not be uniformly distributed. The previously referred to Equality of Educational Opportunity study, in addition to examining the effects of teacher quality in an absolute sense, also suggests that students in some geographic areas may have access to higher quality teaching than in other geographic areas. Specifically, the Coleman

Report compares Census Bureau defined metropolitan and nonmetropolitan geographic areas on its 12 dimensions of teacher quality. Disparities were found to exist in every section of the U. S. For example, on the quality measure of "undergraduate major," 22 percent of nonmetropolitan teachers in the Southwest had an academic undergraduate major as compared to only 7 percent of metropolitan teachers in the same geographic region.[3]

Further suspicion concerning teacher quality inequities comes from a recent Carnegie Corporation-sponsored study by Allen K. Campbell which discovered that suburban school districts tend to spend more per pupil than do the core cities they surround. This finding, and knowing that the overwhelming percentage of a school district's budget is devoted to teachers' salaries, suggests that suburbs generally are able to attract a wider choice of candidates and, thus, may be in possession of a disproportionate share of teaching talent.[4]

In addition to data from the Coleman and Campbell studies, there exists an abundance of anecdotal and common sense information to the effect that urban cores and rural areas are widely viewed as the least desirable places in which to teach and, consequently, attract a disproportionately lower number of the most able teachers. But, whether empirical or common sensical, more information about the distribution of teacher characteristics is needed. If the teacher's ability, indeed, makes an educational difference, then it is important to know the manner in which such ability is distributed.

The Research Study

Geographic location, the study's independent variable, was classified in an arbitrary, but logically defined, four part typology consisting of rural, urban, small urban, and suburban school districts.[5]

Each of California's school districts was placed into one of these categories on the basis of 1960 census data.

The 22 school districts which fell within a "core city" of a Census Bureau defined Standard Metropolitan Statistical Area (SMSA) were classified as urban. School districts in cities such as Los Angeles, San Diego, Long Beach, San Jose, and San Francisco fell into this category. Suburban was the category for 171 districts, other than core cities, also located in SMSA's. The rural category included those 928 districts outside of SMSA's with populations of under thirty thousand. And, small urban centers were those 109 districts outside of an SMSA but with thirty thousand or more inhabitants.

Teaching ability served as the study's dependent variable and, as with student learning, it is presumed that a large number of abilities, both intellectual and personal, constitute a talented teacher. However, to date, it has not been possible to arrive at a precise behavioral definition of "good" teaching. Consequently, research involving teacher quality has tended to use empirical proxies which appear to be logically linked to the performance capability of teachers. This lack of precise measurement also served as a limitation in this study. However, in that equality of distribution, not a precise definition of good teaching, was this study's goal, it was decided to measure teaching talent along generally agreed upon dimensions of training and experience. In other words, this study's measures of teacher quality include those characteristics for which school superintendents generally look when hiring teachers. Moreover, this study's measures of quality are the very ones upon which the salary schedules of most school districts are based. Thus, one way to view the following findings is as an assessment of the relative abilities of school districts to attract the kinds of teachers they desire.

Teacher "Quality" Characteristics

Relevant data were collected in late 1966 and early 1967 by the California Senate Fact Finding Committee on Education. The Committee solicited answers to a 25 question survey from each of California's almost 200,000 teachers (the survey enjoyed a remarkable 95 percent rate of return). Answers to this survey comprised the data for this study.

The Senate Fact Finding Committee requested information on six dimensions which can be construed to bear a logical relationship to the quality of a district's teachers:

1. Years of Service. The assumption here is that experience as a teacher increases one's teaching proficiency; all other factors being equal, new teachers are presumed to be less effective than experienced teachers.

2. Credential Type. The "quality" assumption with this measure is that teachers with "Regular" credentials possess greater ability than those with "Provisional" or "partially fulfilled" credentials.

3. Degrees Held. The assumption here is that the higher the academic degree held the more effective the teacher. (The variable was defined by determining the percentage of teachers in a geographic category who hold degrees above the bachelor's level.)

4. Undergraduate Major. There is evidence to the effect that students who major in education tend to be below the median of their peers in measures of academic performance.[6] Consequently, it seems logical to extrapolate that the larger the percentage of a geographic category's teachers possessing "academic" undergraduate majors, the higher the category's teaching quality.

5. Type Position. The assumption here is that "permanent" teachers (those which have been granted tenure by a school district) are more proficient than non-permanent (probationary, temporary, and substitute) teachers.

6. Special Teachers. The assumption here is that educational opportunity is improved by the presence of specially trained teachers (for the handicapped, mentally retarded, gifted, etc.) and guidance counselors. (The variable was defined by computing the percent of a geographic category's teachers possessing "Pupil Personnel" and "Special Credentials".)

In addition to information on the "quality" characteristics, Fact Finding Committee questionnaire results were also used to compare the four geographic categories of school districts on dimensions such as teachers' sex, age, and place of education (in or out of California).

Sampling Procedures

Modern sampling techniques made it unnecessary to consider every teacher's answers to the questionnaire. It was determined that a randomly selected sample containing approximately 2 percent of the teachers within each geographic category would permit accurate generalizations about the entire teacher population in urban, suburban, rural, and small urban school districts. An approximate 2 percent ramdom sample resulted in the following figures:

Geographic Category	Total Teacher Population	Number in Random Sample
Urban	40,256	929
Suburban	58,100	1,331
Rural	40,774	898
Small Urban	24,253	572
Unmatched[7]	25,985	
Totals	189,868	3,730

Analysis

Once random samples were generated, questionnaire responses of teachers within each geographic category were sorted to determine percentage distributions on the above-described six "quality" dimensions. Tests of significance were then applied to determine the probability that with a 2 percent sample the percentage obtained could have occurred by chance alone.

Findings

A Caveat

The study's findings need to be viewed with some caution. The completion of the questionnaire depended upon a teacher's comprehending a moderately complex set of instructions; consequently, the chance for respondent error was substantial. Attempts were made in this study to correct or eliminate from consideration patently outrageous questionnaire responses (such as a teacher being in excess of 100 years old and annually earning a $60,000 teaching salary). Nevertheless, conditions did not permit statistical refinement of the data to the fullest extent possible and approximately 13 percent of teachers' answers could not be sampled and thus were excluded from analysis.

Rural "Have Nots"

The most dominant finding is that on almost every dimension "rural" teachers as a group appear less able than their urban, suburban, and small urban center colleagues.

When compared on the dimension of position type (Table I), rural districts have the lowest proportion, 52 percent, of "permanent" teachers (teachers presumed to be capable and thus given tenure). Conversely, rural districts have the highest proportion, 48 percent, of "nonpermanent" teachers (teachers on probationary, temporary, or substitute status). By contrast, only 40 percent of the entire California public school teaching force is classified as "nonpermanent." The figure for urban school districts is an even lower 33 percent. Thus, if the assumption is made that teachers classified as "permanent" are more capable than those labeled "nonpermanent," it is clear that rural districts are suffering.

On a second dimension, credential type (Table II), rural district teachers are the lowest geographic category in the percent possessing "regular" credentials, and, conversely, highest in the percent operating with "irregular" (provisional or partially fulfilled) credentials. Thirteen percent of rural district teachers are "irregularly" credentialed compared to only 9 percent for teachers in the other three categories. Thus, on this second quality measure rural teaching also appears comparatively low.

On a third characteristic, "years of experience," rural district teachers do not appear at first glance to be at a significant disadvantage (Tables III and IV). Forty-one percent of rural teachers sampled had 10 or more years of experience. This compares with 43 percent of urban and small urban center teachers and only 37 percent of suburban teachers with 10 or more years of teaching. In other words, experienced teachers (10 or more years of teaching) tend to be in a proportionally greater degree in urban and small urban school districts (Table V). A significant difference, however, is that suburban teachers with 10 or less years of experience tend to have MA or higher degrees, academic majors as undergraduates, and "permanent" (tenured) positions. The less experienced rural district teacher is significantly more likely than his suburban colleagues to have only a BA degree, an undergraduate major in education, and a provisional or partial credential. (In fact, one out of every five inexperienced rural teachers is lacking a regular teaching credential.)

Moreover, an analysis of the age distribution among geographic categories reveals that rural districts draw a statistically significant low percentage of young teachers (Table VI). Whereas 28 percent of suburban teachers are in the 20-29 year-old bracket, only 22 percent of rural teachers fall into this category. It would seem that the

rural recruits are less well trained but older than their non-rural colleagues. A tempting possible explanation is that rural recruits have entered teaching after having experienced dissatisfaction or failure in another occupation. Another guess is that rural districts must press relatively inexperienced housewives into service as the result of teacher shortages. Thus, though rural districts may possess an equitable share of "experienced" teachers, data suggest that such districts do not attract a fair share of the most capable and best trained young teaching blood.

Also, rural teachers appear to have less formal training than the sample of teachers as a whole (Table VII). Rural teachers possess the lowest percentage of advanced (Masters and doctorates) degrees. Whereas urban and suburban districts have 37 percent and 36 percent of their teachers, respectively, in possession of an advanced degree, only 29 percent of the rural teachers sampled had a degree higher than an BA.[8]

Rural districts also appear lowest on the dimension of "Undergraduate Major" (Table VIII). Only 41 percent of rural district teachers have an undergraduate academic major compared to 48 percent for urban and 47 percent for suburban and small urban center teachers.

The percentage of rural district teachers possessing pupil personnel and special education credentials (Table IX) is 11.8 percent, whereas the equivalent measure for suburban districts is 14.5 percent and the state as a whole is 13.4 percent. This is by no means a drastic difference. It, nevertheless, poses the possibility that rural students do not have equal access to the guidance and special education services which increasingly are judged to be important features of high quality schooling.

Non-Rural Districts--The "Haves"

By contrast with the rural, non-rural (urban, suburban, and small urban) school districts appear relatively homogeneous on this study's quality measures. The two exceptions to this generalization concern temporary and substitute teachers, and male and female distribution patterns.

Urban school district teachers in the sample under consideration were more likely than their non-urban counterparts to hold either "temporary" or "substitute" positions (Table I). The actual figures for these two categories are 5 percent for urban compared to less than 1 percent for non-urban districts. This finding lends support to the suspicion that large city districts tend to depress operating expenses by employing teacher personnel who do not technically qualify to be paid in accord with the district's regular salary schedules and thus can be retained at lower wages than otherwise would be the case.

The second non-rural distribution anomaly concerns a disproportionately heavy percentage of female teachers in urban and suburban school districts (Table X). Urban and suburban districts respectively average 61 percent and 60 percent female school teachers compared to 55 percent and 56 percent for rural and small urban centers. At present, it is not possible to say what effect, if any, this has upon aggregate teaching quality. The result may simply be a sampling artifact, or it is not unlikely that the girls go where they think the eligible males are located.

Conclusions

The differences which separate rural districts from the other three categories are not overwhelming on any one dimension. However, they are consistent; that is, on almost every dimension, rural districts

appear to possess less capable teachers, and the differences are sufficiently large as to have only a slight probability of occurring by chance alone. Consequently, it appears evident that some phenomenon is operating which prohibits rural school districts from having equal access to the best teachers in California.

Almost 75 percent of all California school districts were classified as rural by the definitions used in the study. However, these districts tend individually to be small and their aggregate enrollment constitutes only about 20 percent of the State's total public school population. Nevertheless, this is one out of every five pupils in California; a number sufficiently large to warrant action to remedy the inequities involved.

Aside from the very large consideration which needs to be given to assuring each child the best possible educational opportunity, there exists an additional society-wide reason for taking remedial action to improve rural education. Beginning in the 19th Century with involvement in the Industrial Revolution and continuing through and receiving stimulus from two World Wars and the "Cold War," this nation has been undergoing an unprecendented migration to urban areas. The tide of migration has risen until today it is estimated that 70 percent of our population inhabits but 6 or 7 percent of our land. The virtues of rural living are romantically preserved and paid lip service, but people, nevertheless, continue to move to the cities; problems of mass transit, ghetto living, and air and water pollution are an almost inevitable result.

The reasons for urban migration are complex, but it is possible that access to educational opportunity is one of the magnets drawing people to cities. No matter what the aesthetic and moral advantages of rural living can be presumed to be, it is difficult to expect a

family to move to or remain in a rural community when to do so entails the rather definite possibility that their children will be subjected to a lower quality educational opportunity than would be available in an urban or suburban setting. Thus, assuring that the education available to rural youth is, at least, the equivalent of that offered elsewhere would appear to be an important step in stemming the tide of urban migration.

Salary: A Chicken or an Egg?

There undoubtedly exist many reasons for differences in teacher quality between various geographic areas. Explanations ranging from climate, to number of eligible marriage partners, to availability of cultural opportunities may all play some part in attracting teachers to school districts. Also, it would appear reasonable to assume that economic incentives play a role in a determining where teachers will accept employment. And, if annual salaries are taken as the measure of economic incentive, then there may exist a partial explanation for the rural school districts' low position on the teacher quality hierarchy.

An examination of teachers' salaries over the four geographic categories reveals some rather startling differences. The salary level for rural teachers is significantly lower at every quartile level than that of non-rural teachers (Table XIII). When contrasted to the highest paid category, urban teachers, the median annual salary for rural teachers is $1,470 less. At the upper quartile level, rural teachers annually average $1,760 less than their urban counterparts, $1,160 less than suburban teachers, and $875 less than small urban district teaching personnel. If these differences accurately reflect

earning potential within geographic categories of school districts, then they are sufficiently large to detract from the competitive posture of rural districts in the race for the highest quality teachers.

Teachers' salaries are based in large measure upon the individual's years of teaching experience and number of units (or degrees) beyond the Bachelor level. Consequently, it is difficult to determine from the information obtained in this study whether the low rural district salaries are strictly a function of the economic incentives offered by such districts or whether they tend to be low in the aggregate because rural districts have the highest proportion of inexperienced teachers possessing no degrees beyond the BA. However, a sufficient amount is known in other contexts about the financial conditions of rural districts to draw the inference that in this instance, salaries probably represent the "cause" rather than the effect side of the ledger.

Recommendations

As is often the case with research, this study's findings tend to raise more questions than they answer. Why do the younger teachers tend to settle in suburban school districts? Why do rural district teachers tend to be less experienced and have less advanced training? Why on most of the measures of teacher "quality" do rural school districts come off second best when compared with all other districts? What part does salary play in determining where teachers teach? These questions and many more are answerable; however, unless conducted under the unlikely conditions of a "crash" project the needed research could be expected to take anywhere from one to three years. In the meantime, literally thousands of children may be being subjected to

educational circumstances which warrant immediate improvement. Thus, the following recommendations are offered as possible means for achieving and maintaining equality of educational opportunity for rural school districts.

Long-Range Improvements

Improved Economic Incentives. If it is determined that the relatively low rural teacher salaries revealed in this study are the result of low rural-district salary offerings (and not simply a factor of rural districts hiring a disproportionate share of inexperienced and less well-trained teachers), then attention should be given to altering state financial aid programs in a fashion which would improve the earning potential available to rural teachers. At least a partial step in this direction could be made by instituting a statewide minimum salary schedule for teachers. Such a device, though not guaranteeing that rural districts could match the salary paying potential of the more wealthy school districts, would at least tend to narrow the range of discrepancy between rural and non-rural economic incentives.

Improved Living Conditions. Lack of comfortable living conditions is sometimes given by teachers as a reason for avoiding rural teaching. Modern housing may be difficult to come by, and there is often a lack of colleagues with which to associate in rural communities. These handicaps may operate to discourage high quality teachers from accepting rural positions. This may especially be the case for the recent college graduate with an MA but no spouse; the kind of teacher which currently is attracted to the suburbs where living comfort, age-mates, and eligible marriage partners are more likely to be located.

A partial solution to the problem may be to increase the attractiveness of rural living by providing teachers with modern housing at

no cost or at greatly reduced rates. Moreover, by locating such "teacherages" in clusters to serve a fairly extensive geographical area and providing for unmarried teachers, it might be possible to compensate for lack of colleagues and companionship. The concept of the "teacherage" is an old one, but especially for remote and isolated school districts, it appears worthy of investigation as a possible means for increasing the attraction of good teachers.

An alternative which might appear particularly attractive to married males would be to have rural districts make no-interest or low-interest housing loans available to tenured teachers.

Improved "Professional" Environment. The physical remoteness of a rural school can often lead to remoteness from professional activities and continuing educational opportunities for rural teachers. Moreover, it seems reasonable that professional remoteness might be most discouraging to the highest "quality" teachers; individuals interested in the latest research results, the most modern instructional methods, the newest curriculum materials, etc. In short, inadequate opportunities for professional contact may be discouraging the teachers rural districts need most.

A possible solution for the problem of professional contact might be provided in the form of state-sponsored conferences, workshops, and classes on topics relevant to education in rural areas. Such conferences and the like could take place in the fall before school or during Christmas and Easter recesses. They could be held in culturally and geographically desirable locations and conducted by experts from the State and Nation. If teachers' expenses to conferences were paid by the local district or the State such a plan might accomplish two purposes: (1) provide rural teachers with a high level of continuing in-service education, and (2) act as an attractive fringe benefit to induce high quality teachers to come to and remain in rural schools.

Improvement of Recruitment. Rural school districts are often at a distinct disadvantage when it comes to the recruitment of new teachers. Problems of distance and lack of resources seldom allow them to conduct the aggressive recruiting campaigns which are increasingly typical of suburban and urban school districts. Whereas non-rural districts often traverse the State and sometimes the Nation[9] in their quest for good teachers, rural districts are more usually reduced to one or two trips to the nearest teacher training institution. The remainder of their recruiting is of an "armchair" nature, hoping that a capable housewife or an ardent outdoorsman will drop in off the street seeking a teaching position. Consequently, the chances of a rural district employing the graduates of institutions such as Stanford, the University of California, or Harvard are greatly reduced as compared with their non-rural competitors.

Several avenues for more effective recruitment may exist. All of them make the vital assumption that the community and school board involved are desirous of employing better teachers. If such is the case, then thought should be given to establishing multi-district consortia for recruitment purposes. The operation of such consortia would require substantial planning and cooperation. Agreement would have to be reached on the priority of desirable teacher characteristics; authority to hire perhaps would need to be delegated to a multi-district recruitment director, and some agreement upon salaries might be necessary among the districts in a consortium. These and other problems would require time and resources to resolve. Consequently, the State Department of Education might assist by providing the consortia with leadership and resources. It might even be desirable and feasible to grant subventions of State funds to such consortia to enable them to publicize and recruit

in the same fashion as non-rural districts. In some instances an entire county might band together for recruitment and use the resources of the County Superintendent of Schools.

Short of interdistrict recruitment consortia, improvements might be gained by a degree of centralized recruitment in behalf of rural school districts in the State Department of Education itself.

Short-Range Improvements

A State Teachers Corps. The previous recommendations for action are aimed at the improving the ability of rural schools to attract higher quality teachers over the long haul of the future. It is likely that some of the recommended remedies would take two or three years to begin to make significant difference in the recruiting power of rural districts. For example, if teacherages were to be built for rural teachers, their construction time alone would cause an effective lag of several years. Consequently, it would seem that an even more immediate solution is needed for the problem of providing higher quality teachers to rural areas; a solution which could be implemented and achieve results within a short period of time, say six months or a year. Such a solution might be possible in the form of a California Teacher Corps.

The centralized (e.g., State Department of Education) recruitment of a corps of dedicated and idealistic recent college graduates to serve in the less desirable schools of isolated rural communities and inner city ghettoes might begin to compensate for the relative lack of high quality teachers presently in such areas. Centralized recruitment would enable even the most remote school district an opportunity to tap the large manpower pool of the San Francisco and Los Angeles areas. The concept of a "Corps" with a cause--education of the underprivileged--would enable education to benefit from our culture's much underrated

wellspring of youthful idealism which has enabled the national Teachers' Corps and the Peace Corps to achieve such dramatic successes.

A host of operational decisions would be required in order to make a State Teachers' Corps successful. Recruiting processes would need to be established which guaranteed participation of local personnel in the selection of volunteers to serve in their districts. Rates of compensation would need to be determined and processing arrangements would need to be developed. Nevertheless, once authorized, the federal government operated Teachers' Corps sprung into actuality in a very few months. California's program would probably be smaller in scope, at least initially, and thus amenable to equally rapid implementation. Moreover, the substantial possibility exists that federal funds would be available (e.g., under the newly enacted Education Professional Development Act) to assist in financing the program.

(All Percentages Statistically Significant at the .01 Level Unless Otherwise Indicated.)

TABLE I

Position Type

	Geographic Category				
	Urban	Suburban	Rural	Small Urban	State Average
Permanent	.664	.609	.519	.591	.598
Probationary	.284	.381	.458	.402	.379
Substitute	.025	.005	.002	.002	.009
Temporary	.020	.004	.004	.002	.008
Over one year contract	.006	.002	.017	.002	.006

Credential

	Geographic Category				
	Urban	Suburban	Rural	Small Urban	State Average
General	.776	.781	.786	.776	.780
Administration	.088	.073	.096	.091	.085
Pupil Personnel	.033	.044	.046	.045	.042
Special	.102	.101	.072	.087	.092

TABLE II

Type of Credential*

	Urban	Suburban	Rural	Small Urban	State Average
Regular	.911	.913	.879	.907	.891
Provisional	.026	.025	.032	.024	.036
Partially Fulfilled	.064	.062	.089	.068	.072

*(Percentages statistically significant at the .05 level.)

TABLE III

Number of Years of Teaching Experience

	Urban	Suburban	Rural	Small Urban	State Average
0 - 5	.342	.393	.374	.355	.370
6 - 10	.235	.237	.215	.210	.227
11 - 15	.180	.180	.198	.203	.188
16 - 20	.123	.119	.124	.117	.121
21 - 25	.051	.041	.042	.059	.046
26 - 30	.037	.014	.022	.028	.024
Over 30	.033	.017	.024	.028	.024

TABLE IV

Teachers in Suburban and Rural Districts With

Ten or Less Years of Experience

Suburban: N = 838 Rural: N = 529

	Suburban	Rural
Highest Degree Held:		
B.A.	.722	.766
M.A.	.258	.221
Ph.D or Ed.D	.006	.000
None	.014	.013
Undergraduate Major:		
Education	.348	.374
Academic	.458	.405
Other	.194	.221
Total		
Type of Position:		
Permanent	.444	.353
Probationary	.542	.635
Substitute	.007	.004
Temporary	.005	.006
Over one year contract	.002	.002
Credential Type:		
Regular	.871	.803
Provisional	.035	.055
Partial Fulfillment	.094	.142

TABLE V

Years of Teaching

	Urban	Suburban	Rural	Small Urban
10 years or more	.557	.630	.589	.565
10 years or less	.423	.370	.411	.435

TABLE VI

Age

	Urban	Suburban	Rural	Small Urban	State Average
10-19	.001	.000	.000	.000	.000
20-29	.242	.281	.217	.210	.245
30-39	.260	.271	.263	.285	.296
40-49	.288	.258	.267	.297	.273
50-59	.168	.150	.177	.164	.163
60-69	.040	.039	.076	.042	.049
70-79	.000	.001	.000	.002	.001

TABLE VII

Highest Degree Held

	Urban	Suburban	Rural	Small Urban	State Average
B.A.	.617	.630	.693	.663	.647
M.A.	.350	.343	.284	.325	.328
Ph.D or Ed.D	.016	.014	.008	.003	.012
None	.017	.012	.016	.009	.014

TABLE VIII

Undergraduate Major

	Urban	Suburban	Rural	Small Urban	State Average
Education	.314	.331	.384	.339	.341
Academic	.483	.468	.412	.470	.459
Other	.202	.201	.204	.191	.200

TABLE IX

Position

Full Time	.983	.974	.982	.988	.980
Part Time	.017	.026	.018	.012	.020

TABLE X

Sex

Male	.386	.403	.448	.442	.399
Female	.614	.597	.552	.558	.601

TABLE XI

Location of B.A. Degree

	Urban	Suburban	Rural	Small Urban	State Average
California	.604	,569	.565	.549	.574
Other	.378	.420	.420	.439	.412
None	.018	.011	.016	.012	.014

TABLE XII

Graduate Work

California	.624	.612	.571	.570	.599
Out-of-State	.059	.050	.075	.061	.060
In - Out	.168	.213	.224	.264	.212
None	.149	.126	.130	.105	.129

TABLE XIII

Salaries by Quartiles

	Urban	Suburban	Rural	Small Urban
Q_1	7,320	7,050	6,792	7,200
Q_2 (Median)	9,620	9,000	8,150	8,888
Q_3	11,560	10,960	9,800	10,675

Footnotes

1. Equality of Educational Opportunity (Washington, D.C., U. S. Government Printing Office, 1966). It is of interest to note that the recent criticisms of this study by Henry M. Levin and Samuel Bowles (Journal of Human Resources, winter, 1968) leave unscathed, or even strengthen, the original findings regarding the importance of the teacher in explaining differences in pupil performance.

2. Senate of the State of California, Report of the Senate Fact Finding Committee on Revenue and Taxation, (Sacramento, Senate of the State of California, March, 1965), p. 56.

3. Equality of Educational Opportunity, op. cit., p. 16. (Metropolitan is defined by the Census Bureau in this instance to mean a city of over fifty thousand inhabitants. All other areas are defined as nonmetropolitan.) See Footnote 7 for an explanation of the logical relationship between teacher quality and undergraduate major.

4. Campbell, Allen K., The Politics and Financing of Education; Federal, State, and Local Interaction. (Paper presented to the American Orthopsychiatric Association, Washington, D.C., March, 1967), p. 6.

5. Initially it was planned to place a school district into one of only three categories, rural, urban, and suburban. However, the existence of towns such as Merced, San Luis Obispo, and Santa Rosa complicated matters. Such municipalities were different than "core cities," but they were too isolated geographically to be labeled as suburbs. Conversely, they did not seem to possess characteristics in keeping with the rural image. Consequently, a fourth category, small urban centers, was created.

6. In a study conducted by the National Opinion Research Center, Peter Rossi found that persons heading for education are neither the best nor the worst in terms of academic accomplishment--they are close to average. But this finding partly reflects the fact education is a field chosen heavily by women whose academic performance in college is on the average better than that of men. For if we compare educators who are going on to post-graduate work with those from other fields who are going on, then prospective educators are fairly low on the academic performance totem pole. About a third (30.1 percent) of all students going on are in the top fifth of academic performance while only 17.8 percent of the educators fall into this group. (Social Characteristics of 1961 College Graduates Entering the Field of Education, Peter Rossi, NORC, University of Chicago.)

7. It was impossible to classify approximately 25,000 teacher respondents because of incomplete, missing, or miscoded survey replies. Also, an error in coding was made whereby junior college teachers were included in the sample. A disproportionate number of these teachers were found to be in the rural category. The effect of this mistake was to bias the findings in favor of the rural districts. That is, the more highly qualified junior college teachers tended to raise the "quality" level of all teachers in that category.

8. Though the percentages are too small to warrant emphasis, it is of interest to note the rural districts also possess the second highest percentage of teachers without any degree (urban .017, rural .017, suburban .012, and small urban .009).