A STUDY OF CHARACTERISTICS OF THE MICHIGAN PUBLIC SCHOOL TEACHING POPULATION BY ECONOMIC AREAS OF THE STATE

By

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A DISSERTATION

Submitted to the School of Graduate Studies of Michigan State University of Agriculture and Applied Science in partial fulfillment of the requirements for the degree of

DOCTOR OF PHILOSOPHY

Department of Administrative and Educational Services

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An Abstract

The purpose of this study was to provide basic and detailed information about the public school teaching population of Michigan by geographic sub-divisions of the state. A secondary objective was to indicate the use of such data in the identification and analysis of educational problems in the separate regions of the state.

The state was divided, on the basis of counties, into nine Metropolitan and thirteen Non-metropolitan Economic Areas which are substantially the same as those used for federal census tabulations. Teaching populations of Metropolitan, Non-metropolitan and separate Economic Areas were analyzed by the following factors: (a) types of school district in which teachers were employed; (b) dates of certificate; (c) types of certificate; (d) amounts of training; (e) institutions where work was completed for certificates; (f) teaching assignments; and, (g) four factors of teaching experience. These data were obtained from records maintained by the County Superintendents of Schools.

Detroit teachers were excluded from these analyses. The 39,935 teachers included in the study were estimated to represent 99.6% of the Out-state public school teaching population. Records for over 90% of

these teachers were for the school year 1952-53, the remainder for 1953-54. For every characteristic analyzed, data were complete for at least 92% of the total teaching population, 90% of the teachers of each Metropolitan Area and 72% of the teachers of each Non-metropolitan Area.

Rank order correlation coefficients were computed for relationships between selected categories of most of the factors analyzed. Implications of the results of the study were discussed for the problems of: (a) school district organization; (b) present and future demands for teachers; and, (c) teacher training in state-supported higher education during the period of high demand for teachers. Data relative to school and community finance, population trends, and rates of school attendance for each Area were introduced into these discussions.

General Findings and Conclusions

1. Teaching populations of separate Economic Areas vary to a marked degree in most of the characteristics examined. In general, teaching populations of Metropolitan Areas include higher percentages of fully-qualified teachers and teachers having longer years of experience.

2. Teaching populations of most of the Areas tend to rank rather consistently as high, medium high, medium low or low for a majority of the characteristics examined.

3. Current problems of education vary to a marked degree in terms of their importance and their difficulty of solution in the various Areas of the state.

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4. Reorganization of school districts is indicated for a number of Areas as a method of more efficient utilization of available funds.

5. Every Area of the state will experience problems in satisfying the increasing need for teachers, the combination of factors producing the need being unique for each Area.

6. All state-supported institutions which train teachers will be taxed beyond their present facilities if the increased demands for teachers are to be met. The extent of the demands upon each of these institutions will vary according to: (a) the nature and location of the institution; and, (b) trends in the percentage of the teaching population supplied by the institution over the past several decades.

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I. INTRODUCTION

Genesis of the Study

The present study was an outgrowth of a larger research project undertaken for the Michigan Council of State College Presidents by its Sub-committee on Teacher Education (14, 15). This project included a study of teacher supply and demand in Michigan and an analysis of the characteristics of Michigan public school teachers. The project included no analyses of the teaching population by geographic sub-divisions of the state. The Council of Presidents and the Sub-committee on Teacher Education granted permission to the writer to use previously unanalyzed data, pertaining to the distribution of teachers by county, in the development of the present study. Due to the close relationship between these studies, it has been necessary to quote from and reproduce some of the descriptions and results reported in the earlier study. Permission to use the raw data and to quote from the original study is gratefully acknowledged by the writer.

Typically, studies of the characteristics of Michigan teachers have been undertaken as necessary bases for investigations of specific educational problems, particularly the problem of teacher supply and demand. Such studies have tended to appear near the beginning of each decade, following the release of federal census data. A pioneer study by Moehlman (11), appearing in 1922, surveyed the needs of the Michigan State Normal Schools and analyzed some of the characteristics of the

registrants at the Normal Schools, the potential teacher supply. In 1931 the Michigan Conference of City Superintendents of the Michigan Education Association authorized studies of teacher certification and teacher supply and demand. The final reports (7, 10), prepared by a sub-committee of the organization and by Eugene B. Elliott included rather extensive data on a variety of characteristics of the Michigan teaching population.

A sequel to the 1921 and 1931 studies was done in 1941 by VanZwoll (18). This analysis of teacher supply and demand was one of the investigations basic to the Michigan Cooperative Teacher Education Study. In 1953 Nelson (12) included analyses of various characteristics of Michigan teachers in his study of selected factors related to teacher supply and demand.

Although most of these studies have been primarily concerned with the problem of the demand for and supply of teachers, the analyses of teacher characteristics have been very useful in the study of a variety of related problems; for example, needs and practices of teacher-training institutions, policies and practices of teacher certification, professional and financial status of teachers, teacher recruitment and selection, effects of economic conditions on education.

None of the studies that have been mentioned included analyses of teacher characteristics by separate geographic areas of the state. In some cases teachers were characterized by the type of school district in which they were employed or analyses were made separately for the Detroit and Out-state teaching populations. In consideration of the traditional preference of the people of Michigan for local control of and responsibility for the organized education of their children, a careful

study of the teachers of separate areas of the state seems essential to the successful identification and solution of local problems. The primary purpose of this study was to provide such basic information. A secondary objective was to illustrate the use and implications of such data, particularly as they relate to the identification and analysis of some of the current problems of education in separate areas of the state. Solutions of such problems must remain with the people.

Geographic Division of the State

For the purpose of analyzing the teaching population by geographic areas, teachers have been placed into sub-divisions corresponding to the Economic Areas of the state. These Economic Areas are based on the groupings of counties used for federal population and agricultural tabulations (3). The map of Michigan in Figure I shows the location and boundaries of each Area. Two types of Areas are recognized: (a) "Metropolitan State Economic Areas" which consist of a city of 50,000 or more, together with the county in which the city is located and other contiguous counties which are closely integrated with the city; and, (b) "Non-metropolitan State Economic Areas" which consist of groups of the remaining counties.

Metropolitan Areas are designated by capital letters and Non-metropolitan Areas are designated by numbers. Oakland, Macomb and Wayne counties are all part of a single Area. However, due to the large number of teachers employed in this Area, these three counties have been considered separate Economic Areas for the purposes of this study and

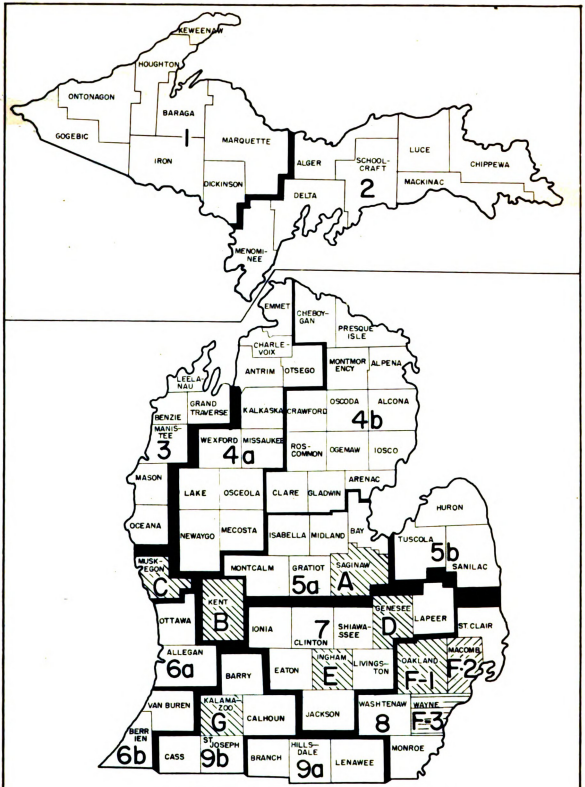

Fig. I Economic Areas of the State of Michigan

labeled F1, F2 and F3 respectively. Some of the Non-metropolitan Areas are separated into "a" and "b" parts. In order to maximize the value of the results for local use, each of the parts of these Areas has been considered a separate Area for the purposes of this study. As a result of these divisions, there are a total of nine Metropolitan Areas and thirteen Non-metropolitan Areas. The number and letter designations of Areas shown in Figure I have been used throughout this report.

The division of the state into Economic Areas was selected as the most appropriate method of geographic division for the following reasons: (a) Division on the basis of single counties was rejected in the belief that such a division would lead to a reduction in the value of results due to the very small teaching populations of some counties; (b) The use of pre-established areas makes possible comparisons of results with other types of data which have been accumulated using the same method of geographic division; and, (c) Use of these Economic Areas permits not only comparisons of the teaching population of one Area with others, but comparisons between the teaching populations of Metropolitan and Non-metropolitan divisions as well.

Collection of the Data

Most of the initial procedures followed in this study were the same as those used in the second part of the study for the Council of Presidents. The description of such similar procedures has been quoted directly from the original study.

The various county and state sources of data about the teaching personnel of the state were surveyed and it was found that the records maintained by the County Superintendents of Schools contained the most complete and current data available. In the fall of each year a Personnel Report Form Number 1 . . . is completed for the teachers of each large school district of the county and a Personnel Report Form Number 2 . . . is completed for each person teaching in a small rural school district. These detailed report forms are maintained in the County Superintendents' offices and a summary of the data is submitted to the State Department of Public Institution.

. . . . . .

Each County Superintendent . . . was contacted, and temporary loan of these records was requested. Similar records for the teaching personnel in non-public schools were not available. The contents of this report apply to teaching personnel in public schools only (15:1).

Description of the Data and Sample Obtained

Of the data contained in Personnel Report Form 1, the following items were recorded for each teacher:

1. County in which the teacher was employed
2. Date certificate was issued
3. Kind of certificate
4. Institution where work was completed for certificate
5. Degrees held or total college credits in semester hours
6. Teaching assignment
7. Number of years of previous teaching in the present school
8. Number of years of previous teaching in other schools
9. Whether the teacher had taught full time the previous year.

Through use of records at the Department of Public Instruction, it was also possible to classify each teacher according to the type of school district in which he or she was employed. By adding items 7 and 8 above, it was possible to obtain total years of teaching experience for each teacher.

For teachers employed in small rural school districts, the data contained on Personnel Report Form 2 were in most cases not as complete as that listed above. In many counties record forms had been devised which were different from the form suggested by the Department of Public Instruction. As many of the items of information listed above as could be obtained were recorded for teachers reported on Form 2 (15:1-2).

Personnel Report Forms are not maintained by the School District of the City of Detroit. In the original study, information about Detroit teachers was obtained from IBM records used by the Board of Education of Detroit. The items of information obtainable from these records were in most cases not directly comparable to those recorded for Out-state teachers. The teaching population of the City of Detroit has not been included in the analyses in this study. A brief description of the Detroit teaching population has been included in Chapter VI following the summary of the characteristics of teachers of Area F3, Wayne County. Throughout this report, discussions of the teaching population refer to Out-state teachers only, unless otherwise indicated.

> The request for the use of records was made in the Fall of 1953. Since it was believed that the then current records (for the school year 1953-54) would still be in use by the County Superintendents, the use of records for the previous year (1952-53) was requested. For various reasons these records were not available from all counties and in these cases the records for 1953-54 were substituted. Records for 1953-54 were used for the following counties: Barry, Calhoun, Grand Traverse, Iosco, and Kalamazoo; and for Monroe City in Monroe County and the City of Saginaw in Saginaw County. . . .
>
> Personnel Reports were received from all eighty-three counties. The records for only one county are known to be incomplete; data for 146 rural teachers of Allegan County are not included in this report. There is a possibility that a few teachers were not reported in some counties. Such teachers would in all probability be from small rural school districts, since it is known that records were received for all large school districts. It is also possible that a few too many teachers may have been included for some school districts due to variations in reporting substitute teachers (15:3).

The estimated total population, including 8,947 Detroit teachers omitted from the study and the 146 teachers for whom information was not received, amounts to 45,028. The sample of 35,935 teachers for whom records were received and used represents 79.8% of the total estimated

population and 99.6% of the estimated Out-state population.

Table 1 shows the number and per cent of the study sample of teachers included in each Economic Area and lists the names of the counties included in each Area.

TABLE 1

DISTRIBUTION OF STUDY SAMPLE OF TEACHERS BY ECONOMIC AREA

Econ. Area	Counties Included	N	%
A	Saginaw	1,013	2.8
B	Kent	1,897	5.3
C	Muskegon	1,085	3.0
D	Genessee	2,027	5.6
E	Ingham	1,311	3.7
F1	Oakland	3,444	9.6
F2	Macomb	1,472	4.1
F3	Wayne	4,596	12.8
G	Kalamazoo	983	2.7
Metropolitan Total		17,828	49.6
1	Baraga, Dickinson, Goegebic, Houghton, Iron, Keewenaw, Ontonagon	1,475	4.1
2	Alger, Chippewa, Delta, Luce, Mackinac, Menominee, Schoolcraft	1,009	2.8
3	Benzie, Grand Traverse, Leelenau, Manistee, Mason, Oceana	814	2.3
4a	Antrim, Charlevoix, Emmet, Kalkaska, Lake, Mecosta, Missaukee, Newaygo, Osceola, Otsego, Wexford	1,269	3.5
4b	Alcona, Alpena, Arenac, Cheboygan, Clare, Crawford, Gladwin, Iosco, Montmorency, Ogemaw, Oscoda, Presque Isle, Roscommon	1,090	3.0
5a	Bay, Gratiot, Isabella, Midland, Montcalm	1,764	4.9
5b	Huron, Sanilac, Tuscola	839	2.3
6a	Allegan, Ottawa	813	2.3
7	Clinton, Eaton, Ionia, Jackson, Lapeer, Livingston, Shiawassee	2,646	7.4
8	Monroe, St. Clair, Washtenaw	2,187	6.1
9a	Branch, Hillsdale, Lenawee	1,102	3.1
9b	Barry, Calhoun, Cass, St. Joseph	1,794	5.0
Non-met. Total		18,107	50.4
Total		35,935	100.0

The population of teachers in each Area is considered to be substantially complete, except for Area 6A which is approximately 85% complete and Area F3 which is approximately 34% complete.

It is acknowledged that the necessary substitution of 1953-54 records for the teachers of some counties creates certain variations in the data. The use of 1953-54 data affected only six of the twenty-two Economic Areas. Table 2 shows the percentage of teachers in each of these six Areas for whom 1953-54 data were substituted for 1952-53 data.

TABLE 2

TEACHERS FOR WHOM 1953-54 RECORDS WERE USED

Econ. Area	1953-54 Records N	%
A	626	61.8
G	983	100.0
3	206	25.3
4b	118	10.8
8	195	8.9
9b	1,255	69.9
Total	3,383	9.4

The number of teachers for whom 1953-54 records were used amounts to 9.4% of the total number included in the study, 9.0% of the total in Metropolitan Areas and 9.8% of the total in Non-metropolitan Areas. Since the yearly turnover rate in any given county or Economic Area is relatively small, variations introduced into the results by substitution of 1953-54 records are considered of minor importance.

Although the total number of teachers included in this study amounts to 99.6% of the estimated Out-state teaching population, every

item of information was not available for every teacher. As has already been indicated, data were least complete for rural teachers reported on Personnel Form 2. Every teacher could be classified by county and, therefore, every teacher could be classified in the proper Economic Area. Table 3 shows the number and per cent of Metropolitan, Non-metropolitan and total teachers for whom data were available for each item used in this study.

TABLE 3

NUMBER AND PER CENT OF METROPOLITAN, NON-METROPOLITAN AND TOTAL TEACHERS FOR WHOM DATA WERE AVAILABLE FOR EACH ITEM

Item	Teachers for Whom Data were Recorded					
	Metropolitan		Non-Metropolitan		Total*	
	N	%	N	%	N	%
Type of school district	17,828	100.0	18,107	100.0	35,935	100.0
Date of certificate	17,740	99.5	17,626	97.4	35,366	98.4
Type of certificate	17,750	99.6	18,025	99.6	35,775	99.6
Amount of training	17,553	98.5	17,022	94.0	34,575	96.2
Institution where work was completed for certificate	17,441	97.8	16,920	93.5	34,361	95.6
Teaching assignment	17,757	99.6	18,010	99.5	35,767	99.5
Total years of teaching	17,556	98.5	16,446	90.8	34,002	94.6
Years in present school	17,440	97.8	15,983	88.3	33,423	93.1
Years in other schools	17,423	97.7	15,709	86.8	33,132	92.2
Whether taught previous year	17,542	98.4	16,223	89.6	33,765	94.0

*Adapted from Sub-committee on Teacher Education Report, Part II, Table 3, p. 5.

It may be observed from Table 3 that, while data were available for at least 92% of the total group for every item, data were available for no less than 97% of the Metropolitan group on every item and less than 90% of the Non-metropolitan group for several items. This disproportionate distribution is even more pronounced when the Economic Areas are considered individually. Data were complete for at least 90% of the teachers of each Metropolitan Area for every item. Data were complete for at least 72% of the teachers of every Non-metropolitan Area for every item. Exact numbers and percentages of the teachers of each Area for whom data were unavailable have been included in the tables showing complete distributions for the various items.

Treatment of the Data

In the interest of making the most complete and efficient use of the information obtained, the data were coded and recorded on IBM cards. An IBM card was punched and verified for each teacher and results were tabulated. From the tabulations, distributions of the total teaching population and the group of teachers in each Economic Area were set-up for every item of the data collected. For those items having relatively few categories; for example, amount of training, the percentage of teachers in each category was calculated for total and sub-groups. For items having a large number of categories, teachers were classified into major categories; for example, on the item of teaching assignment, teachers were classified as Administrative, Special Education, Elementary and Secondary. On such items percentages were calculated for major categories only.

Accuracy of Results

The possible sources of error which may have led to inaccuracies in the results of this study are several. The results can, of course, be no more accurate than the original reporting of the data by the teachers and the recording of the data on the Personnel Forms. In working with these reports, it became apparent that the instructions for completing them were occasionally misunderstood or misinterpreted. Other possible sources of error were in the processes of coding, IBM card punching and tabulating, and the final development of tables from the tabulations. The following specific precautions were taken to assure the highest possible accuracy of results: (a) It was frequently possible to detect errors in the original recording of the data and almost all errors made in coding and IBM operations were detectable in the final analysis of the data. In each step of the process, when an error was detected, an effort was made to determine the teacher's correct classification on that item and to make a re-classification. If the correct classification was impossible to determine, the teacher was classified with those for whom no information was available on that item; (b) The coding of some items required the making of certain judgments. To minimize inaccuracies due to differences in judgment, all of the coding for both the original study and the present study was done by the same person; (c) Errors in card punching and tabulating are believed to have been almost nil, since every card punched was verified by another operator and all machine operations were carried out by experienced personnel; (d) In the final operation of recording the data in tabular and graphic form, as they are presented in this report, all calculations were

checked and re-checked.

In view of the large number of teachers included in this study and the precautions taken to assure accuracy, it is estimated that any inaccuracies are insignificant in the total results. In the discussion of results, mention has been made of a possible lowered accuracy on those few items which were most subject to misinterpretation. Special attention has also been called to results which may be spurious due to reduced availability of data.

Presentation of Results

Chapters II, III, and IV present analyses of the teaching populations for each of the items of data collected. These analyses include a description of the method of coding used, the distribution of all teachers for the given item, comparison of the Metropolitan and Non-metropolitan populations, and distributions by separate Economic Areas for the given item. Discussions of the total distributions have been kept to a minimum, since all such distributions, along with interpretive discussions, have been included in the original study for the Council of Presidents.

Chapter V discusses implications of the results for some of the current major problems of education in Michigan. Additional data regarding school and community finances, population trends, and school attendance have been introduced, a description of the sources and treatment of these additional data being included in the discussions.

Chapter VI presents summaries of the distinctive characteristics of the teaching populations of the separate Economic Areas. The final chapter offers a brief summary of the total study and lists the major conclusions which have been drawn from the results.

II. ANALYSES OF TEACHER POPULATIONS BY TYPES OF SCHOOL DISTRICT AND FACTORS OF CERTIFICATION

The present chapter includes analyses of the teaching populations for the following characteristics: (a) the types of school districts in which teachers were employed at the time of the study; (b) dates certificates were received; and (c) types of certificates held.

Types of School District

In a direct sense, the analyses of types of school districts in which teachers were employed, contributes less to the description of the teaching population than to an understanding of the composition and organization of the various Economic Areas. Although in some cases a teacher is limited by type of certificate or kind and amount of training to teaching in a specific type or limited types of school districts, most teachers are qualified to teach in any type of district and may easily move from one type to another with few or no changes in other characteristics. An analysis of types of school districts has its greatest value in the resulting implications for district organization, which have been included in a later chapter.

It was possible to classify every teacher by the type of school district in which he or she was employed. The system by which classification was made is that used by the State Department of Public Instruction. Table 4 lists the letter designations and descriptions of the

types of school districts and shows the number and per cent of teachers employed in each type of district. Type A district, which includes only the City of Detroit, has been excluded.

TABLE 4

DISTRIBUTION OF TEACHERS BY TYPE OF SCHOOL DISTRICT

Letter Designation	Classification of School District Based on General Population*	N	%
B	100,000 to 500,000	2,048	5.7
C	50,000 to 100,000	4,080	11.4
D	25,000 to 50,000	3,129	8.7
E	10,000 to 25,000	4,147	11.6
F	2,500 to 10,000	3,775	10.5
G	1,000 to 2,500	1,850	5.1
H	Under 1,000 with 6 or more teachers	762	2.1
K	Under 1,000 with less than 6 teachers	3,686	10.3
L	Large districts outside of corporate limits	2,948	8.2
I	Rural agricultural schools	7,088	19.7
J	Township school districts other than rural agricultural	2,422	6.7
T	Districts sending their children to other schools	---	----

*Except for large districts outside of corporate limits, rural agricultural schools, township school districts, and districts sending their children to other schools.

Table 5 shows the number and per cent of the teachers employed in each type of district who were located in Metropolitan and Non-metropolitan Areas. The relationship of types of school district to Economic Areas is, of course, partially limited by definition. Any county including a city of 50,000 population or more is automatically classified as a Metropolitan Area. All teachers employed in B and C type districts should be located in Metropolitan Areas. The 746 teachers of C type school districts located in Non-metropolitan Areas are teachers of the

TABLE 5

NUMBER AND PER CENT OF TEACHERS EMPLOYED IN EACH TYPE OF SCHOOL DISTRICT WHO WERE LOCATED IN METROPOLITAN AND NON-METROPOLITAN AREAS

Type of District	Metropolitan		Non-metropolitan		Total
	N	%	N	%	
B	2,048	100.0	---	---	2,048
C	3,334	81.7	746	18.3	4,080
D	2,121	67.8	1,008	32.2	3,129
E	1,720	41.5	2,427	58.5	4,147
F	1,000	26.5	2,775	73.5	3,775
G	660	35.7	1,190	64.3	1,850
H	123	16.1	639	83.9	762
K	787	21.3	2,899	78.7	3,686
L	2,355	79.9	593	20.1	2,948
I	2,447	34.5	4,641	65.5	7,088
J	1,233	50.9	1,189	49.1	2,422
Total	17,828	49.6	18,107	50.4	35,935

cities of Jackson and Bay City. The federal census for 1950 lists each of these cities as having populations slightly over 50,000. It is apparent that the classification of Economic Areas was done previous to the time when these cities attained populations which would have classified them as Metropolitan Areas and has not as yet been revised.

It may be observed from Table 5 that of the teachers employed in types of districts supported by communities of 25,000 or over and in large districts outside of corporate limits (L) the percentages located in Metropolitan Areas are higher than in the distribution of all teachers. Correspondingly, of the teachers in types of districts supported by communities of 25,000 or less, rural agricultural districts (I), and Township districts (J) the percentages employed in Non-Metropolitan Areas are higher than in the total distribution.

Tables 1 and 2 in the appendix show the complete numerical and percentage distributions of teachers in each Economic Area by type of school district. For the purposes of analyzing these data and presenting them graphically, the types of school districts were grouped into three categories:

I. Types of districts supported by communities of 2,500 population or over (B through F). The numbers of these districts, as well as the numbers of teachers employed in them, have, in general, been increasing over the past few years.[1]

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[1] See Annual Financial Reports of the Department of Public Instruction (9).

II. Rural agricultural districts, large districts outside of corporate limits, and township districts (L, I, J). The numbers of these districts, as well as the numbers of teachers employed in them, have, in general, been increasing over the past few years.[1] In most cases, the districts included in this category represent the result of some form of consolidation of schools.

III. Types of districts supported by communities of 2,500 population or less (G, H, K). The numbers of these districts, as well as the numbers of teachers employed in them, have, in general, been decreasing over the past few years. Such decreases may be largely accounted for by successful efforts at consolidation and district re-organization.

Figure II shows the percentage of teachers in each Economic Area who were employed in each of the groups of districts described above. The following general conclusions may be drawn from these results:

1. Comparing the total Metropolitan population to the distribution of all teachers, it may be seen that the percentage of Metropolitan teachers employed in districts classified in Group I is higher than in the total distribution, the percentage of Metropolitan teachers employed in districts of Group II is about equal to the percentage of the total teachers in the corresponding category, and the percentage of Metropolitan teachers employed in Group III districts is lower than in the total distribution.

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[1] Loc. cit.

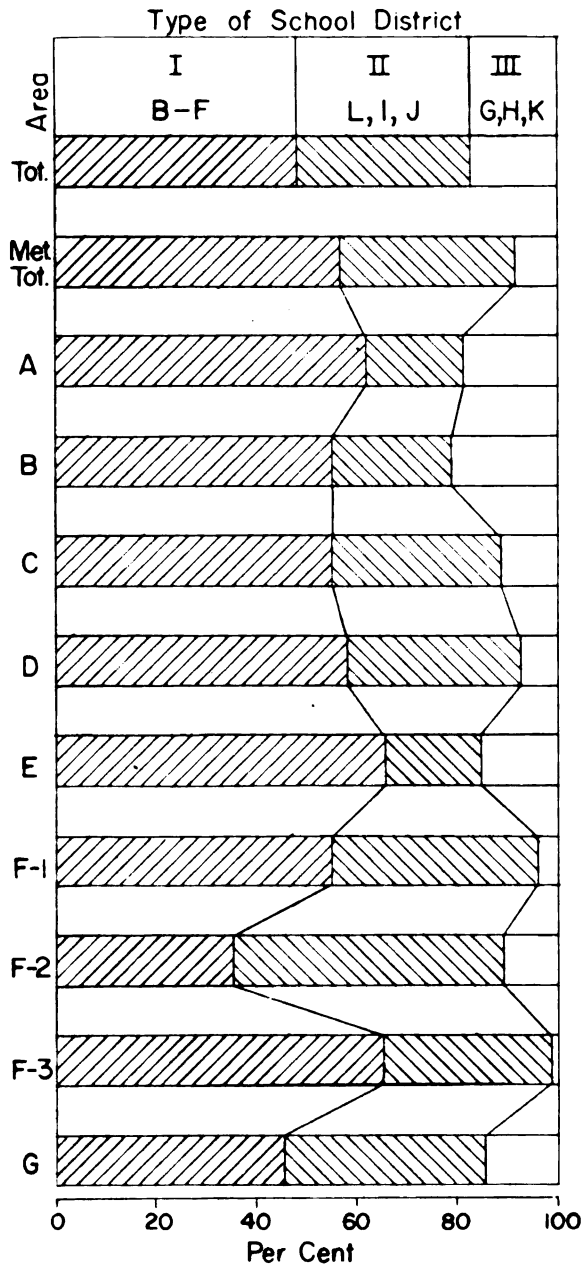
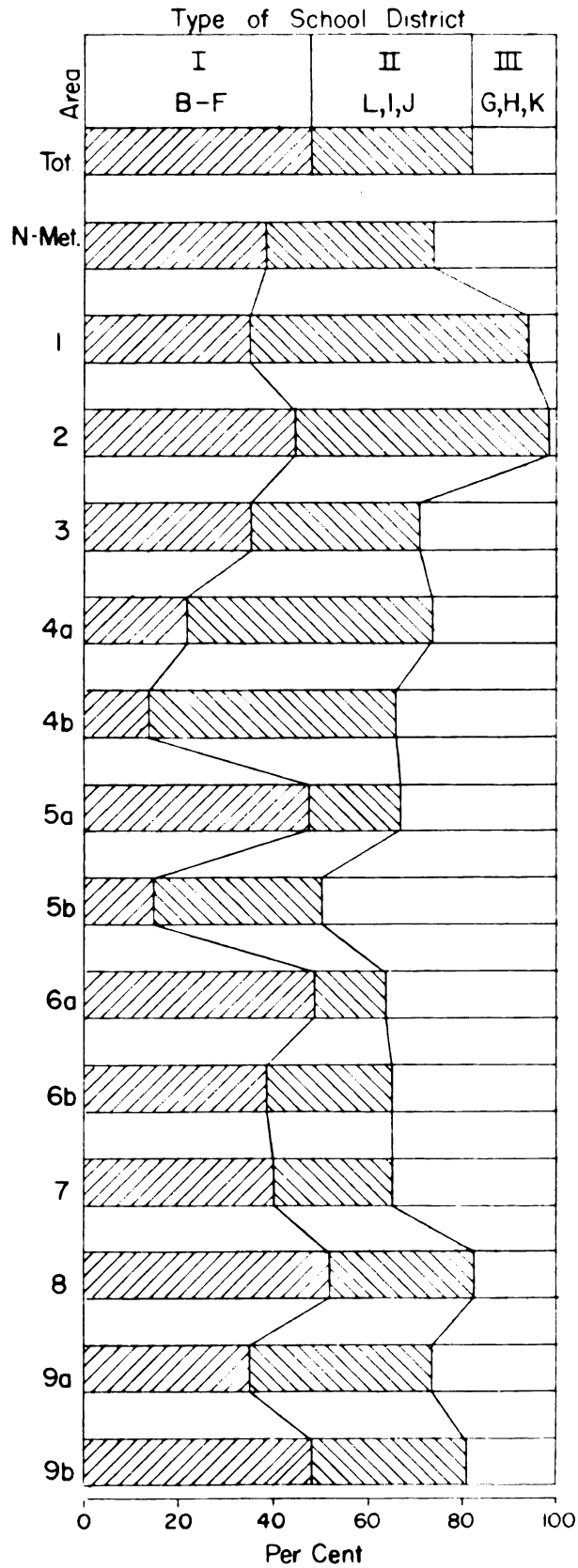


Fig. II. Distribution of Teachers in each Economic Area by Type of School District.



2. Comparing the distribution of teachers of separate Metropolitan Areas to the distribution of all teachers shows that in every Metropolitan Area: (a) the percentage of teachers employed in districts of Group I is higher than in the total distribution, except in Areas F2 and G; (b) the percentage of teachers employed in districts of Group II is lower than in the total population, except in Areas F1, F2 and G; and, (c) the percentage of teachers employed in districts of Group III is lower than in the total distribution, except in Areas A and B.

3. A comparison of the distribution of teachers in the Non-metropolitan population to the distribution of all teachers shows that the percentage of Non-metropolitan teachers employed in districts of Group I is lower than the percentage in the total distribution, the percentage of Non-metropolitan teachers employed in districts of Group II is about equal to that found in the total group, and the percentage of Non-metropolitan teachers in districts of Group III is higher than in the total distribution.

4. A comparison of the distribution of teachers in each separate Non-metropolitan Economic Area to the distribution of all teachers shows that in every Non-metropolitan Area: (a) the percentage of teachers employed in districts of Group I is lower than the percentage in the total distribution, except in Areas 6a, 8, and 9b; (b) the percentage of teachers employed in districts of Group II is higher than in the total distribution, except in Areas 5a, 6a, 6b, 7, 8 and 9b; and, (c) the percentage of teachers in districts of Group III is higher than in the total group, except in Areas 1, 2, and 8.

5. The unavailability of data for 146 rural teachers of Area 6A distorts the distribution of the teachers of this Area. It is likely that almost all of these unreported teachers were employed in districts of Group III.

Dates of Certificate

Coding of teachers by date of certificate was relatively automatic, except in cases where the teacher was reported as having more than one certificate. In such cases, the certificate coded was the one under which the teacher was then teaching and the date coded was the one referring to the certificate in force. This choice could be made in almost all cases by reference to teaching assignment and type of school district.

In the process of coding, certain discrepancies in reporting became apparent. In general, these discrepancies were of two kinds: (a) Since State Board Special certificates must be renewed each year, all such certificates should have been reported as having been issued in 1952 or 1953. In a number of cases Special certificates were reported as having been issued previous to 1952. It is likely that in these cases the date recorded is the year in which the Special certificate was first awarded rather than the date of current renewal; and, (b) In a number of cases the date of certificate given was previous or subsequent to the time during which the given type of certificate could legally have been issued. For example, one or more Life certificates was reported for every year since 1939, the last year in which Life certificates were awarded. In

such cases, it has been assumed that the teacher held two or more certificates in succession and for types of certificates no longer issued, the date reported applies to a more recent certificate, while for those types issued since the dates reported, the year refers to a previous certificate. It may be concluded that a teacher mis-classified on this item, did, in all probability, receive a certificate in the year reported, but that the date does not refer to the certificate (or renewal) currently in use. Such mis-classifications represent less than 2% of the total group of teachers.

Table 6 shows the number of teachers who received certificates each year and the per cent who received certificates before 1913 and for each five-year period since 1912.

TABLE 6

DISTRIBUTION OF TEACHERS BY DATE OF CERTIFICATE*

Date of Certificate	N	%	Date of Certificate	N	%
1901	3		1928	1,012	
1902	2		1929	1,101	
1903	4		1930	978	13.0
1904	5		1931	1,031	
1905	10		1932	552	
1906	11		1933	490	
1907	17	.9	1934	411	
1908	18		1935	428	6.3
1909	31		1936	498	
1910	48		1937	462	
1911	75		1938	472	
1912	116		1939	487	
1913	130		1940	110	3.6
1914	151		1941	110	
1915	189	2.7	1942	110	
1916	223		1943	96	
1917	279		1944	178	
1918	285		1945	236	3.8
1919	250		1946	350	
1920	288	4.7	1947	505	
1921	380		1948	1,122	
1922	502		1949	1,840	
1923	681		1950	3,355	49.7
1924	803		1951	3,792	
1925	912	11.7	1952	7,754	
1926	927		1953	653	3.6
1927	893		No info.	569	
			Total	35,935	100.0

*Adapted from Sub-committee on Teacher Education Report, Part II, Table 5.1, pg. 8.

Table 7 shows the number and per cent of the teachers who received certificates in selected periods of years who were employed in Metropolitan and Non-metropolitan Areas.

TABLE 7

NUMBER AND PER CENT OF TEACHERS CERTIFIED IN SELECTED PERIODS OF YEARS WHO WERE EMPLOYED IN METROPOLITAN AND NON-METROPOLITAN AREAS

Date of Certificate	Metropolitan		Non-metropolitan		Total
	N	%	N	%	
1901-12	151	44.4	189	55.6	340
1913-17	523	53.8	449	46.2	972
1918-22	962	56.4	743	43.6	1,705
1923-27	2,210	52.4	2,006	47.6	4,216
1928-32	2,266	48.5	2,408	51.5	4,674
1933-37	1,272	55.6	1,017	44.4	2,289
1938-42	646	50.1	643	49.9	1,289
1943-47	773	56.6	592	43.4	1,365
Since '47	8,937	48.3	9,579	51.7	18,516
No Info.	88	15.5	481	84.5	569
Total	17,828	49.6	18,107	50.4	35,935

It is interesting to note that, compared to the total distribution, higher percentages of teachers certified in all periods, except the initial period of the century, the period which most closely coincides with the depression years (1928-32) and the final period (since 1947)

were employed in Metropolitan Areas. It may further be observed that of the relatively small number of teachers for whom a date of certificate was not available, about 85% were employed in Non-metropolitan Areas.

Figure III affords an opportunity to examine the Metropolitan and Non-metropolitan distributions by single years. The outstanding feature of the total pattern shown in Figure III is the relative proportions of teachers in the 1952 population who received certificates in the periods 1922-31 and 1932-47. It is obvious that this pattern is largely a result of the influences of the depression and of World War II, reflecting a period of time in which few teachers could be hired because of financial limitations, followed by a later period in which even fewer teachers could be hired because they were unavailable. Certain factors of certification also affect this pattern, particularly the years of the 1940's and 1950's. The most important of these factors concerns renewal of certain types of certificates, most notably the State Board Special. With the exception of a few mis-classifications, all Special certificates were recorded as issued in 1952. However, many of the teachers teaching under Special certificates began teaching during the 1940's and have continued on annual renewals of this type of certificate. Through compliance with certain requirements, renewals are also possible for County Limited and State Limited certificates. The net effect of the certificate renewal factor upon the pattern shown, is a reduction of the number of teachers certified in the 1940's and a swelling of the numbers certified in the 1950's.

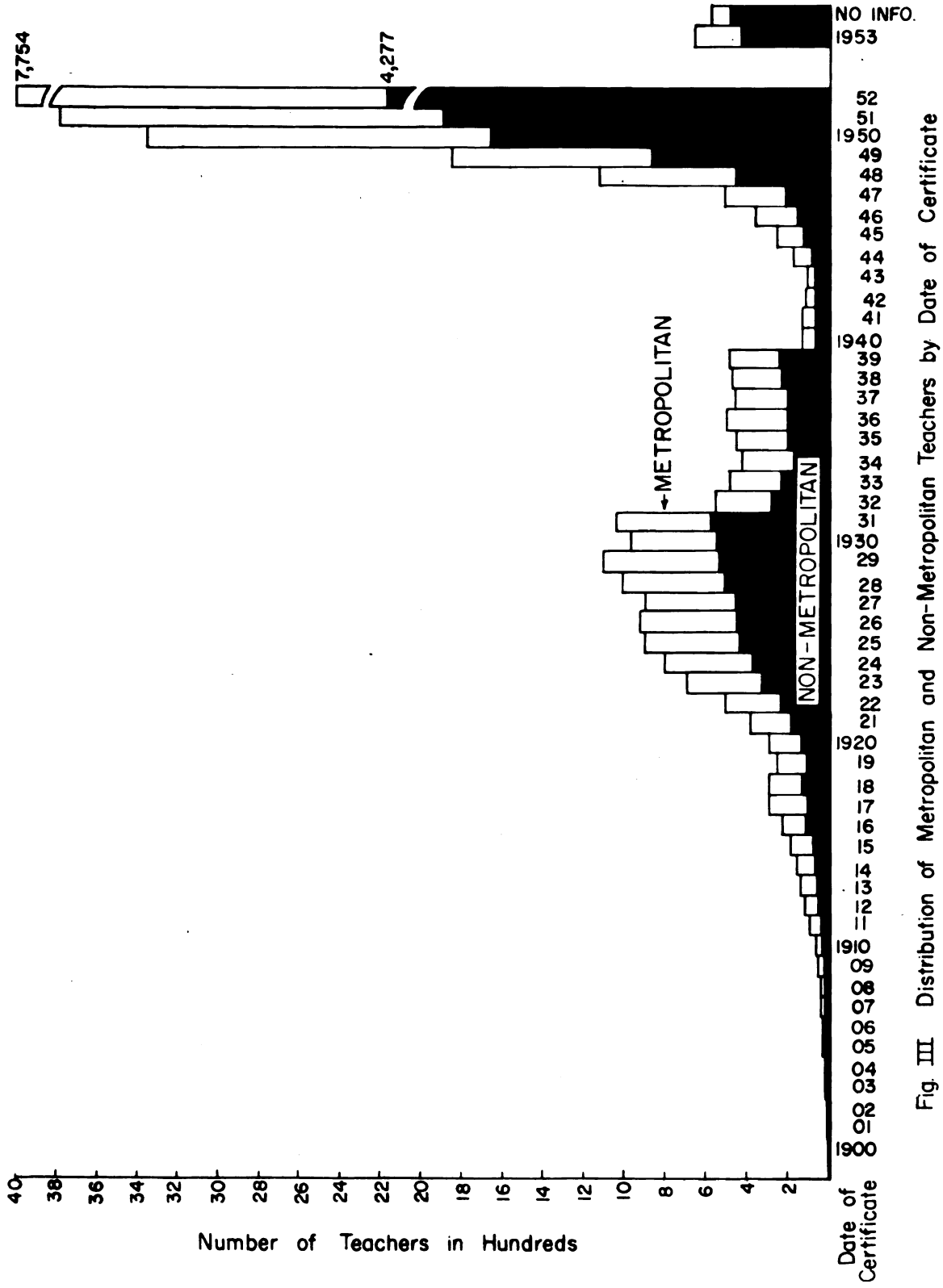
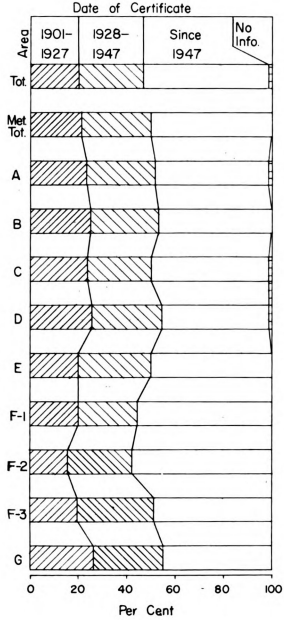


Fig. III Distribution of Metropolitan and Non-Metropolitan Teachers by Date of Certificate

A number of distinct periods of years emerge from a comparative examination of the distributions of the Metropolitan and Non-metropolitan populations by single years. Of the teachers certified in each year from 1901 through 1913, the number employed in Non-metropolitan Areas was equal to orhigher than the number employed in Metropolitan Areas. This situation also obtains for the periods from 1930 through 1932, 1940 through 1943, and for the year 1952. The opposite situation, in which the number of teachers in Metropolitan Areas is equal to or higher than in Non-metropolitan Areas, holds true for the intervening periods of years. It seems safe to conclude that the teaching population of the Metropolitan Areas suffered the more drastic reductions of teachers during the stress periods of the depression and World War II. The higher number of Non-metropolitan, as compared to Metropolitan, teachers certified in 1952 is probably a reflection of disproportionate numbers of teachers holding renewable certificates in the two kinds of Areas.

Table 3 in the appendix shows the complete distributions of teachers in separate Economic Areas by dates of certificate. Table 4 in the appendix shows the per cent of teachers in each Economic Area who were certified in selected periods of years. Figure IV presents these data graphically showing the per cent of teachers in each Economic Area who were certified in each of three major periods of years. With the exception of Area 1, which has a very high percentage of teachers certified before 1928 and a correspondingly low percentage of teachers certified since 1947, variations among the Economic Areas are not great. The following general conclusions may be drawn from these results:



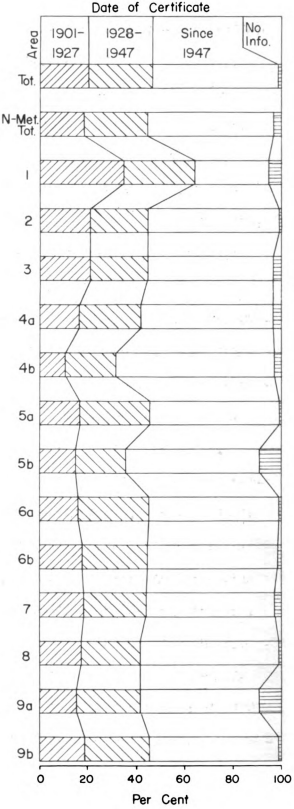


Fig. IV. Distribution of Teachers in each Economic Area by Date of Certificate.

1. The distribution of teachers in Metropolitan Areas includes a slightly higher percentage of teachers certified before 1928 and before 1948 than does the distribution of all teachers.

2. A comparison of the distributions of separate Metropolitan Areas to the distribution of all teachers shows that in every Metropolitan Area: (a) the percentage of teachers certified before 1928 is about equal to or higher than the percentage for the corresponding group in the distribution of all teachers, except in Area F2; (b) the percentage of teachers certified in the peried from 1928 through 1947 is higher than in the total distribution, except in Area F1; and, (c) the percentage of teachers certified since 1947 is lower than in the total distribution, except in Areas F1 and F2.

3. The total Non-metropolitan population includes a slightly lower percentage of teachers certified before 1928 and before 1948 than does the distribution of all teachers.

4. A comparison of the distributions of the separate Non-metropolitan Areas to the distribution of all teachers shows that in every Non-metropolitan Area: (a) the percentage of teachers certified before 1928 is lower than in the total distribution, except in Areas 1, 2 and 3; (b) the percentage of teachers certified in the period from 1928 through 1947 is equal to or lower than the percentage for the corresponding group in the distribution of all teachers, except in Areas 1, 5a, and 6a; and, (c) the percentage of teachers certified since 1947 is higher than in the total distribution, except in Areas 1 and 9a.

5. The number of teachers for whom date of certificate was not available amounted to less than 2% of the population in every Metropolitan

Area and less than about 4% of the population of every Non-metropolitan Area, except Areas 5b and 9a, data having been unavailable for about 9% of the teachers of each of these Areas.

Types of Certificate

As mentioned in the discussion of the coding of teachers by date of certificate, there were some cases in which the date given for issuance of a Life certificate was subsequent to the time in which Life certificates were legally awarded. In such cases, it was assumed that the date reported was correct, but that it referred to a certificate received subsequent to the Life recorded. Such mis-classifications of types of certificate were found to represent about 1% of the total teaching population. In cases where more than one certificate was reported for a teacher, the certificate presently in force was coded. Table 8 shows the number and per cent of teachers who held each type of certificate.

TABLE 8

DISTRIBUTION OF TEACHERS BY TYPE OF CERTIFICATE*

Type of Certificate	N	%
Any Life	15,501	43.1
Elementary Provisional	4,157	11.6
Elementary Permanent	1,462	4.1
Secondary Provisional	6,113	17.0
Secondary Permanent	2,122	5.9
Junior College Permanent	64	.2
State Board Special	3,971	11.0
County Limited and renewal	419	1.2
State Limited and renewal	1,966	5.5
No Information	160	.4

*Adapted from Sub-committee on Teacher Education Report, Part II, Table 6, pg. 14.

Table 9 shows the number and per cent of the teachers holding each type of certificate who were located in Metropolitan and Non-metropolitan Areas.

TABLE 9

NUMBER AND PER CENT OF TEACHERS HOLDING EACH TYPE OF CERTIFICATE WHO WERE LOCATED IN METROPOLITAN AND NON-METROPOLITAN AREAS

Type of Certificate	Metropolitan		Non-metropolitan		Total
	N	%	N	%	
Any Life	7,934	51.2	7,567	48.8	15,501
Elementary Provisional	2,679	64.4	1,478	35.6	4,157
Elementary Permanent	956	65.4	506	34.6	1,462
Secondary Provisional	2,824	46.2	3,289	53.8	6,113
Secondary Permanent	1,125	53.0	997	47.0	2,122
Junior College Permanent	38	59.4	26	40.6	64
State Board Special	1,584	39.9	2,387	60.1	3,971
County Limited and Renewal	28	6.7	391	93.3	419
State Limited and Renewal	582	29.6	1,384	70.4	1,966
No Information	78	48.8	82	51.2	160
Total	17,828	49.6	18,107	50.4	35,935

This table indicates that, compared to the total distribution, higher percentages of teachers holding Life, Elementary Provisional, and all types of permanent certificates were employed in Metropolitan Areas. Of the teachers holding the remaining types of certificates, percentages employed in Non-metropolitan Areas were higher than in the distribution of all teachers.

Tables 5 and 6 in the appendix show the numerical and percentage distributions of teachers in separate Economic Areas by types of certificate. For the purpose of analyzing these results and presenting them graphically, types of certificates were classified into three groups similar to the categories used in the previous study:

I. All Life certificates

> Teachers of Group I were certified previous to 1940 under laws requiring from two years of college training to the Bachelor's degree. The number of teachers included in this group will diminish yearly and within approximately thirty years all teachers of this group will have retired from teaching (15:36).

II. All provisional and permanent certificates

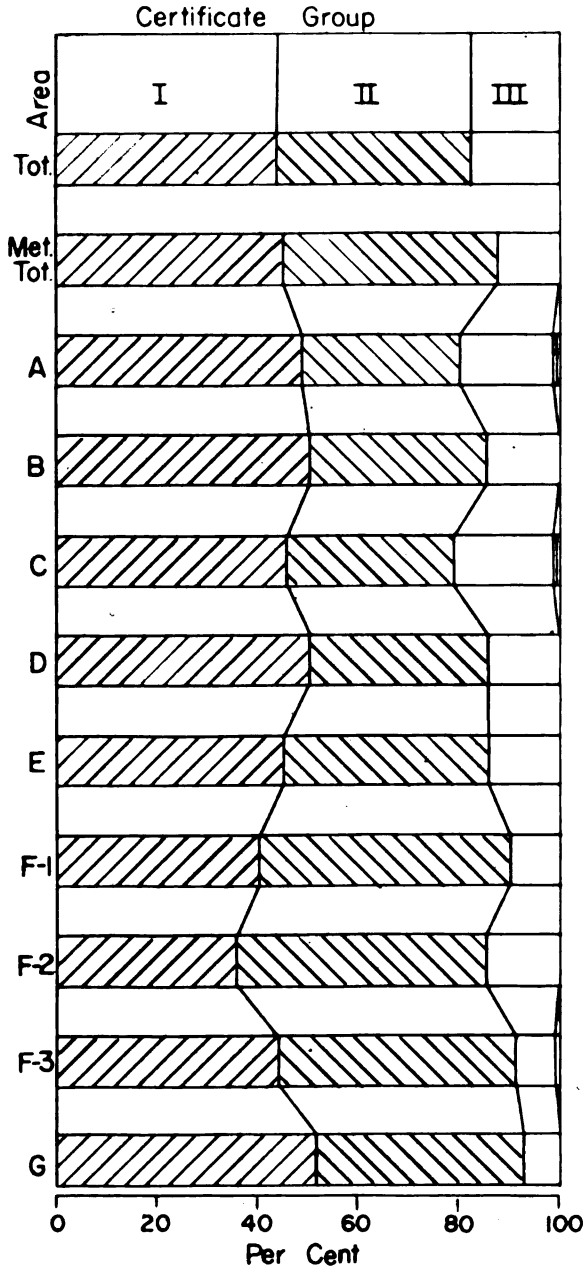
> Teachers in Group II are those who are fully qualified under current certification law. As a minimum, holders of these certificates must have earned a Bachelor's degree from an institution approved for teacher training (15:37).

III. All Limited and special certificates

> Certificates in Group III are, in general, issued to persons with less than four years of college training, are limited in use and, in the case of Special certificates, are awarded when legally qualified persons are not available (15:37).

Figure V shows the per cent of teachers in each Economic Area who were included in each of the certificate groups described above. The following general conclusions may be drawn from these results:

1. A comparison of the distribution of the total Metropolitan population to the distribution of all teachers shows that the percentages of Metropolitan teachers in certificate Groups I and II are higher than the percentages for the corresponding Groups in the total distribution, while the percentage of teachers holding the sub-standard certificates of Group III is lower than in the total distribution.



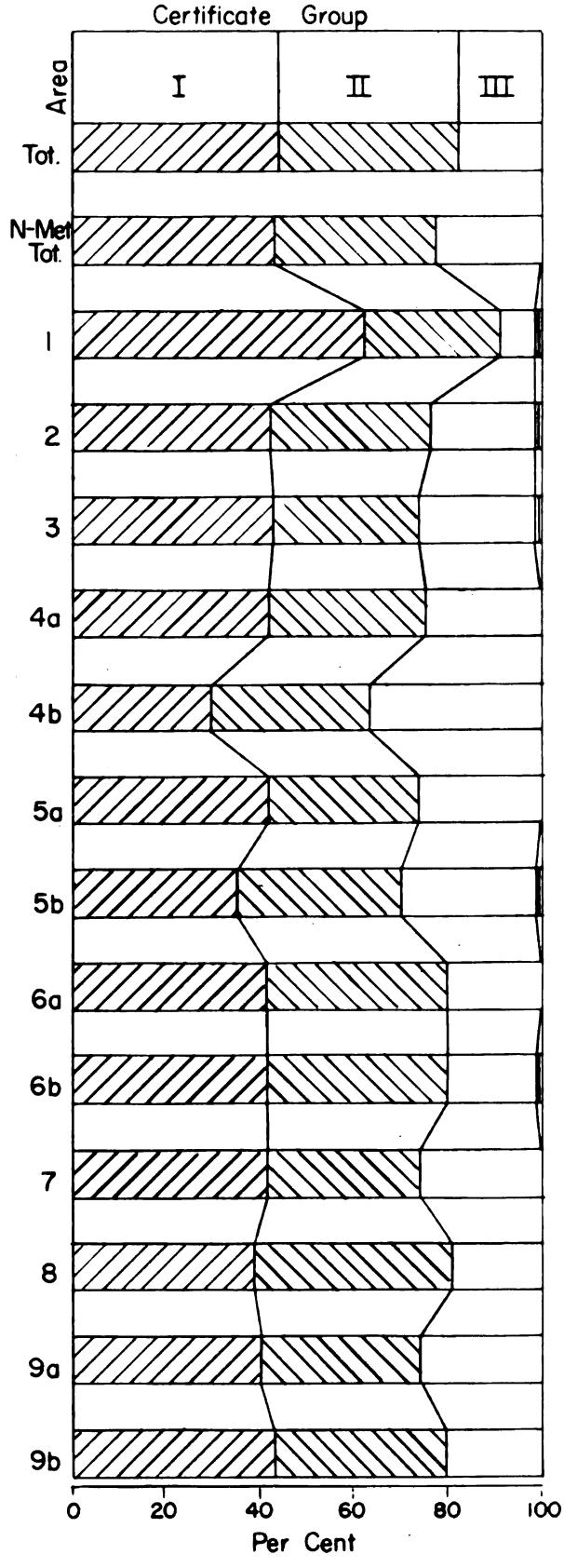


Fig. V. Distribution of Teachers in each Economic Area by Type of Certificate.

2. A comparison of the distributions of separate Metropolitan Areas to the distribution of all teachers show that in every Metropolitan Area: (a) the percentage of teachers holding Life certificates is higher than in the total distribution, except in Areas F1 and F2; (b) the percentage of teachers holding the provisional and permanent certificates of Group II is higher than in the total distribution, except for Areas A, B, C and D; and, (c) the percentage of teachers holding sub-standard certificates is lower than the corresponding percentage of all teachers, except in Areas A and C.

3. A comparison of the distribution of the total Non-metropolitan population to the distribution of all teachers shows that the percentages of teachers holding certificates in Groups I and II are lower than in the distribution of all teachers, while the percentage of those holding sub-standard certificates is higher than in the total distribution.

4. A comparison of the distributions of separate Non-metropolitan Areas to the distribution of all teachers shows that in every Non-metropolitan Area: (a) the percentage of teachers holding Life certificates is about equal to or lower than the percentage of this group in the total distribution, except in Area 1; (b) the percentage of teachers included in certificate Group II is lower than in the total group, except in Area 8; and, (c) the percentage of teachers holding sub-standard certificates is higher than in the total distribution, except in Area 1.

5. There were very few teachers for whom type of certificate held was not available, amounting to less than 1% of the teachers of every Metropolitan Area and less than 1.2% of the teachers of every Non-metropolitan Area. The unavailability of data for the 146 rural teachers in

Area 6a results in a distorted distribution of types of certificates for this Area. It is likely that a very high percentage of these unrecorded teachers were teaching under sub-standard certificates.

III. ANALYSES OF TEACHER POPULATIONS BY FACTORS OF TRAINING AND TEACHING ASSIGNMENT

This chapter includes analyses of the teaching populations in terms of two factors of training, amount of training and institution where work was completed for certificate and in terms of teaching assignment.

Amount of Training

Coding of teachers by amount of training was done according to the following chart.

TABLE 10

CHART SHOWING METHOD OF CODING FOR AMOUNT OF TRAINING*

Classification	Years of Training	Semester Hours of Credit	Term Hours of Credit	Degree
1 year	0 - 1½	0 - 45	0 - 72	
2 years	1½ - 2½	46 - 75	73 - 120	
3 years	2½ - 3½	76 - 105	121 - 168	
4 years	3½ - 4½	106 - 135	169 - 216	Bachelor's
5 years	Over 4½	136 or more	217 or more	Master's Doctorate

*Adapted from Sub-committee on Teacher Education Report, Part II, P. 20.

According to this system of coding, it is apparent that it cannot be assumed that a person classified as having four years of training necessarily holds a Bachelor's degree. Any teacher

who was recorded as having a Bachelor's degree or a number of semester or term hours of credit amounting to between 3½ and 4½ years of training was classified under four years of training (15:20).

Table 11 shows the number and per cent of teachers having each number of years of training.

TABLE 11

DISTRIBUTION OF TEACHERS BY AMOUNT OF TRAINING*

	1 Year	2 Years	3 Years	4 Years	5 Years	No Info.
Number	661	2,703	3,183	20,458	7,570	1,360
Per cent	1.9	7.5	8.8	56.9	21.1	3.8

*Adapted from Sub-committee on Teacher Education Report, Part II, Table 9.1, p. 20.

Table 12 shows the division of teachers having each number of years of training by location in Metropolitan and Non-metropolitan Areas.

TABLE 12

NUMBER AND PER CENT OF TEACHERS HAVING EACH AMOUNT OF TRAINING WHO WERE LOCATED IN METROPOLITAN AND NON-METROPOLITAN AREAS

Amount of Training	Metropolitan		Non-metropolitan		Total
	N	%	N	%	
1 year	94	14.2	567	85.8	661
2 years	887	32.8	1,816	67.2	2,703
3 years	1,241	39.0	1,942	61.0	3,183
4 years	10,963	53.6	9,495	46.4	20,458
5 years	4,368	57.7	3,202	42.3	7,570
No information	275	20.2	1,085	79.8	1,360
Total	17,828	49.6	18,107	50.4	35,935

Table 12 shows that of the groups who had 1, 2 and 3 years of training, the percentages of teachers employed in Metropolitan Areas are lower than in the total distribution, while the percentages of teachers employed in Non-metropolitan Areas are higher than in the total distribution. The reverse situation obtains for groups of teachers having 4 and 5 years of training. It is further interesting to note that the lower the amount of training, the higher the percentage of the group who were employed in Non-metropolitan Areas. Almost 80% of the teachers for whom amount of training was not available were employed in Non-metropolitan Areas.

Table 7 in the appendix shows the complete distributions of teachers in each Economic Area by amount of training and gives the average amount of training for the teachers of each Area. The following caution applies to the interpretation of average amounts of training:

> It should be recalled that in the coding of amount of training, any person having $3\frac{1}{2}$ to $4\frac{1}{2}$ years of college was classified as having four years of training. It would be most correct to consider the averages discussed here as the mid-points of a range; i.e., an average of 4.2 is best interpreted as an estimate falling in the range from 3.7 to 4.7 years (15:37).

The average amount of training for all teachers was found to be 3.91 years, while the average for the total of Metropolitan teachers was 4.06 and the average for the total of Non-metropolitan teachers was 3.76. It may be observed from Table 7 in the appendix that the average amounts of training for teachers of separate Metropolitan Areas range from 3.78 to 4.21, the average for every Metropolitan Area being higher than the average for all teachers except for Areas A and

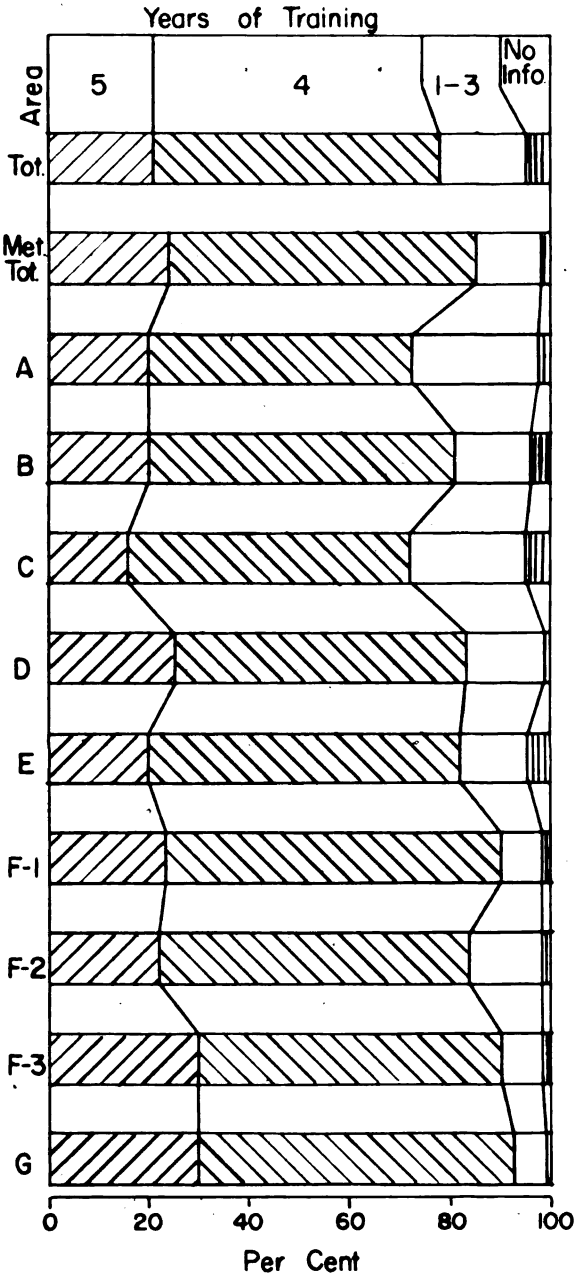
C. Average amounts of training for teachers of Non-metropolitan Areas range from 3.46 to 4.19, the averages being lower than the average for all teachers for every Non-metropolitan Area except Areas 6a and 8.

Figure VI shows the per cent of teachers in each Economic Area included in the groups having 1, 2 and 3 years, 4 years and 5 years of training. The following general conclusions may be drawn from these results:

1. A comparison of the distribution of the total Metropolitan population to the distribution of all teachers shows that the percentages of Metropolitan teachers having 4 and 5 years of training are higher than the percentages of the corresponding groups in the distribution of all teachers.

2. A comparison of the distributions of teachers in separate Economic Areas to the distribution of all teachers shows that in every Metropolitan Area: (a) the percentage of teachers having 1, 2 or 3 years of training is lower than in the total distribution, except in Areas A and C; (b) the percentage of teachers having 4 years of training is higher than the percentage of the corresponding group in the distribution of all teachers, except in Area A; and, (c) the percentage of teachers having 5 years of training is higher than in the total distribution, except in Areas A, C and E.

3. A comparison of the distribution of the total teachers employed in Non-metropolitan Areas to the distribution of all teachers shows that the percentages of Non-metropolitan teachers having 4 and 5 years of training is lower than in the total distribution and the



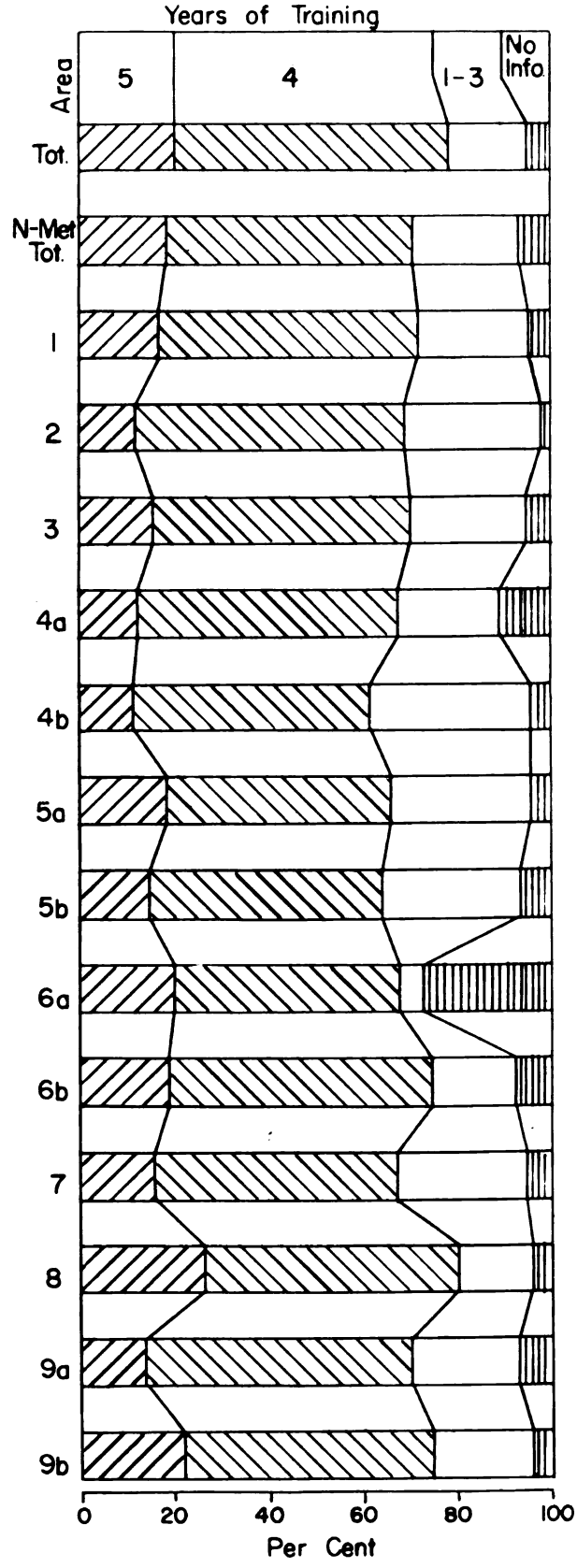


Fig. VI. Distribution of Teachers in each Economic Area by Amount of Training.

percentage of Non-metropolitan teachers having 1, 2 or 3 years of training is higher than for the corresponding group in the distribution of all teachers.

4. A comparison of the distributions of separate Non-metropolitan populations to the distribution of all teachers shows that in every Non-metropolitan Area: (a) the percentage of teachers having 1, 2 or 3 years of training is lower than in the total distribution, except in Areas 6a and 8; (b) the percentage of teachers having 4 years of training is lower than in the total distribution; and, (c) the percentage of teachers having 5 years of training is lower than the percentage for the corresponding group in the total distribution, except in Areas 8 and 9b.

5. The number of teachers for whom information was not available for the item of amount of training amounted to less than 4.3% of the population of every Metropolitan Area and less than 7.7% of the population of every Non-metropolitan Area, except Areas 4a and 6a; information having been unavailable for about 11% and 28% respectively of the teachers of these two Areas. The distributions and average amounts of training for teachers in Areas 6a and 4a must be looked upon with caution. Since data were least available for rural teachers, and it is known that the average amount of training for rural teachers is well below the average for all teachers (15:39), distributions by amount of training in Areas having higher percentages of teachers unaccounted for, would tend to show spuriously high percentages of teachers with higher amounts of training. This caution applies doubly to Area 6a, from which the 146 rural teachers of Allegan County are missing.

Institution where Work was Completed for Certificate

In coding teachers by the institution at which work was completed for a certificate, it was found that in a number of cases two or more institutions were recorded for a teacher. In such cases it was almost always possible to determine at which of these institutions work had been completed for the certificate. For example; (a) if two or more Michigan institutions were listed, only one of which is included among the 23 colleges approved for teacher training, the approved institution was coded; (b) If a teacher was listed as having a Life certificate, a number of years of experience and as having attended two institutions, one of which recently awarded the teacher an advanced degree, the institution attended earlier was coded, since the earning of an advanced degree was not accompanied by a change in certification.

Of the institutions in Michigan, only the 23 approved colleges and the county normals were given individual code numbers. All other Michigan institutions were coded as "other Michigan college." In cases of teachers trained in other states, the state was coded rather than the specific institution.

For the purpose of analyzing the distributions of teachers on this item, institutions were classified into four types: (a) all institutions located outside of Michigan; (b) state-supported colleges and universities in Michigan approved for teacher training; (c) private colleges and universities in Michigan; and, (d) county normals in Michigan. In this classification, Wayne University was included with the state-supported institutions, since it derives partial support from state

funds and since no separate category was established for municipal colleges. The table in the appendix showing distributions for separate Economic Areas includes complete results for each state, including a category of those teachers trained outside of the United States, and for each state-supported and private institution approved for teacher training in Michigan. Since the number of teachers in the total group who were trained at the eleven county normals was very small, results for this type of institution were lumped together.

Table 13 presents a partial breakdown of the distribution of teachers by training institution, showing the number and per cent of teachers trained at each of the four major types of institutions and at each of the state-supported institutions.

TABLE 13

DISTRIBUTION OF TEACHERS BY INSTITUTION*

Institution	N			%		
Outside of Michigan			5,359			14.9
Michigan State Normal	6,286			17.5		
Western Michigan College	6,038			16.8		
Central Michigan College	4,730			13.2		
Northern Michigan College	1,998			5.6		
Michigan State College	2,595			7.2		
University of Michigan	2,141			5.9		
Wayne University	1,835			5.1		
Ferris Institute	264			.7		
Total state-supported		25,887			72.0	
Total private		2,942			8.2	
Total County normals		173			.5	
Total in Michigan			29,002			80.7
No Information			1,574			4.4
Total			35,935			100.0

*Adapted from Sub-committee on Teacher Education Report, Part II, Table 8.1, p. 16.

Table 14 shows the number and per cent of teachers trained at each type of institution who were employed in Metropolitan and Non-metropolitan Areas.

TABLE 14

NUMBER AND PER CENT OF TEACHERS FROM VARIOUS TYPES OF INSTITUTIONS WHO WERE EMPLOYED IN METROPOLITAN AND NON-METROPOLITAN AREAS

Type of Institution	Metropolitan		Non-metropolitan		Total
	N	%	N	%	
Outside of Michigan	2,792	52.1	2,567	47.9	5,359
State-supported	13,041	50.4	12,846	49.6	25,887
Private	1,592	54.1	1,350	45.9	2,942
County normal	16	9.2	157	90.8	173
Total in Michigan	14,649	50.5	14,353	49.5	29,002
No information	387	24.6	1,187	75.4	1,574
Total	17,828	49.6	18,107	50.4	35,935

Percentages of teachers trained at each of the four major types of institutions, except county normals, are higher among groups employed in Metropolitan Areas than in the total distribution. About three-fourths of the teachers for whom a training institution was not recorded were employed in Non-metropolitan Areas.

Table 8 in the appendix shows the complete numerical distribution of teachers in each Economic Area by training institution. Table 9 in the appendix shows the percentage of teachers in each Economic Area who were trained at each type of institution. The analysis of the relation-

ship between Economic Areas and training institutions revealed that location is a major factor in the distribution of teachers from a given institution in the various Areas of the state and, conversely, in the composition of a given Area in terms of proximity to the various institutions approved for teacher training and to the surrounding states.

Figure VII shows the per cent of teachers in each Area who were trained at each type of institution. In general, the following conclusions may be drawn from these results:

1. A comparison of the distribution of the total Metropolitan population to the distribution of all teachers shows that the percentage of Metropolitan teachers trained at each type of institution, except county normals, is slightly higher than the percentages of the corresponding groups in the distribution of all teachers.

2. A comparison of the distribution of separate Metropolitan Areas to the distribution of all teachers shows that in every Metropolitan Area: (a) the percentage of teachers trained outside of Michigan is about equal to or higher than in the total distribution, except for Areas B, E, F2 and G; (b) the percentage of teachers trained at state-supported institutions is about equal to or higher than in the total distribution, except in Area B; (c) the percentage of teachers from private Michigan institutions is higher than in the total distribution, except for Areas A, E and F3; and, (d) the percentage of teachers trained at county normals is lower than in the distribution of all teachers, except for Area A.

3. A comparison of the distribution of the total Non-metropolitan population to the distribution of all teachers shows that the percentage

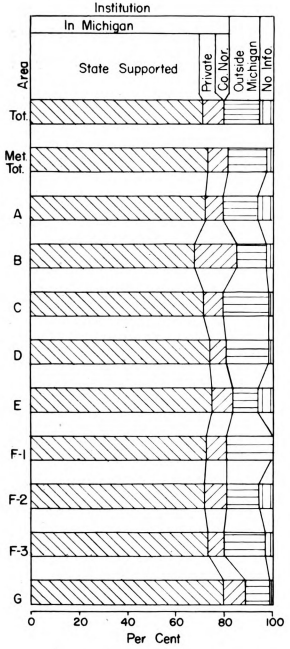
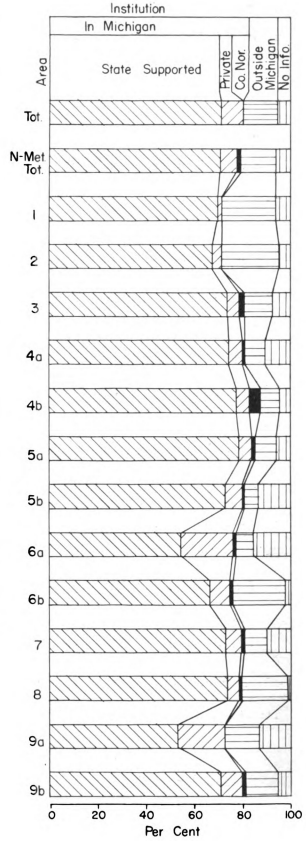


Fig. VII. Distribution of Teachers in each Economic Area by Institution at which Work was Completed for Certificate.



of Non-metropolitan teachers trained at each type of institution, except county normals, is slightly lower than the percentage in the distribution of all teachers.

4. A comparison of the distribution of separate Non-metropolitan populations to the distribution of all teachers shows that: (a) the percentage of teachers trained outside of Michigan is lower than the percentage of the corresponding group in the distribution of all teachers in every Area, except Areas 1, 2, 6b, 8 and 9b, all of which are Areas bordering on other states; (b) the percentages of teachers trained at state-supported institutions is lower than in the total distribution in Areas 1, 2, 6a, 6b, 9a and 9b, and higher than in the total distribution in the remaining Non-metropolitan Areas; (c) the percentage of teachers trained at private Michigan colleges is lower than for all teachers in every Non-metropolitan Area, except Areas 6a, 9a, and 9b; and, (d) the percentage of teachers trained at county normals is about equal to or higher than in the total distribution in every Area, except Areas 1, 2 and 9a.

5. The number of teachers for whom information was unavailable for this item amounted to less than 5.4% of each of the Metropolitan populations and to more than 5.4% of each of the Non-metropolitan populations, except those of Areas 2, 4b, 6b, 8 and 9b. The numbers of teachers for whom no information was available amounted to from 5.5 to 10% of the populations of Areas 1, 3, 5a and 7 and from 10 to 14% of the populations of Areas 4a, 5b, 6a and 9a. Distributions of teachers by institution must be viewed with some caution for Areas included in these latter groups.

Table 9 shows that more than half of the teachers of each Economic Area were trained at state-supported institutions. A closer examination of the distribution in each Economic Area of teachers from the various state-supported institutions seems warranted. Table 10 in the appendix shows the per cent of those teachers from state-supported institutions in each Economic Area who were trained at each of the state-supported institutions. The data of this table were based on at least 53% (as in Area 9a) and up to almost 80% (as in Area G) of the population of every Area. Figure VIII presents these data graphically. The variations shown in the distributions in Figure VIII offer a rather striking illustration of the operation of the previously mentioned factor of location. In every Area, except Area 7, the number of teachers from a single institution amounts to at least about one-third and up to as much as 86% of the total teachers trained at state-supported institutions. The number of teachers trained at a combination of two institutions amounts to over half of the teachers from state-supported institutions in every Area. A closer examination of the group in each Area who were trained at state-supported institutions shows that:

1. Teachers trained at Northern Michigan College represent 78% of the group in Area 1, the Area in which Northern is located, and 63% of the group in Area 2, the only adjacent Area.

2. Teachers trained at Central Michigan College represent 63% of the group in Area 5a, the Area in which Central is located, and from 41 to 63% of the groups in the adjacent or near-by Areas, 3, 4a, 4b, and A.

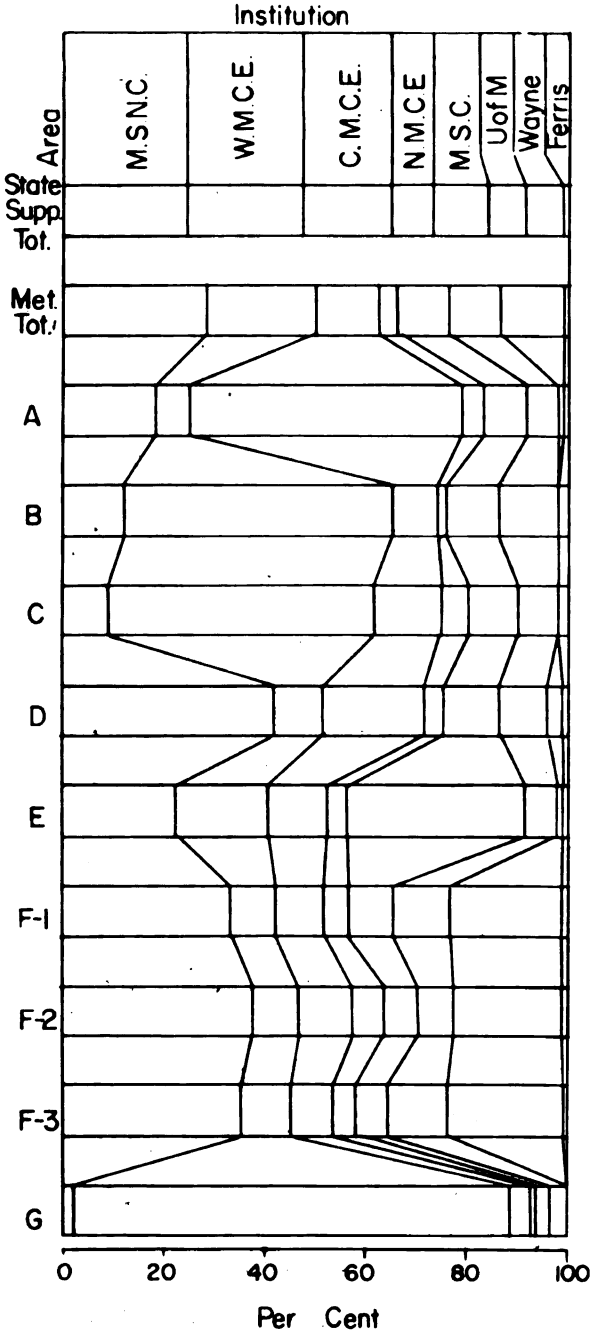
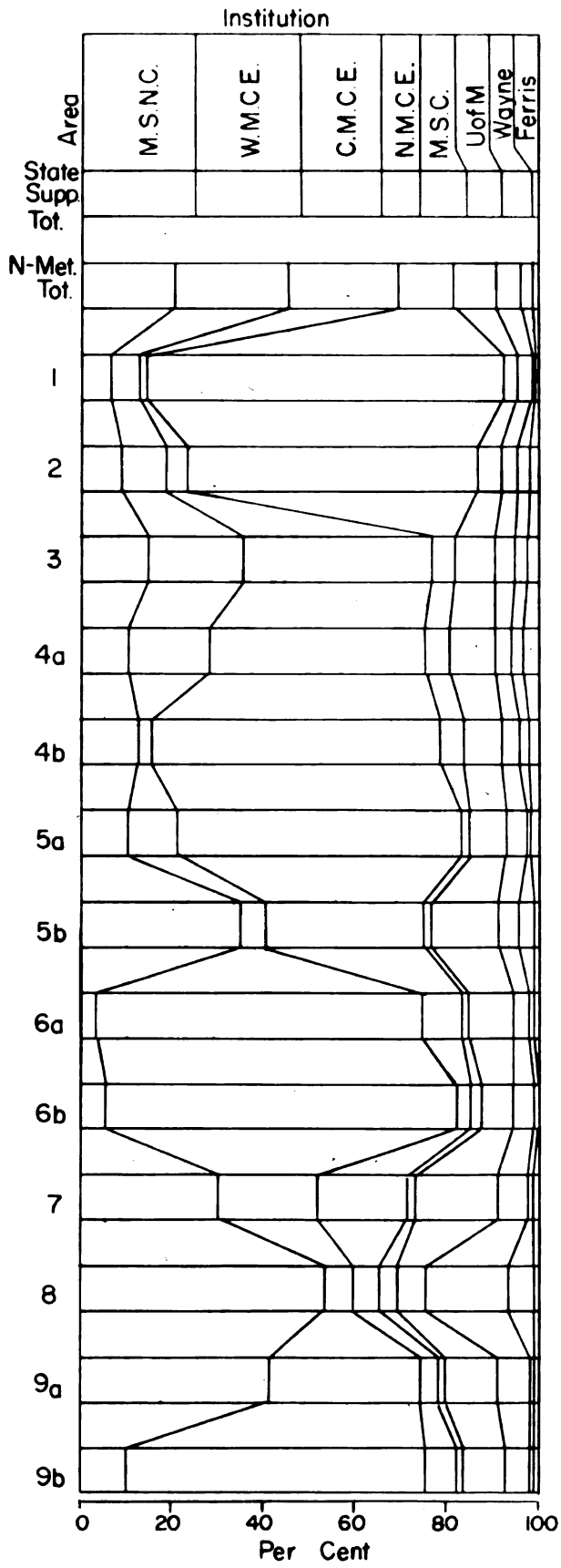


Fig. VIII. Distribution of those Teachers in each Economic Area Trained at State-supported Institutions who completed Work for Certificates at each State-supported Institution.



3. Teachers trained at Western Michigan College amount to 86% of the group in Area G, the Area in which Western is located, and from 53 to 76% of the groups in the surrounding or near-by Areas, 6a, 6b, 9b, B and C.

4. Teachers trained at Michigan Normal College and the University of Michigan represent 53 and 19% respectively of the group in Area 8, the Area in which both of these institutions are located.

5. Teachers trained at Michigan State College amount to 35% of the group in Area E, the Area in which Michigan State is located, while another 22% of the group in this Area were trained at Michigan Normal, located in an adjacent Area.

6. Teachers trained at Wayne University represent 23% of the group in Area F3 where Wayne is located, and about 22% of the groups in each of the two adjacent Areas, F1 and F2, while teachers from the nearby Michigan Normal amount to another 33 to 38% of the groups in each of these three F Areas.

7. The relatively small number of teachers trained at Ferris Institute amounts to 3.5% of the group in Area 4a where Ferris is located, and smaller percentages of the groups in other Areas.

8. About 35% of the group in Area 5b were trained at each of two institutions, Michigan Normal and Central.

9. Of the group in Area 9a about 41% were trained at Michigan Normal and about 33% at Western, both located in adjacent Areas.

10. Of the group in Area D, about 41% were trained at Michigan Normal and about 21% at Central Michigan College.

11. The group in Area 7 displays the most varied pattern, having 18% or more of the group from each of four institutions, Michigan Normal, Western, Central and Michigan State.

Teaching Assignment

There were certain difficulties involved in coding teachers by teaching assignment. According to the directions given on the Personnel Forms, persons teaching grades 9 to 12 were to be classified by subject taught and persons teaching in kindergarten through 8th, by grade taught. School districts of Michigan are organized according to several different plans and in many school districts, especially the larger ones, persons teaching above the 6th grade were recorded by subjects rather than by grades. As a result, the data for the junior high school level could not be classified separately from both the elementary and secondary levels. Some of these teachers were classified as teaching 7th, 8th and 9th grades and the remainder were included among those teaching secondary subjects. This same situation was true of persons teaching in public junior colleges, most of whom were classified by subject and the remainder by level. Persons teaching secondary subjects in adult education programs were classified by subject..

Secondary subjects were coded by subject fields: for example, chemistry, physics, science, biology, etc., were classified in the category "science." Many teachers were coded as teaching two subject fields, but in cases of persons teaching subjects in more than two fields, the person was coded as teaching the combination of the two fields in which

most subjects were taught.

At the elementary level a teacher could be coded as teaching a single grade, a combination of two grades or a grade and special subject like music, art or physical education. If more than two assignments were listed, the teacher was included in the category of "elementary, non-specified." Teachers teaching all grades in a one-room school were the exceptions to this procedure. These teachers were classified as teaching "kindergarten through 6th" or "kindergarten through 8th." Some school districts recorded all elementary teachers by level rather than grade and these persons were included in the "elementary, non-specified" classification.

The administrative classifications include persons who held these positions full-time as well as those who held an administrative position and taught a grade or subject part-time. These categories also include persons who were listed as assistants in these positions.

Personnel classified in the special education categories were those for whom the major assignment involved working with individuals or groups presenting special problems. For example, a person whose work was specifically the counseling of individual students was classified as "counselor," while a person teaching secondary students in courses having guidance purposes was classified under "guidance."

In the tables appearing in the appendix the distributions of teachers by teaching assignment have been presented in two forms: the detailed results including combinations of subjects; and, a summarized form in which persons teaching combinations of subjects or grades were divided

and a part added to the totals of each of the grades or subjects taught. All combinations except that of "kindergarten through 8th" were simply divided in half; that is, of the number of persons teaching the combination of 1st and 2nd grades, half were assigned to the 1st grade total and half to the 2nd. In the case of persons teaching "kindergarten through 8th," seven-ninths were assigned to the "kindergarten through 6th" and one-ninth each to the 7th and 8th grade totals. This made possible an arbitrary division between the elementary level, designated as kindergarten through 6th, and the secondary level, designated as 7th through 14th. In this summary form, all administrative personnel have been grouped into one total and all special education personnel into another total.

Table 15 shows the number and per cent of teachers classified in each of the four major categories of teaching assignment.

TABLE 15

DISTRIBUTION OF TEACHERS BY TEACHING ASSIGNMENT*

Teaching Assignment Category	N	%
Administrative	2,997.0	8.3
Special Education	781.0	2.2
Elementary (K-6)	18,579.5	51.7
Secondary (7-14)	13,409.5	37.3
No information	168.0	.5
Total	35,935.0	100.0

*Adapted from Sub-committee on Teacher Education Report, Part II, Table 10, p. 21.

Table 16 shows the number and per cent of teachers in each major category of teaching assignment who were employed in Metropolitan and Non-metropolitan Areas.

TABLE 16

NUMBER AND PER CENT OF TEACHERS IN EACH CATEGORY OF TEACHING ASSIGNMENT WHO WERE EMPLOYED IN METROPOLITAN AND NON-METROPOLITAN AREAS

Teaching Assignment Category	Metropolitan		Non-metropolitan		Total
	N	%	N	%	
Administrative	1,518.0	50.7	1,479.0	49.3	2,997.0
Special Education	544.0	69.7	237.0	30.3	781.0
Elementary (K-6)	9,135.8	49.2	9,443.7	50.8	18,579.5
Secondary (7-14)	6,559.2	48.9	6,850.3	51.1	13,409.5
No information	71.0	42.3	97.0	57.7	168.0
Total	17,828.0	49.6	18,107.0	50.4	35,935.0

The distribution of teachers in the administrative, elementary and secondary categories differ very slightly from the distribution of the total group, the percentage of administrative personnel being slightly higher in the Metropolitan population, while the percentages of elementary and secondary personnel are slightly higher in the Non-metropolitan population. Compared to the total distribution, the percentage of special education personnel who were employed in the Metropolitan Areas is considerably higher than the percentage of teachers in this category who were employed in Non-metropolitan Areas. Of the relatively small number of teachers for whom teaching assignments were not available, about 58% were employed in Non-metropolitan Areas.

Table 11 in the appendix shows the complete distribution for each Economic Area by teaching assignment, including single and combination assignments. A summary of these data, combining full and part-time assignments for each Economic Area is presented in Table 12 of the appendix. The per cent of teachers in each Economic Area who were included in each major category of teaching assignment is shown in Table 13 in the appendix and in Figure IX. The patterns of distribution shown in Figure IX display fewer variations than those shown for most of the items examined thus far. The following general conclusions may be drawn from these results:

1. A comparison of the distribution of the total Metropolitan population to the distribution of all teachers shows that the percentages of the Metropolitan group classified in the administrative and special education categories are higher than in the total distribution, while the percentages of teachers classified in the elementary and secondary categories are lower than for the corresponding categories in the distribution of all teachers.

2. A comparison of the distributions of teachers in separate Metropolitan Areas to the distribution of all teachers shows that in every Metropolitan Area: (a) the percentage of administrative personnel is higher than in the total distribution, except in Areas A, C, D and G; (b) the percentage of special education personnel is about equal to or higher than the percentage of this group in the total distribution, except in Area C; (c) the percentage of elementary teachers is about equal to or lower than in the total distribution, except in Areas A, C and G; and (d)

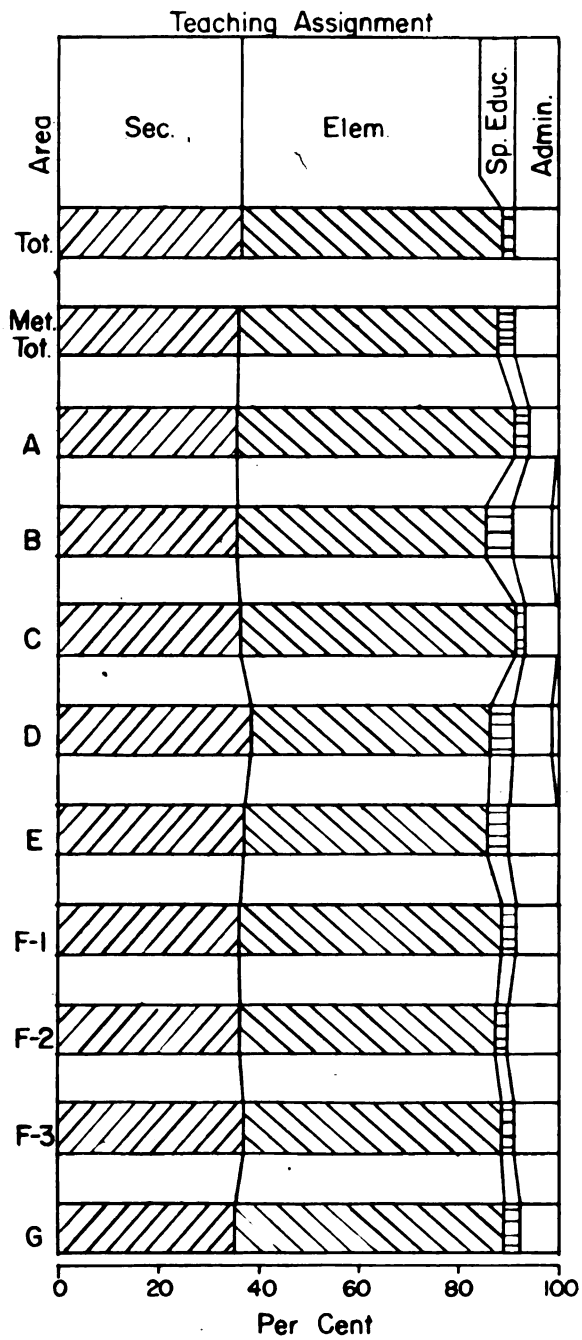
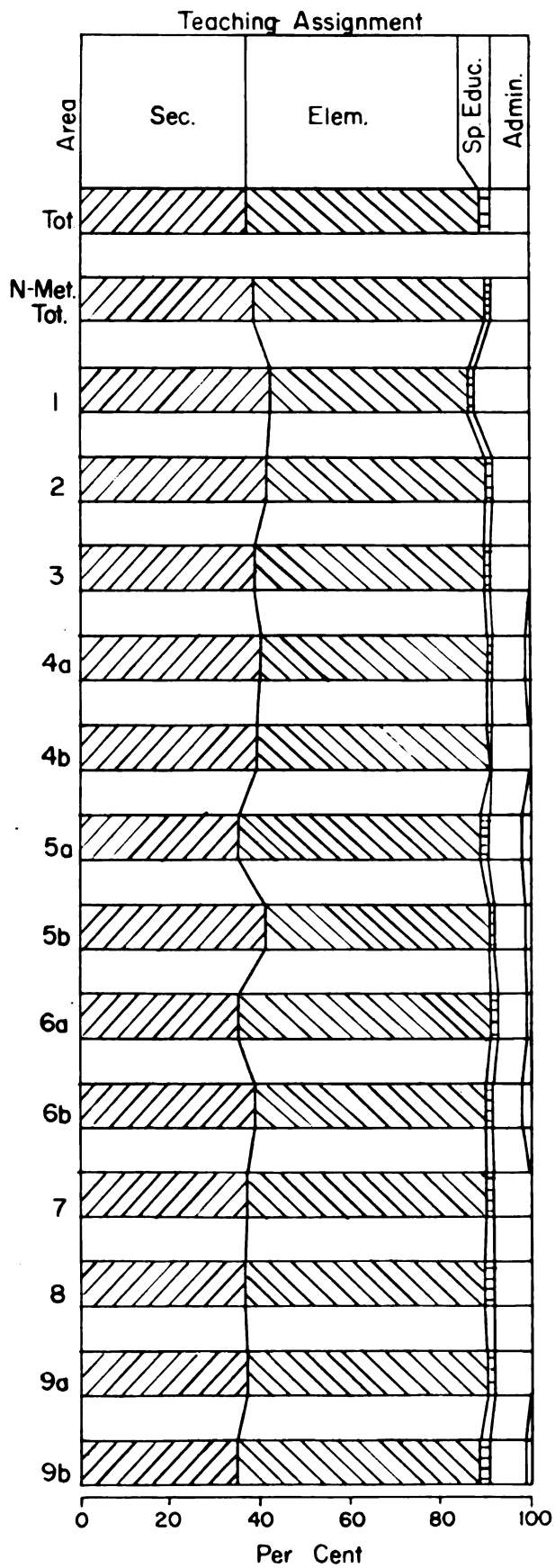


Fig. IX. Distribution of Teachers in each Economic Area by Teaching Assignment.



the percentage of secondary teachers is about equal to or lower than in the distribution of all teachers.

3. A comparison of the distribution of the total Non-metropolitan population to the distribution of all teachers shows that the percentages of the Non-metropolitan population included in the administrative and special education categories are lower than in the total distribution, while the percentages of elementary and secondary teachers are slightly higher than in the distribution of all teachers.

4. A comparison of the distributions of teachers in separate Non-metropolitan Areas to the distribution of all teachers shows that in every Non-metropolitan Area: (a) the percentage of administrative personnel is about equal to or lower than in the total distribution, except in Areas 1 and 3; (b) the percentage of special education personnel is lower than in the distribution of all teachers, except in Area 9b; (c) the percentage of elementary teachers is higher than in the total distribution, except in Areas 1, 2, 4a and 5b; and (d) the percentage of secondary teachers is higher than in the total distribution, except in Areas 5a, 6a, 7, 8, 9a and 9b.

5. The number of teachers for whom a teaching assignment was not available amounted to 2% or less of the population of every Area.

IV. ANALYSES OF THE TEACHER POPULATIONS BY FACTORS OF TEACHING EXPERIENCE

The present chapter includes analyses of the teaching populations in terms of the four items of information relating to teaching experience; total years of teaching, years of previous teaching in the present school, years of previous teaching in other schools and whether the teacher had taught the previous year.

The coding of all of these items, except total years of teaching, was relatively automatic and could be done directly from the original Personnel Report Forms. In most cases, total years of teaching was determined by the addition of the number of years taught in the present school and the number of years taught in other schools. On records for some school districts, especially rural districts, total years of teaching was reported instead of these two separate totals. This made it possible to obtain data for a higher percentage of teachers for total years of teaching, but reduced the percentages of teachers for whom data were available for years in the present school and years in other schools.

In Table 3 of the Introduction, it was shown that data were less complete for items of teaching experience than for any other items of data collected. While data were available for from 92.2 to 94.6% of the total group on all four of the items relating to teaching experience, as in the case of most of the items examined thus far, information was available for higher percentages of teachers in the Metropolitan popula-

tion than in the Non-metropolitan population for each of these items. A comparison of percentages of teachers for whom data were available for these items in the separate Economic Areas shows an even less proportionate distribution. In the case of each of the four items, information was unavailable for about 6 to 9% of the teachers in one or more of the Metropolitan Areas and for over 25% of the teachers in one or more of the Non-metropolitan Areas. This disproportionate distribution, as well as the effects of reduced percentages of available data upon the distributions of some Areas, creates difficulties in making comparisons between the various Areas. Therefore, some of the analyses presented in this chapter are based on adjusted results; that is, in a given analysis, the distributions of teachers in some or all of the Areas have been recalculated on the basis of known data only. If it could be assumed that the sample of teachers for whom data were available in each Area was representative of the total teaching population of the Area, these adjustments would in all likelihood yield highly accurate distributions. However, there is no way in which such an assumption can be supported and, in fact, it is probably not a valid assumption for the data under consideration. For example, in an analysis of the relationship of total years of teaching to date of certificate, it was found that of those teachers in the total group for whom total years of teaching was not available, about 60% had received certificates since 1947 (15:100). This suggests strongly that the group of teachers for whom total teaching experience was not recorded includes a high percentage of relatively inexperienced teachers; that is, with less than five years of teaching. The usefulness of even this general conclusion is reduced, however,

when it is known that of all the teachers who received certificates since 1947, almost 40% had had more than four years of teaching experience (15:93). It may be concluded that the adjustment of data does not eliminate distortions in the distributions, but that it tends to minimize these distortions. The adjusted distributions will, of course, be least reliable for those Areas in which distributions were derived from the lowest percentages of known data, and whatever distortions remain are probably in the opposite direction than those for the unadjusted distributions.

Total Years of Teaching

Table 17 shows the number of teachers who had taught each number of years and the per cent of teachers who had taught 35 or more years and for each period of five years from 34 to 0 years of teaching.

TABLE 17

DISTRIBUTION OF TEACHERS BY TOTAL YEARS OF TEACHING*

Years of Teaching	N	%	Years of Teaching	N	%
54	1		24	685	
53	2		23	734	
52	2		22	652	9.6
51	1		21	678	
50	4		20	712	
49	4		19	795	
48	9		18	811	
47	12		17	807	11.3
46	10		16	819	
45	12	3.7	15	846	
44	35		14	848	
43	58		13	901	
42	67		12	943	12.5
41	68		11	894	
40	113		10	910	
39	116		9	927	
38	145		8	866	
37	198		7	859	13.0
36	219		6	946	
35	260		5	1,058	
34	277		4	1,331	
33	329		3	1,839	
32	354	5.2	2	2,393	30.5
31	391		1	2,504	
30	526		0	2,880	
29	539		No Info.	1,933	5.4
28	619				
27	636	8.8			
26	647		Total	35,935	100.0
25	710				

*Adapted from Sub-committee on Teacher Education Report, Part II, Table 13, p. 27.

Table 18 shows the number and per cent of the teachers who had taught each period of years who were employed in Metropolitan and Non-metropolitan Areas.

TABLE 18

NUMBER AND PER CENT OF TEACHERS WHO HAD TAUGHT SELECTED NUMBERS OF YEARS WHO WERE EMPLOYED IN METROPOLITAN AND NON-METROPOLITAN AREAS

Years of Teaching	Metropolitan		Non-metropolitan		Total
	N	%	N	%	
0 - 4	5,668	51.8	5,279	48.2	10,947
5 - 9	2,353	50.5	2,303	49.5	4,656
10 - 14	2,249	50.0	2,247	50.0	4,496
15 - 19	2,025	49.7	2,053	50.3	4,078
20 - 24	1,735	50.1	1,726	49.9	3,461
25 - 29	1,719	54.6	1,432	45.4	3,151
30 - 34	1,083	57.7	794	42.3	1,877
35 - 54	724	54.2	612	45.8	1,336
No info.	272	14.1	1,661	85.9	1,933
Total	17,828	49.6	18,107	50.4	35,935
Adjusted Total	17,556	51.6	16,446	48.4	34,002

Comparing the distributions for the various periods of years to the adjusted total distribution, it may be seen that higher percentages of teachers included in the groups who had taught over 24 years were employed in Metropolitan Areas, and that higher percentages of those teachers included in periods from 5 through 24 years of teaching were employed in Non-metropolitan Areas. The distribution of teachers in the group who had taught less than 5 years, is about the same as for the distribution found in the adjusted total population.

An examination of Figure X permits a more detailed comparison of the distributions of the Metropolitan and Non-metropolitan populations by years of teaching experience. Except for minor variations, years of teaching tend to fall into several distinct periods. On the basis of the adjusted totals, it was found that, of the teachers who had taught over 50 years and from 25 to 42 years, percentages employed in Metropolitan Areas are higher than in the total distribution. Correspondingly, of the teachers who had taught 42 through 52 years and 7 through 24 years, percentages employed in Non-metropolitan Areas were higher than in the total distribution. Of those teachers who had taught less than 7 years, the division between Metropolitan and Non-metropolitan Areas is not as distinct.

It seems safe to assume that for most teachers, total years of teaching means continuous teaching; that is, a teacher who has taught 15 years began teaching about 15 years ago. On the basis of this assumption, it appears that, of the teachers who began teaching before 1902, from 1911 through 1927 and for most years since 1945, percentages employed in Metropolitan Areas are higher than in the total distribution. Correspondingly, of the teachers who started teaching from 1902 through 1910 and from 1928 through 1945, percentages employed in Non-metropolitan Areas are higher than in the total distribution. These relative distributions tend to support a conclusion drawn earlier, that the Metropolitan Areas were affected more adversely during the stress periods of the depression and World War II than the Non-metropolitan Areas.

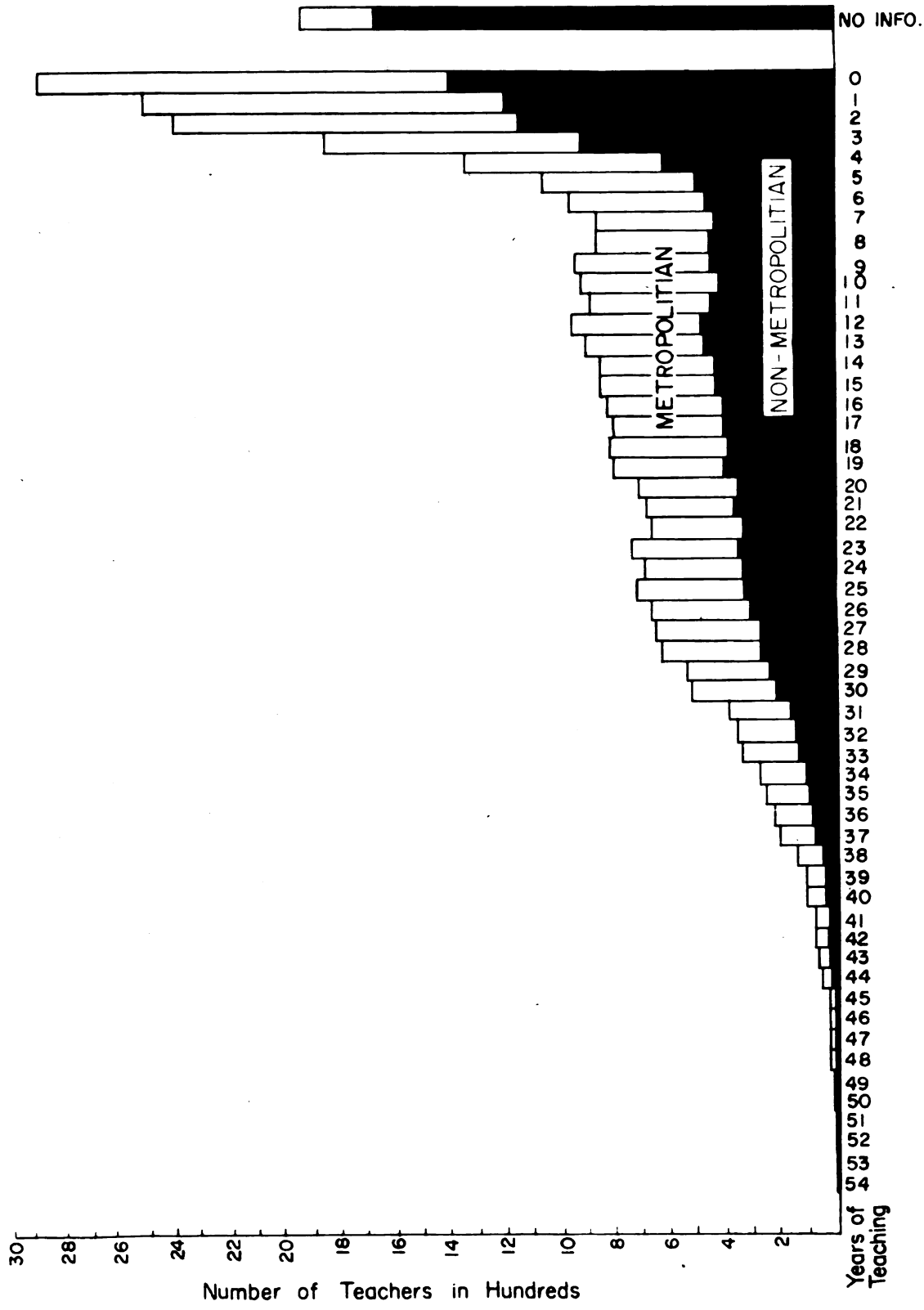
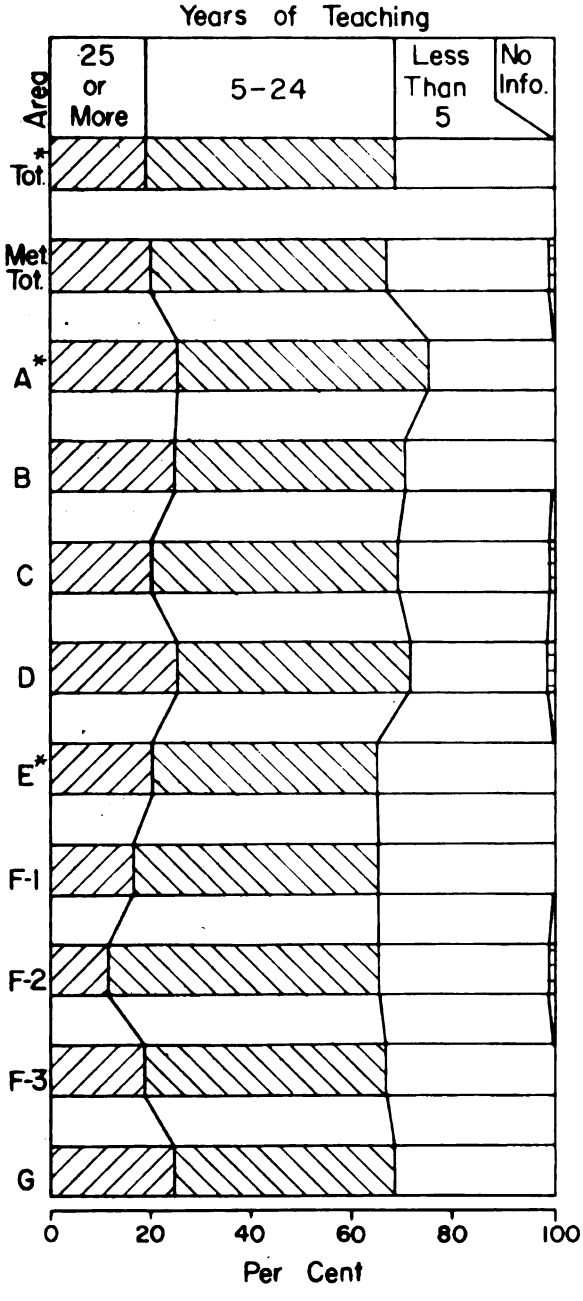


Fig. X Distribution of Metropolitain and Non-Metropolitain Teachers by Total Years of Teaching

Table 14 in the Appendix shows the complete distribution of the teachers of each Economic Area by total years of teaching. Table 15 in the appendix shows the per cent of teachers in each Economic Area who had taught selected numbers of years. Table 15 reveals that in two of the nine Metropolitan Areas and in nine of the thirteen Non-metropolitan Areas, data were unavailable for 4% or more of the populations. In Figure XI, which shows the per cent of teachers in each Economic Area who had taught 25 years or more, 5 to 25 years, and less than 5 years, the distributions are based on adjusted data for all Areas in which data were unavailable for 4% or more of the teachers. The following general conclusions may be drawn from these results:

1. A comparison of the distribution of the total Metropolitan population to the distribution of all teachers, shows that the percentage of Metropolitan teachers who had taught 25 years or more is higher than in the total distribution, the percentage of teachers who had taught 5 to 25 years is lower than in the total distribution, and the percentage of Metropolitan teachers who had taught less than 5 years is about equal to the percentage of the corresponding group in the distribution of all teachers.

2. A comparison of the distributions of the teachers of separate Metropolitan Areas to the distribution of all teachers shows that: (a) the percentage of teachers who had taught 25 years or more is higher than in the total distribution in every Metropolitan Area, except Areas F1 and F2; (b) the percentage of teachers who had taught 5 to 25 years is lower than in the total distribution in every Metropolitan Area, except Area F2; and (c) the percentage of teachers who had taught less



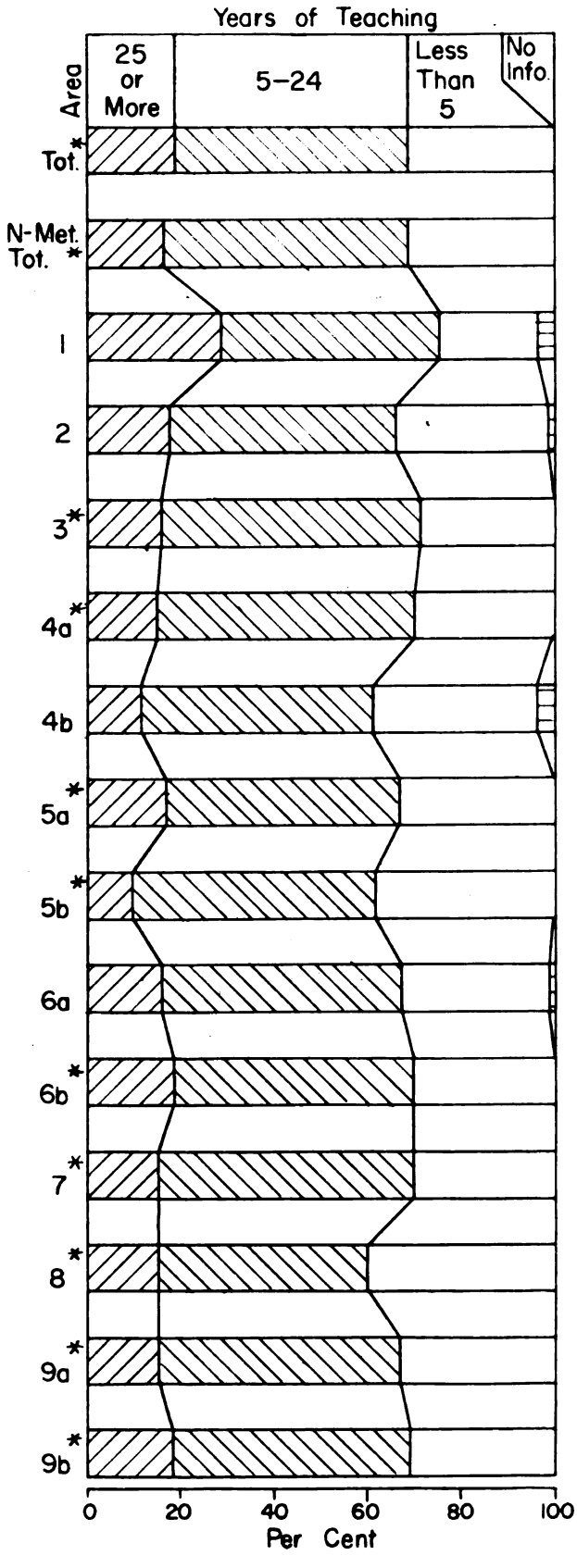


Fig. XI. Distribution of Teachers in Each Economic Area by Total Years of Teaching.

*Adjusted Data

than 5 years is lower than the percentage of the corresponding group in the distribution of all teachers in every Metropolitan Area, except Areas E, F1, F2, and F3.

3. A comparison of the distribution of the total Non-metropolitan population to the distribution of all teachers, shows that the percentage of Non-metropolitan teachers who had taught 25 or more years is lower than in the total distribution, the percentage of Non-metropolitan teachers who had taught 5 to 25 years is higher than in the total distribution, and the percentage who had taught less than 5 years is about equal to the percentage of that group found in the total distribution.

4. A comparison of the distribution of teachers of separate Non-metropolitan Areas to the distribution of all teachers shows that in every Non-metropolitan Area: (a) the percentage of teachers who had taught 25 years or more is about equal to or lower than in the total distribution, except in Area 1; (b) the percentage of teachers who had taught 5 to 25 years is higher than in the total distribution, except in Areas 1 and 8; and, (c) the percentage of teachers who had taught less than 5 years is about equal to or higher than for the corresponding group in the total distribution, except in Areas 1, 3, 4a, 6b, 7 and 9b.

Years of Teaching in the Present School

Table 19 shows the number of teachers who had taught each number of years in the present school and the per cent of teachers who had taught 35 or more years and for each period of five years from 0 to 35 years in the present school.

TABLE 19

DISTRIBUTION OF TEACHERS BY YEARS OF TEACHING IN THE PRESENT SCHOOL*

Years of Teaching	N	%	Years of Teaching	N	%
51	1		24	427	
50	2		23	439	
49	1		22	334	4.5
48	2		21	230	
47	6		20	178	
46	3		19	210	
45	6		18	315	
44	7	.8	17	331	4.3
43	7		16	330	
42	11		15	367	
41	20		14	319	
40	27		13	325	
39	30		12	370	6.7
38	33		11	510	
37	35		10	889	
36	45		9	1,056	
35	57		8	1,107	
34	78		7	1,416	19.3
33	132		6	1,588	
32	179	2.2	5	1,769	
31	194		4	2,012	
30	200		3	2,196	
29	256		2	2,927	50.7
28	304		1	4,427	
27	316	4.6	0	6,636	
26	355		No info.	2,512	6.9
25	408		Total	35,935	100.0

*Adapted from Sub-committee on Teacher Education Report, Part II, Table 14, p. 40.

Table 20 shows the number and per cent of the teachers who had taught for selected periods of years in the present school who were employed in Metropolitan and Non-metropolitan Areas.

TABLE 20

NUMBER AND PER CENT OF TEACHERS WHO HAD TAUGHT SELECTED NUMBERS OF YEARS IN THE PRESENT SCHOOL WHO WERE LOCATED IN METROPOLITAN AND NON-METROPOLITAN AREAS

Years of Teaching	Metropolitan		Non-metropolitan		Total
	N	%	N	%	
0 - 4	9,034	49.6	9,164	50.4	18,198
5 - 9	3,603	51.9	3,333	48.1	6,936
10 - 14	1,319	54.7	1,094	45.3	2,413
15 - 19	818	52.7	735	47.3	1,553
20 - 24	1,004	62.4	604	37.6	1,608
25 - 29	1,058	64.6	581	35.4	1,639
30 - 34	462	59.0	321	41.0	783
35 - 51	142	48.5	151	51.5	293
No info.	388	15.4	2,124	84.6	2,512
Total	17,828	49.6	18,107	50.4	35,935
Adjusted Total	17,440	52.2	15,983	47.8	33,423

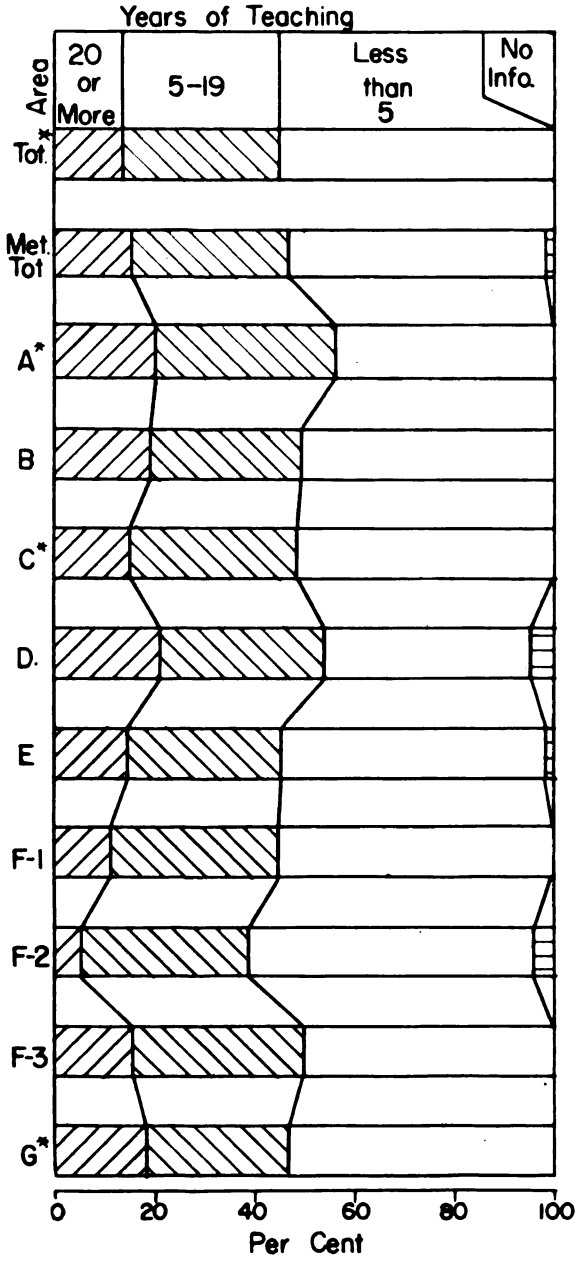
Comparing the distributions for the various periods of years to the adjusted total distribution, it may be seen that the percentages of Metropolitan teachers who had taught in the present school in the periods from 10 to 35 years are higher than in the total distribution, while the percentages of Non-metropolitan teachers who had taught in the present school in the periods of less than 5 years and over 34 years are higher than in the total distribution. The division of teachers who had taught in the period from 5 to 10 years is about the same as that found in the adjusted total distribution.

An examination of Figure XII permits a more detailed comparison of Metropolitan and Non-metropolitan distributions by number of years of teaching in the present school. Except for minor variations, these distributions display three distinct periods of years when compared to the adjusted total distribution. Of those teachers who had taught less than 9 and over 38 years in the present school the percentages employed in Non-metropolitan Areas are higher than in the total distribution. Of the teachers who had taught from 9 through 38 years in the present school, the percentages employed in Metropolitan Areas are higher than in the total distribution.

Table 16 in the appendix shows the complete distributions of the teachers in separate Economic Areas by years of teaching in the present school. Table 17 in the appendix shows the percentage of teachers in each Economic Area who had taught for selected periods of years in the present school. This table reveals that in three of the nine Metropolitan Areas and in all but one of the thirteen Non-metropolitan Areas, data were unavailable for 4% or more of the teachers. Figure XIII, which shows the per cent of teachers in each Economic Area who had taught in the present school for 20 or more years, 5 to 20 years and less than 5 years, is based on adjusted data for all Areas in which data were unavailable for 4% or more of the teachers. The following general conclusions may be drawn from these results:

1. A comparison of the distribution of teachers in the total Metropolitan population to the distribution of all teachers shows that the percentage of Metropolitan teachers who had taught 20 or more years in

Fig. XII Distribution of Metropolitan and Non-Metropolitan Teachers by Years of Teaching in the Present School.



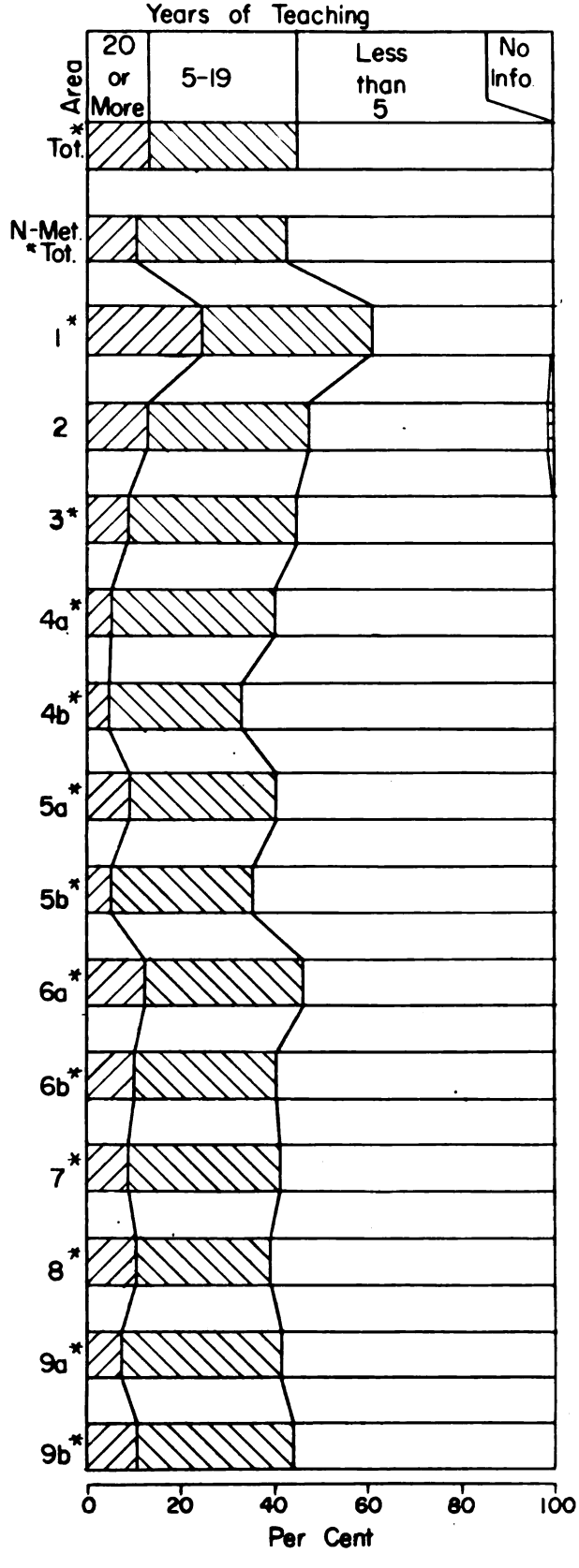


Fig. XIII. Distribution of Teachers in each Economic Area by Years of Teaching in the Present School.

*Adjusted Data

the present school is higher than in the total distribution, the percentage of teachers who had taught 5 to 19 years in the present school is about equal to the percentage of the corresponding group in the distribution of all teachers, and the percentage of Metropolitan teachers who had taught less than 5 years in the present school is lower than in the total distribution.

2. A comparison of the distributions of teachers in separate Metropolitan Areas to the distribution of all teachers shows that in every Metropolitan Area: (a) the percentage of teachers who had taught in the present school for 20 or more years is higher than in the total distribution, except in Areas F1 and F2; (b) the percentage of teachers who had taught 5 to 19 years in the present school is about equal to or lower than in the total distribution, except in Areas A, F2 and F3; and (c) the percentage of teachers who had taught in the present school for less than 5 years is lower than in the total distribution, except in Areas F1 and F2.

3. A comparison of the distribution of teachers in the total Non-metropolitan population to the distribution of all teachers shows that the percentage of Non-metropolitan teachers who had taught 20 or more years in the present school is lower than in the total distribution, the percentage who had taught 5 to 19 years in the present school is about equal to the percentage of that group in the distribution of all teachers, and the percentage of Non-metropolitan teachers who had taught less than 5 years is higher than in the distribution of all teachers.

4. A comparison of the distribution of teachers in separate Non-metropolitan Areas to the distribution of all teachers shows that in

every Non-metropolitan Area: (a) the percentage of teachers who had taught 20 years or more is about equal to or lower than in the total distribution, except in Area 1; (b) the percentage of teachers who had taught 5 to 19 years in the present school is about equal to or higher than in the total distribution, except in Areas 4b, 5a, 5b, 6b and 8; and, (c) the percentage of teachers who had taught in the present school for less than 5 years is higher than in the total distribution, except in Areas 1, 2 and 6a.

Years of Teaching in Other Schools

Table 21 shows the number of teachers who had taught each number of years in other schools and the per cent of teachers who had taught in other schools 35 or more years and for each period of 5 years from 0 to 35.

TABLE 21

DISTRIBUTION OF TEACHERS BY YEARS OF TEACHING IN OTHER SCHOOLS*

Years of Teaching	N	%	Years of Teaching	N	%
46	2		24	172	
45	-		23	213	
44	3		22	218	3.3
43	3		21	257	
42	2		20	328	
41	2		19	332	
40	3	.2	18	399	
39	9		17	436	6.2
38	3		16	469	
37	9		15	606	
36	6		14	632	
35	15		13	675	
34	19		12	797	11.0
33	31		11	798	
32	33	.5	10	1,065	
31	40		9	1,039	
30	65		8	1,148	
29	68		7	1,218	18.0
28	95		6	1,400	
27	106	1.6	5	1,661	
26	134		4	1,739	
25	158		3	2,206	
			2	2,545	51.4
			1	2,556	
			0	9,417	
			No info.	2,803	7.8
			Total	35,935	100.0

*Adapted from Sub-committee on Teacher Education Report, Part II, Table 15, p. 35.

Table 22 shows the number and per cent of the teachers who had taught for selected periods of years in other schools who were employed in Metropolitan and Non-metropolitan Areas.

TABLE 22

NUMBER AND PER CENT OF THE TEACHERS WHO HAD TAUGHT SELECTED NUMBERS OF YEARS IN OTHER SCHOOLS WHO WERE LOCATED IN METROPOLITAN AND NON-METROPOLITAN AREAS

Years in Teaching	Metropolitan		Non-metropolitan		Total
	N	%	N	%	
0 - 4	10,123	54.8	8,340	45.2	18,463
5 - 9	3,414	52.8	3,052	47.2	6,466
10 - 14	1,942	49.0	2,025	51.0	3,967
15 - 19	1,050	46.8	1,192	53.2	2,242
20 - 24	546	46.0	642	54.0	1,188
25 - 29	245	43.7	316	56.3	561
30 - 34	79	42.0	109	58.0	188
35 - 46	24	42.1	33	57.9	57
No info.	405	14.4	2,398	85.6	2,803
Total	17,828	49.6	18,107	50.4	35,935
Adjusted Total	17,423	52.6	15,709	47.4	33,132

Comparing the distributions for these various periods to the adjusted total distribution, it may be seen that the percentage of Metropolitan teachers who had taught in the period of less than 5 years in other schools is higher than in the total distribution, while the percentages of the Non-metropolitan teachers who had taught in each of the periods of 10 or more years in other schools are higher than in the total distribution. The division of teachers who had taught in the period from 5 to 10 years in other schools is about the same as that found in the total distribution.

An examination of Figure XIV permits a more detailed comparison of the Metropolitan and Non-metropolitan distributions by number of years of teaching in other schools. Except for minor variations, these distributions fall into two distinct periods of years when compared to the adjusted total distribution. Of the teachers who had taught any number less than 6 years in other schools, percentages employed in Metropolitan Areas are higher than in the total distribution. Of the teachers who had any number over 5 years of teaching in other schools, percentages employed in Non-metropolitan Areas are higher than in the total distribution.

Table 18 in the appendix shows the complete distributions of the teachers of separate Economic Areas by years of teaching in other schools. Table 19 in the appendix shows the per cent of teachers in each Economic Area who had taught for selected numbers of years in other schools. This table shows that in three of the nine Metropolitan Areas and in all but two of the thirteen Non-metropolitan Areas, data were unavailable for 4% or more of the teaching populations. In Figure XV, which shows the per cent of teachers in each Economic Area who had taught in other schools for less than 5 years, 5 to 20 years and 20 years or more, the distributions are based on adjusted data for all Areas in which data were unavailable for 4% or more of the teachers. The following general conclusions may be drawn from these results:

1. A comparison of the distribution of teachers in the total Metropolitan population to the distribution of all teachers shows that the percentage of Metropolitan teachers who had taught less than 5 years in

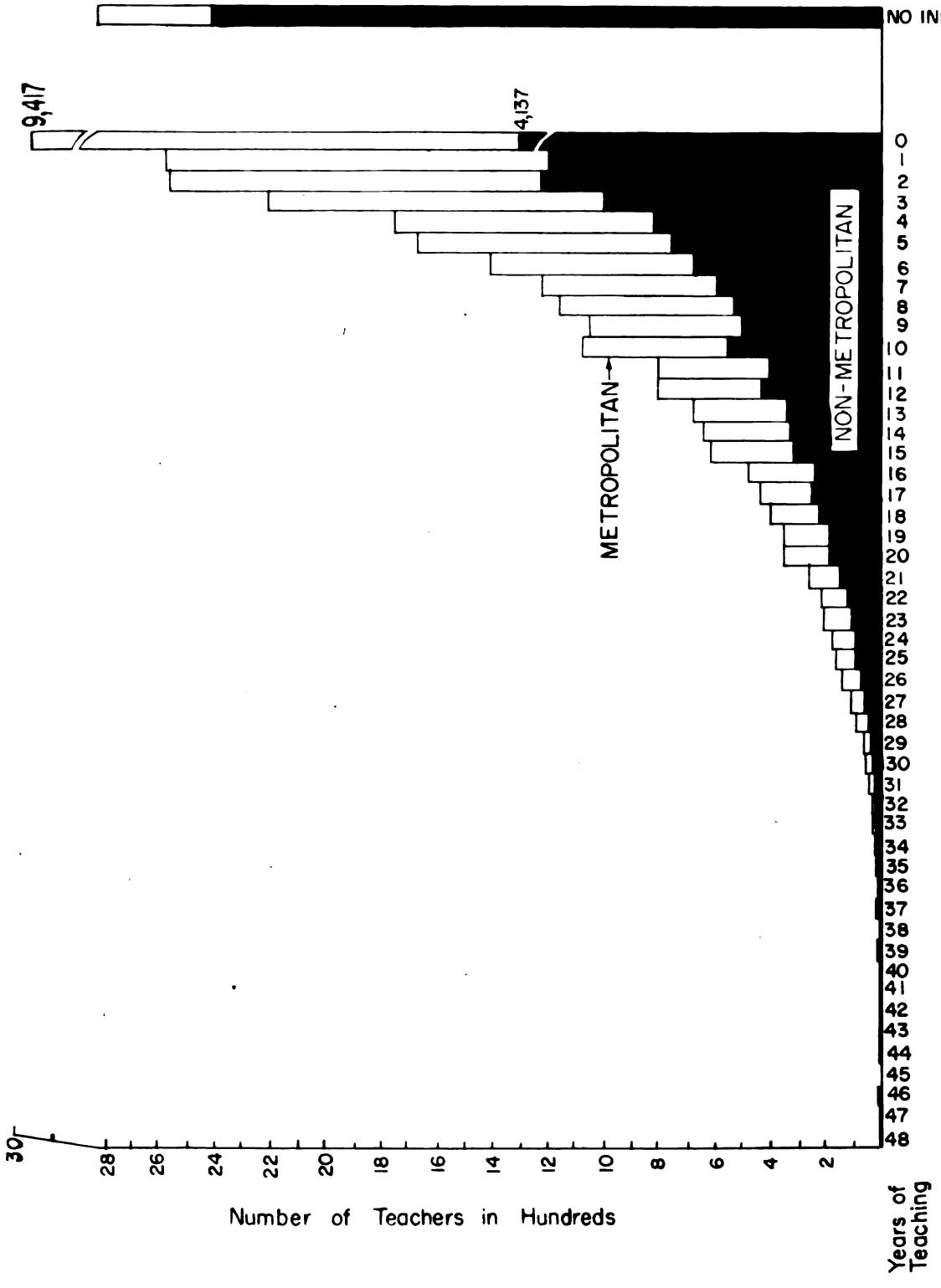
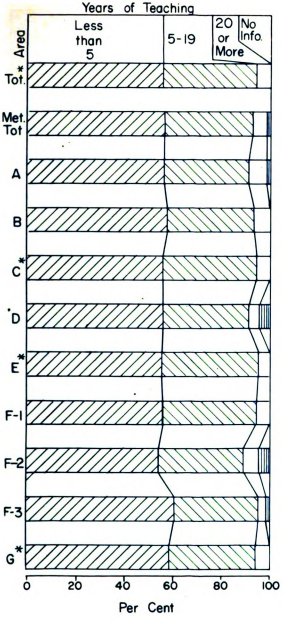


Fig. XIV Distribution of Metropolitan and Non-Metropolitan Teachers by Years of Teaching in Other Schools.



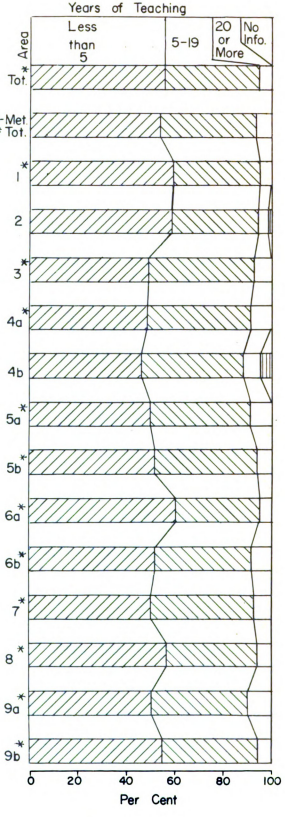


Fig. XV. Distribution of Teachers in each Economic Area by Years of Teaching in Other Schools.

*Adjusted Data

other schools is higher than in the total distribution while the percentages of Metropolitan teachers who had taught 5 to 20, and 20 or more years in other schools is lower than in the total distribution.

2. A comparison of the distribution of teachers in separate Metropolitan Areas to the distribution of all teachers shows that in every Metropolitan Area: (a) the percentage of teachers who had taught less than 5 years in other schools is about equal to or higher than in the total distribution, except in Area F2; (b) the percentage of teachers who had taught in other schools from 5 to 20 years is about equal to or lower than in the distribution of all teachers, except in Area E; and (c) the percentage of teachers who had taught 20 or more years in other schools is about equal to or lower than the percentage of the corresponding group in the total distribution, except in Areas A, B, and F2.

3. A comparison of the distribution of teachers in the total Non-metropolitan population to the distribution of all teachers shows that the percentage of Non-metropolitan teachers who had taught less than 5 years in other schools is lower than in the total distribution, while the percentages of Non-metropolitan teachers who had taught 5 to 20 years and 20 or more years are higher than in the total distribution.

4. A comparison of the distributions of teachers in separate Non-metropolitan Areas to the distribution of all teachers shows that in every Non-metropolitan Area: (a) the percentage of teachers who had taught in other schools for less than 5 years is lower than in the total distribution, except in Areas 1, 2, 6a and 8; (b) the percentage of teachers who had taught 5 to 20 years in other schools is higher than in the total distribution, except in Areas 1, 2, 6a and 8; and, (c), the

percentage of teachers who had taught 20 years or more in other schools is about equal to or higher than in the distribution of all teachers, except in Areas 1, 2 and 6a.

Whether the Teacher had Taught the Previous Year

Table 23 shows the number and per cent of teachers who had and had not taught the previous year.

TABLE 23

DISTRIBUTION OF TEACHERS BY WHETHER THEY HAD OR HAD NOT TAUGHT THE PREVIOUS YEAR*

	N	%
Taught the previous year	28,750	80.0
Did not teach the previous year	5,015	14.0
No information	2,170	6.0
Total	35,935	100.0

*Adapted from Sub-committee on Teacher Education Report, Part II, Table 16, p. 35.

Table 24 shows the number and per cent of those teachers who had or had not taught the previous year who were employed in Metropolitan and Non-metropolitan Areas. Comparing these distributions to the distribution of the adjusted total group, it may be seen that, of the teachers who had taught the previous year, the percentage employed in Metropolitan Areas is slightly lower than in the total distribution, while the percentage employed in Non-metropolitan Areas is slightly

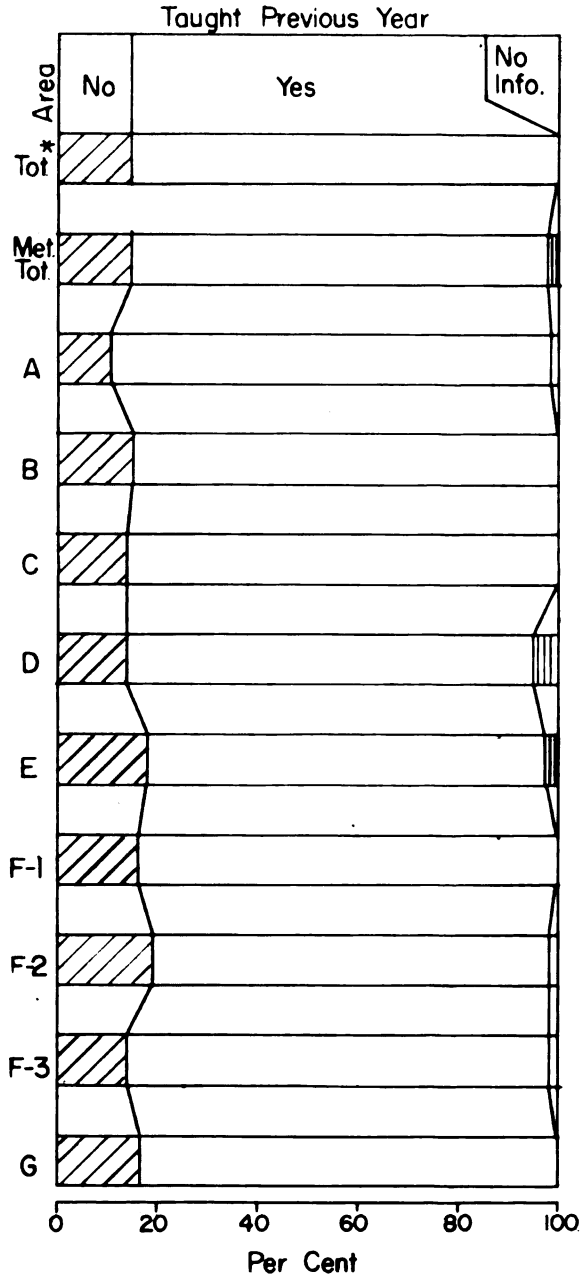
higher than in the total distribution. The reverse situation is the case for those teachers who had not taught the previous year.

TABLE 24

NUMBER AND PER CENT OF THE TEACHERS WHO HAD AND HAD NOT TAUGHT THE PREVIOUS YEAR WHO WERE LOCATED IN METROPOLITAN AND NON-METROPOLITAN AREAS

	Metropolitan		Non-metropolitan		Total
	N	%	N	%	
Taught the previous year	14,837	51.6	13,913	48.4	28,750
Did not teach the previous year	2,705	53.9	2,310	46.1	5,015
No information	286	13.2	1,884	86.8	2,170
Total	17,828	49.6	18,107	50.4	35,935
Adjusted Total	17,542	52.0	16,223	48.0	33,765

Table 20 in the appendix shows the number and per cent of teachers in each Economic Area who had or had not taught the previous year. This table indicates that in two of the nine Metropolitan Areas and in all but two of the thirteen Non-metropolitan Areas data for 4% or more of the populations were not available. Figure XVI, which shows the per cent of teachers in each Economic Area who had and had not taught the previous year, is based on adjusted distributions for all Areas in which information was unavailable for 4% or more of the teachers. Variations in the pattern presented in Figure XVI appear to be rather negligible, but the following general conclusions may be drawn from these results:



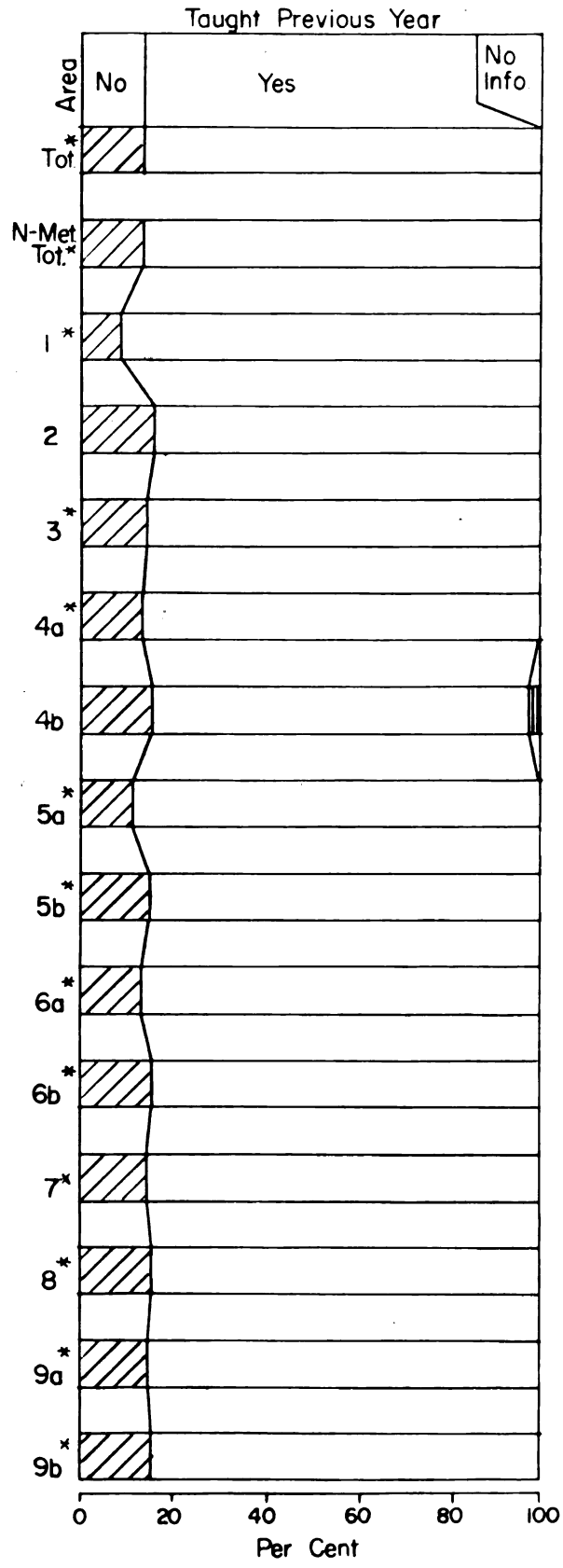


Fig. XVI. Distribution of Teachers in each Economic Area by Whether the Teacher Taught the Previous Year.

*Adjusted Data

1. A comparison of the distribution of teachers in the total Metropolitan population to the distribution of all teachers shows that the percentage of Metropolitan teachers who had taught the previous year is lower than in the total distribution, while the percentage of teachers who had not taught is higher than in the total distribution.

2. A comparison of the distributions of teachers in separate Economic Areas to the distribution of all teachers shows that in every Metropolitan Area: (a) the percentage of teachers who had taught the previous year is about equal to or lower than in the total distribution, except in Areas A and C; and, (b) the percentage of teachers who had not taught the previous year is higher than in the total distribution, except in Areas A, C, D, and F3.

3. A comparison of the distribution of teachers in the total Non-metropolitan population to the distribution of all teachers shows that the percentage of Non-metropolitan teachers who had taught the previous year is higher than in the total distribution, while the percentage of teachers who had not taught is lower than in the distribution of all teachers.

4. A comparison of the distribution of teachers in each Non-metropolitan Area to the distribution of all teachers shows that in every Non-metropolitan Area: (a) the percentage of teachers who had taught the previous year is about equal to or higher than in the total distribution, except in Areas 2, 4b, 6b, 8 and 9b; and (b) the percentage of teachers who had not taught the previous year is about equal to or lower than in the total distribution, except in the same five Areas.

V. DISCUSSION AND IMPLICATIONS OF RESULTS

The purpose of this chapter is to indicate some of the implications of the results of this study. Specifically, the results discussed are those which relate to the problems of (a) school district organization, (b) teacher supply and demand, and (c) teacher training in state-supported institutions of higher education.

From the results presented in the previous chapters, certain general relationships between items can be inferred. Most of the categories examined for each item tended to discriminate in a general way between the total Metropolitan and the total Non-metropolitan populations. For example, the percentages of teachers employed in school districts of types G, H and K were higher than in the total distribution for all but three of the Non-metropolitan Areas and lower than in the total distribution for all but two of the Metropolitan Areas. It was also found that the percentages of teachers holding sub-standard certificates were higher than in the total distribution for all but one of the Non-metropolitan Areas and lower than in total distribution for all but two of the Metropolitan Areas. Such series of results lead to inferences regarding relationships between the items examined; for example, high percentages of teachers holding sub-standard certificates tend to be associated with high percentages of teachers employed in districts G, H and K. Inferences of this sort offer no clue to the degree of relationship that may exist or whether such a relationship does, in fact, exist for the smaller populations of the separate Economic Areas.

As a basis for a discussion of implications of the results, rank order correlations were computed for relationships between selected categories of various items.[1] Four items were selected as having special significance in the evaluation of the teaching population and the organization and breadth of the educational program of any given Area. Correlations were computed for relationships between a selected category of each of these primary items and a selected category of every other item, except institution where work was completed for a certificate. The item of training institutions was omitted from this examination due to the obvious influence of the factor of location.

The four items selected as of primary importance are: (a) level of training, as indicated by the average amount of training; (b) type of certification, using category III, the percentage of teachers holding sub-standard certificates; (c) school district organization, using the percentage of teachers employed in types of districts G, H and K; and, (d) breadth of the educational program, indicated by the percentage of teachers employed in special education assignments. Amount of training and type of certificate were chosen as primary measures[2] of teacher qualification, and as the best measures provided in this study of teacher quality. In the absence of a clear and agreed-upon definition of the "good teacher," the measures used here may be as reliable as any that are

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[1]See Arkin and Colton for the formula for and discussion of rank order correlation (1:85-87).

[2]The terms "measure" and "measuring" are not used in the strict mathematical sense of their meanings.

available. The percentage of teachers in districts of types G, H and K, and the proportion of the teaching population employed for special education were chosen as indications of the general quality and breadth of the educational program offered in a given Area. Again, these measures may be unreliable criteria of the true quality of an educational program, but are the best indices among the items used in this study. The implication that the educational programs in G, H and K district schools are of "sub-standard" quality can only be supported by the fact that the numbers of these districts have been dwindling as a result of the efforts of laymen and educators to create more efficient administrative units through consolidation of schools and district re-organization. There is little doubt that it is generally agreed that the "little red school houses" of the K-type district have become educational liabilities.[1] It is likely that, in general, the designation of "sub-standard" applies to a lesser degree to G and H-type districts. Although the number of teachers employed in special education assignments is a relatively small percentage of the total population of teachers, the percentage of special education personnel may be taken as one measure of the breadth of the educational program and the extent to which the Area is prepared to give individual assistance to students presenting special problems; for example, the physically and mentally handicapped, educationally retarded, homebound, etc.

Table 25 shows the rank order correlation coefficients obtained for relationships of selected categories of the various items for the

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[1]For example, see Strolle (13).

TABLE 25

RANK ORDER COEFFICIENTS OF CORRELATION OBTAINED FOR RELATIONSHIPS BETWEEN SELECTED CATEGORIES OF VARIOUS ITEMS*

	High Ave. Amt. of Training	Low % of Teachers Holding Sub-stand Certifs.	Low % of Teachers In Dists. G, H, K	High % of Special Education Personnel
Low % of teachers holding sub-standard certificates	0.895	—	—	—
Low % of teachers in dists. G, H and K	0.662	0.686	—	—
High % of special education personnel	0.712	0.701	0.515	—
High % of teachers certified from 1928 to 1947	0.438	0.535	0.320	0.506
Low % of teachers having 5 to 25 yrs. of teaching**	0.544	0.689	0.574	0.653
High % of teachers having 20 yrs. or more in present school**	0.510	0.677	0.604	0.612
High % of teachers having 0 to 4 years in other schools**	0.678	0.737	0.595	0.532
High % of teachers who had not taught previous year**	0.214	0.238	0.160	0.328

*Correlations of 0.50 to 0.60 and above are considered of sufficient magnitude to warrant attention.

**Based on adjusted data.

twenty-two Economic Areas. The following general conclusions may be drawn from the results shown in this table:

1. As would be expected, high average amount of training tends to show a high degree of relationship to low percentage of teachers holding sub-standard certificates.

2. Whereas the two items designated as measures of teacher quality are highly related, the medium relationship between the two measures of "Area quality" indicates that these two items are measuring somewhat different aspects of the educational structure and program.

3. The relationships between the two items indicating teacher quality and the two items indicating Area quality are high, showing a slightly higher degree of relationship between quality of teachers and percentage of special education personnal than between quality of teachers and district organization.

4. Relationships between the percentage of teachers receiving certificates from 1928 through 1947 and the four primary factors are medium to low. As would be expected, the highest of these relationships is between type and date of certification.

5. The degrees of relationship of the percentage of teachers who had 5 to 25 years of teaching experience to the four primary factors are medium to high, highest relationships being with type of certificate and percentage of special education personnel. The relationships of total years of experience and date of certificate to the four primary factors may appear to be contradictory, since a high percentage of teachers certified between 1928 and 1948 and a low percentage of teachers with 5 to 25 years of teaching both tend to show medium to high relationships to at least two of the primary items. It should be recalled that the certificates classified as sub-standard are all types which must be renewed at

one, two and three year intervals, hence, few of the teachers holding sub-standard certificates would be included in the group certified between 1928 and 1948. On the other hand, a large percentage of teachers holding sub-standard certificates have had more than 5 years of teaching experience.

6. The categories used for the items of experience in the present school and experience in other schools both tend to express a factor of immobility; that is, long years of teaching in the present school and a very few years of experience in other schools. For the populations under consideration, long years of experience in the present school tends to be related more highly to type of certificate and to both items of Area quality than to average amount of training. On the other hand, percentage of teachers who have had very few years of experience in other schools shows higher degrees of relationship to items of teacher quality than to items of Area quality.

7. The final item, whether the teacher had taught the previous year, appears to bear no substantial relationship to any of the primary items.

Implications for School District Organization

The relationships reported above indicate that the lower the percentage of teachers in districts of types G, H and K, the higher the quality of the teaching population. This finding is, of course, partly accounted for by the limitations placed upon teachers holding certain types of sub-standard certificates in terms of the types of school districts in which

they may legally teach. An additional explanation for such a relationship which is commonly advanced, particularly by educators, rests upon the issue of teacher salaries. The belief is that until salaries are raised to a point where teaching can compete effectively with other vocations, there is little incentive for teachers to improve their qualifications, as well as small likelihood of attracting new and better qualified teachers. Inherent in this explanation would be the assumption that the school districts of the types under discussion pay salaries that are not only lower than the prevailing wages for other kinds of work, but are also lower than the general average of teachers salaries. The suggestion that money is the panacea for educational problems does not apply to the relationship between teacher quality and salaries alone, but also to the relationship between the quality of the total educational program and the amount of expenditures for education. Pleas for greater financial assistance to education, and especially to the educational programs of less wealthy communities, are not at all uncommon on both the national and state levels. More money for less wealthy areas implies the further belief that there is a rather direct relationship between the general wealth of the community and the amount spent for education, hence, a relationship between the general wealth of the community and the quality of the educational program.

In summary, the assumptions and beliefs just discussed may be stated as follows: (a) High teacher quality bears a high positive relationship to high teacher salaries; (b) High quality of the educational program, including quality of teachers, bears a high positive relationship to high expenditures for education; (c) High expenditures for the educational

program bear a high positive relationship to the wealth of the community supporting the program; and (d) High quality of the educational program, including quality of teachers, bears a high positive relationship to wealth of the supporting community.

If these assumptions are true, it is logical that persons interested in the improvement of education should concentrate upon the procurement of greater financial support for the schools, or, in the absence of such added support, upon resigning themselves to an acceptance of the quality of the educational program as being as good as it can be for the amount of funds available and expended.

Examination of the validity of these assumations and beliefs requires the introduction of additional data relative to finances in each of the Economic Areas. Following are descriptions of the three measures used for this purpose:

1. Per pupil expenditures for education.[1] A measure of expenditures for education in each Area was obtained by adding the totals of general fund expenditures[2] for the school year 1952-53 for all of the counties in a given Area and dividing by the total school enrollment[3] of the Area for the 1952-53 school year.

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[1]These data were collected from the Division of Finance and Child Accounting, Department of Public Instruction (8).

[2]This total of expenditures included all expenditures from the general fund, plus the balance on hand in the general fund as of June 30, 1953. For a detailed account of types of expenditure involved, see the annual reports of the Department of Public Instruction (9).

[3]The formula for the calculation of school enrollment is: Total proof of membership = total registration for year 1952-53 + number received from all sources during the year - number lost from all causes during the year.

2. Per pupil expenditures for teacher salaries.[1] A comparative measure of teacher salaries was obtained by dividing the total amount spent in 1952-53 in each Area for the salaries of teachers (administrative personnel were excluded) by the total school enrollment of the Area. This is, of course, not a measure of average teacher salaries. It is likely that the differences between Economic Areas would be greater on the basis of average salaries than on the basis of per pupil salaries, since the factor of pupil-teacher ratio is involved.

3. Per capita bank deposits.[2] The only available measure indicating the general wealth of the various Areas was the total amount of bank deposits as of December 1950. The total of bank deposits in each Area was divided by the 1950 population of the Area to arrive at a comparative measure.[3] Per capita bank deposits may well be an unreliable criterion of actual community wealth, but may be a reasonably accurate indicator of the relative wealth of various Economic Areas.

Table 21 in the appendix shows the results of these calculations for each of the Economic Areas.

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[1]These data were collected from the Division of Finance and Child Accounting, Department of Public Instruction (8).

[2]These data were collected from the United States Census Bureau tabulations (5).

[3]Some difficulties were involved in calculating per capita bank deposits for the three F Areas, Wayne, Oakland and Macomb Counties. The method used was to divide the total bank deposits for all three counties, including the city of Detroit, by the total population of the three counties. Banks were then assigned to each of the three Areas on the basis of their ranks on median family income.

Table 26 shows the rank order coefficients of correlation found for relationships between the primary factors used in this study and the three measures of finance, described above, for the twenty-two Areas, as well as the relationships between per capita bank deposits and the two factors relating to school finance. Since teacher salaries are included in the total of general fund expenditures, correlations were also computed between cash expenditures, exclusive of teacher salaries, and other factors.

TABLE 26

RANK ORDER COEFFICIENTS OF CORRELATION OBTAINED FOR RELATIONSHIPS BETWEEN SELECTED STUDY ITEMS AND SELECTED MEASURES OF SCHOOL AND COMMUNITY FINANCE

	High Ave. Amt. of Training	Low % of Teachers Holding Sub-stand Certifs.	Low % of Teachers in Dists. G, H, K	High % of Special Education Personnel	High Per Capita Bank Deposits
High per pupil teacher salaries	0.681	0.753	0.520	0.764	0.734
High per pupil expenditures	0.154	0.276	0.098	0.068	0.010
High per pupil expenditures, exclusive of teacher salaries	-0.122	0.021	-0.082	-0.247	-0.305
High per capita bank deposits	0.645	0.685	0.562	0.791	—

The high relationships found between the two factors used to indicate teacher quality and per pupil teacher salaries tend to substantiate

the assumption that high teacher quality bears a high positive relationship to high teacher salaries.

If the second assumption, that the quality of the educational program (including quality of teachers) is directly related to expenditures for education, were true, one would expect to find reasonably high correlations between each of the four items used as primary factors and per pupil expenditures. Reference to Table 26 indicates that, in fact, all of these correlations were found to be negligible. In the case of expenditures exclusive of teacher salaries, the correlation coefficients for relationships with three of the primary factors were actually negative. Among the conclusions that may be drawn from these results are the following: (a) low teacher quality and high percentage of teachers employed in G, H and K district schools are not, in general, accompanied by low educational expenditures, especially expenditures exclusive of teacher salaries; and (b) high cash expenditures for education, including or excluding teacher salaries, do not guarantee high Area or teacher quality.

These generalizations may be further clarified by an examination of the relationships between teacher quality, Area quality and educational expenditures in the separate Economic Areas. For this purpose, only one measure of each of these factors was employed. Percentage of teachers holding sub-standard certificates was chosen as reasonably representative of the two factors indicating teacher quality; that is, substantially the same conclusions result from the use of average amount of training. Percentage of teachers employed in G, H and K districts was chosen as the fundamental measure of Area quality, and per pupil expenditures,

including teacher salaries, was chosen as the measure of expenditures for education.

The twenty-two Areas were placed into three groups according to rank on percentage of teachers in districts G, H and K, the first group including the six Areas having the lowest percentages of teachers in these types of districts; the second group including the six Areas having the highest percentages of teachers in these districts; and the third group including the remaining Areas. Each of these groups was then examined in terms of their ranks on factors of per pupil expenditures and qualifications of teachers. Following are the results of this examination.

1. Five of the six Areas having the lowest percentages of teachers employed in G, H and K districts ranked high in quality of teachers regardless of whether they ranked high, medium or low in expenditures. Areas F3 and 1 ranked high in teacher quality and high in expenditures. Areas D, F1 and F2 ranked the lowest of all Areas in expenditures, but ranked 6th, 4th and 7th, respectively, in quality of teachers. The one exception to this conclusion, Area 2, ranked as medium on both expenditures and quality of teachers.

2. Four of the six Areas having the highest percentages of teachers in G, H and K districts ranked very low in teacher quality, regardless of their ranks on expenditures. Areas 4b, 5a, 5b and 7 were the four Areas ranking lowest in quality of teachers, although they ranked 12th, 9th, 18th and 17th, respectively, on expenditures. Both of the exceptions to this conclusion, Areas 6a and 6b, ranked as medium in both quality of teachers and expenditures.

3. All of the four Areas which ranked medium in percentage of teachers in districts G, H and K and ranked high on expenditures, ranked medium or high in quality of teachers. Areas G, E, 8 and 9b all ranked among the six highest in expenditures, and ranked 1st, 5th, 9th and 12th, respectively, in quality of teachers.

4. None of the Areas which ranked medium on percentage of teachers in G, H and K districts and medium or low in expenditures, ranked high in teacher quality. Areas A, B, C, 3, 4a and 9a all ranked medium or low in both expenditures and teacher quality.

It seems very clear that, on the basis of the measures used in this analysis, the belief that high quality of the educational program including quality of teachers, bears a high positive relationship to expenditures for education, is not defensible. The existence of Areas: (a) which rank among the lowest in per pupil expenditures and among the highest in teacher quality; for example, D, F1 and F2; and (b) which rank relatively high in per pupil expenditures and among the lowest in teacher quality; for example, Areas 5a and 3, represent rather striking support for the efficacy of school district re-organization as a means of more efficient use of money already available.

Returning to the original assumptions, it is clear from the correlation between educational expenditures and bank deposits that the assumption of a high positive relationship between wealth of the Area and high expenditures for education is not supported. The low inverse correlations found for the relationship between bank deposits and expenditures, exclusive of teacher salaries, indicates that, if a relationship exists at all, it is negative. Consideration of the coefficients of correlation found

for the relationships between bank deposits and the items relating to Area and teacher quality indicate that, in general, wealth of the community is associated with Area and teacher quality, but it cannot be generally maintained that these relationships are explained by higher expenditures for education in wealthier communities.

There can be no doubt that persons waging battle for greater financial assistance to education are sincere in their efforts. Furthermore, there seems to be little doubt that increased expenditures for teacher salaries might well be the means by which the present and future teacher supplies will improve in general qualifications. There are indications, however, that factors other than salary are of considerable importance in the distribution of qualified teaching personnel. It is likely that one such factor is the proximity of teaching positions to metropolitan areas which offer greater opportunities for cultural and educational advancement.

The conclusions offered relative to the relationships between expenditures and the factors of teacher and Area quality are not meant to imply that school district re-organization, and not money, is the panacea for all educational problems. It is suggested, however, that in the absence of at least some re-organization of school districts in Areas having high percentages of G, H and K schools, (a) the returns from expenditures of relatively high amounts of money will continue to be dissipated by the high cost of operating these types of districts; and (b) there is little likelihood that the teaching populations of such Areas will improve in qualifications.

Implications for Future Teacher Supply and Demand

One of the most crucial current problems in education is the increasing shortage of teachers, particularly of qualified teachers. The magnitude of the present and future demand for teachers in Michigan is indicated by the predictions made in Part I of the Council of Presidents report:

> . . . the peak of total teacher demand will be reached in 1959-60, although the peak of enrollment does not occur until 1966. The next six years [1954-55 through 1959-60] will be crucial ones in the effort to supply enough qualified teachers to meet even minimum needs.
>
> Even at the present pupil-teacher ratios, it will be necessary to train 48,745 teachers to supply the needs of the next six years. Furthermore, the annual requirements for the next several years after 1959-60 are only about 1,000 teachers less per annum than the previous period of peak demand (14:49).

The increased need for teachers does not and will not affect all geographic areas of the state to the same extent. It is the purpose of this section to discuss, in general, some of the factors related to teacher demand and supply and their differential effects upon the various geographic areas of the state. More specific implications of these factors for separate Economic Areas have been included in the summaries of findings for separate Economic Areas presented in the next chapter.

1. Changes in general population. Undoubtedly, the major factor producing an increased demand for teachers is that of population increase. Tabulations by the United States Census Bureau indicate that during the decade from 1940 to 1950 the population of Michigan increased by 21.2%. A large percentage of this increase was due to unusually high birth-rates, especially in the years following World War II. However, the State of Michigan also has an unusually high rate of in-migration from other states

and countries. From data provided by Thaden and Taylor (17:458), it is estimated that close to one-third of the population increase of the last decade was due to in-migration. In 1952, the United States Census Bureau made population predictions by states for 1955 and 1960, including low, medium and high estimates (4:7). The most recent available Census Bureau estimate of the population of Michigan, as of July 1, 1954, indicates that the low and medium predictions originally made for 1955 had already been exceeded by the middle of 1954 (6:3). Indications are that the 1955 population will more nearly approximate the high estimate than the medium. On the basis of the high estimate for 1960, it is estimated that the population of Michigan will increase another 24% during the present decade.

Thaden and Beegle (2) have estimated the rates of population change and have made low, medium, and high predications of populations for 1955 and 1960 for each of the Economic Areas of the state. These predictions indicate that there is considerable variation in the rates of change among the Economic Areas. The rates of population change are based on past trends in population in each Area, and the predictions of future populations are based on the application of these varying rates of change to the Census Bureau estimates of future total populations for Michigan. Through the use of the estimated rates of change, it is possible to calculate the estimated percentage of the state's population that will be located in each of the Areas in any given future year. Although only eight of the Economic Areas are gaining larger percentages of the population, the estimated increase in total population is so great, that in all

but one Area (Area 1) either a negative or positive rate of change results in numerical increases in population.

Since the increases in population include persons who have migrated to Michigan, it cannot be assumed that the total increase is occuring in the school-age and younger portion of the population. However, Thaden and Taylor have estimated that approximately a fourth of the persons entering the state during the last decade were of school age (17:458). It has also been estimated that the rate of in-migration during the first four years of the present decade is approximately equal to the rate during the past decade (15). Depending upon the accuracy of the predictions and estimates involved, it seems safe to assume that for each year for some years to come, approximately 80% or more of the population increase will be among the school-age and younger group. On the assumption that the rate of school attendance remains relatively stable, it can then be estimated that during the remainder of the present decade the supply of teachers must multiply at a rate that is about two and one-half times greater than the rate of increase in the general population, to maintain even the present pupil-teacher ratios. This estimate does not include additional teachers who will be needed as replacements for teachers withdrawing and retiring from teaching.

Over 71% of the estimated general population for 1960 will be located in Metropolitan Economic Areas. Table 22 in the appendix shows how the separate Economic Areas rank in terms of rate of population change. The predicted general population of each Area for 1960 has been included in the summary of each Area in the next chapter.

The teachers included in this study were public school teachers only. It is not possible to determine from these data what percentage of all teachers in a given Area are employed in the public schools. The future teacher demand in the public schools of a given Area will, therefore, vary with any changes in the percentage of school-age children who attend non-public schools. In Areas where non-public enrollments decrease, remain the same or increase at a rate that is lower than the rate of increase in the school-age group, teacher demands in the public schools will be proportionally greater.

2. School attendance. A secondary factor related to teacher demand is the percentage of school-age children who actually are in school. From the Census Bureau tabulations for 1950 (5:218-33), the percentage of children seven to seventeen years of age who were in school was determined for each Economic Area. These rates of school attendance are shown in Table 22 in the appendix. It may be observed from this table that the rates do not vary greatly from one Area to another. Twelve of the Areas have 94% of their school-age children in school and vary from one another by only fractions of one per cent. Only those rates of attendance which are unusually high or low are likely to be of particular significance in predicting teacher demand for separate Economic Areas.

3. Withdrawals from teaching. It is known that the rate of withdrawal from teaching is one of the major factors creating a demand for teachers. In the Council of President's study it was estimated that the average withdrawal rate for teachers in Out-state public schools was 13.4% a year for the five-year period from 1948-49 through 1952-53 (14:32). The

data of this study provide no accurate or direct means of predicting the future rates of withdrawal for separate Economic Areas. It can be speculated that those Areas having high percentages of teachers who had taught for a very short period of years in the present school may also have high withdrawal rates. However, this conclusion is open to question in view of the possibly large numbers of teachers who may simply have moved from one school to another, often within the same Area. Included in the percentage of teachers who withdraw from teaching annually are those who have reached retirement age. In the Council of President's study it was estimated that over the five-year period from 1948-49 through 1952-53 about 1% of the Out-state public school teachers retired each year (14:32). From the analyses of teachers by date of certificate and by total years of teaching, it is possible to arrive at a minimal estimate of the average retirement rate in each Economic Area for the 1950's and 1960's. On the assumption that the teachers involved began teaching in their early 20's and will retire at about the age of 65, it may safely be estimated that all of the teachers who received certificates before 1928 will have retired by about 1970. On the same bases, a similar conclusion applies to all teachers who had 25 or more years of teaching experience. Table 22 in the appendix shows the percentage of teachers in each Area who were certified before 1928 or who had 25 or more years of teaching. The percentage given is based on date of certificate, except for Areas in which the unadjusted percentage of teachers who had taught 25 years or more was higher. Using this method of predicting retirements, it can be estimated that at least 20% of the teachers included in this

study will have retired by 1970 with the exception of a few teachers who may be classified as withdrawals if they leave teaching before retirement age. It is evident that, using even this minimum estimate, the average annual retirement rate for the seventeen-year period from 1953 through 1969 will be higher than it was in the preceding five-year period. The assertion that the rates shown in Table 22 of the appendix are minimum estimates is based primarily on the fact that it is impossible to estimate the number of teachers certified since 1927 who were beyond their early 20's at the time of certification and who presently are of an age which qualifies them for retirement by 1970. These conditions apply particularly to teachers who have had interrupted teaching careers, and who have returned to teaching at a later age under a recently renewed certificate; for example, a State Board Special certificate. The predicted rates in Table 22 of the appendix will be most accurate for Areas having highly stable populations and relatively low percentages of teachers holding sub-standard certificates. It is interesting to note the wide range in these estimated rates; at least a third of the teachers in Area 1 will retire by 1970, while a minimum of less than 12% of the teachers of Area 4b will retire during the same period of time.

4. Re-entry into teaching. Estimates of the rates of re-entry into teaching are possible from the data collected for this study. The rates of re-entry shown in Table 22 of the appendix were obtained by subtracting the percentage of teachers who had no previous teaching from the percentage who had not taught the previous year for each of the Economic Areas. These rates can be considered only as rough estimates, since they are based on re-entry for a single year. The estimated rates for

those Areas for which data were least available for the items of teaching experience used in the calculations will be least reliable.

Table 27 shows rank order correlation coefficients for the relationships of rate of re-entry into teaching and factors of teacher and Area quality, teacher salaries and rate of population change.

TABLE 27

RANK ORDER COEFFICIENTS OF CORRELATION OBTAINED FOR RELATIONSHIPS BETWEEN RATE OF RE-ENTRY INTO TEACHING AND SELECTED FACTORS

	High Ave. Amt. of Training	Low % of Teachers Holding Sub-stand. Certifs.	Low % of Teachers in Dists. G, H, K	High % of Special Education Personnel	High per pupil Teacher Salaries	High Rate of Population Change
High Rate of Re-entry into Teaching	0.096	0.082	-0.076	0.118	-0.033	0.221

These correlations indicate an almost total lack of relationship between the rate of re-entry into teaching and the factors of teacher quality, Area quality and teacher salaries. A very low positive relationship was found between rate of re-entry into teacher and teacher demand, as indicated by a high rate of population increase. It is apparent that none of the factors examined gives a reliable indication of why former teachers return to teaching. It is likely that there are several important factors which lead to re-entry into teaching and that these factors have varying degrees of effectiveness in different Areas of the state.

5. Teacher salaries. It has just been indicated that the factor of teacher salaries is not a generally effective factor in the explanation of

why teachers re-enter teaching. A more important question in the problem of teacher supply is that of the effect of teacher salaries on the distribution of newly trained and fully-qualified teachers. Also of importance is the question of whether the factor of teacher salaries is effective in the retention of teachers in a given school. By the requirements of the certification code, it can be assumed that all of the teachers recorded as holding provisional certificates had been awarded these certificates during the five-year period previous to the Fall of 1952. This period includes the beginning of the elementary school enrollment bulge resulting from the post-war baby boom. Hence, the major demand would be for elementary teachers. The rank order correlation coefficients shown in Table 28 were calculated for the purpose of examining; (a) the effectiveness of teacher salaries and teacher demand (as implied by rate of population increase) as factors in the distribution of newly qualified teachers; and, (b) the effectiveness of the factor of teacher salaries as a means of retaining teachers in the present school.

The relationships between the percentage of teachers holding elementary provisional certificates and the factors of per pupil teacher salaries and teacher demand indicate that each of these factors may have been of considerable importance in the distribution of newly qualified elementary teachers. On the other hand, the geographic distribution of newly qualified secondary teachers, for whom there was a relatively low demand during the period from 1948 to 1952, is unrelated to population rates and shows a high negative relationship to the factor of teacher salaries. The correlation between the factor of teacher salaries and the percentage of teachers who had taught 20 or more years in the present school, indicates

that teacher salaries may be generally effective in the retention of teachers in a given school.

TABLE 28

RANK ORDER COEFFICIENTS OF CORRELATION OBTAINED FOR RELATIONSHIPS BETWEEN FACTORS RELATED TO TEACHER SUPPLY AND DEMAND AND FACTORS RELATED TO DISTRIBUTION AND RETENTION OF TEACHERS

	High % of Teachers Holding Elem.Prov. Certifs.	High % of Teachers Holding Sec.Prov. Certifs.	High Rate of Population Change	High % of Teachers 20 Yrs. or More in Pres. School
High per pupil teacher salaries	0.757	-0.720	0.544	0.623
High rate of population change	0.822	-0.114	—	

An examination of the distribution of emergency certificates (Specials) shows that higher percentages of teachers holding this type of certificate were located in Areas having low rates of teacher demand, except for a few Areas in which a high teacher demand (as indicated by a high rate of population increase) was accompanied by low teacher salaries. It may logically be predicted that when the bulge in school enrollments reaches and engulfs the secondary schools, the patterns of distribution of the provisional and Special certificates will be greatly altered. Those Areas having low per pupil teacher salaries will not only experience difficulty in competing for qualified elementary teachers, but will also have some difficulty retaining the qualified secondary personnel gained during less competitive times,

and will have great difficulty in attracting newly qualified secondary teachers.

In conclusion, it must be pointed out that predictions of future teacher demand depend upon numerous assumptions about the stability of trends for the various factors involved; for example, general population, school attendance, relative enrollments in public and non-public schools, teacher withdrawals, etc. Any major change in the economy of the state will tend to reduce the accuracy of the over-all predictions. Predictions for separate Economic Areas are even more subject to inaccuracies. In an Area having a relatively small percentage of the population of the state, the entrance of one concern of a major industry could completely alter the predicted rate of population change and could influence such factors as rate of school attendance and rate of teacher withdrawals. For this reason, and due to the unavailability of data relating to some of the factors involved in the prediction of teacher demand for separate Economic Areas, specific estimates of future teacher demand in the various Areas have not been made.

Implications for State-supported Higher Education

The data of this study may be of use to institutions of higher education in various ways. However, the major concern of this discussion is to indicate general implications of the results for teacher training in the current period of high demand for teachers. The magnitude of the burden upon Michigan colleges is indicated by the estimates made in the Council of Presidents report:

> The colleges of Michigan have graduated, annually, about 4,050 elementary and secondary teachers. If the forecast needs are correct, and assuming the out-of-state supply remains stable at 1,290 teachers per year, they must exceed their output of teachers by about 78% during the next five years [1954-55 through 1958-59], and by about 70% during the five-year period between 1959 and 1963 (14:50).

From the distribution of teachers by type of training institution, as shown in Table 13 on page 44, it is apparent that the state-supported institutions represent the major source of public school teachers in Michigan. Almost four-fifths of the total Out-state supply in 1952-53 had completed work for certificates at the eight institutions classified as state-supported. If the predicted needs for teachers are to be met, it is clear that the facilities of all such institutions will be taxed far beyond their present limits. In addition to the teachers needed to meet increased school enrollments, a high percentage of the present teaching supply hold types of certificates which cannot be renewed or replaced without additional college training. Each teacher holding a provisional certificate must earn additional college credit during a five-year period following the awarding of the provisional in order to qualify for a permanent certificate. The renewal of county and state limited certificates is also contingent upon additional college training. Furthermore, it may be hoped that those teachers holding State Board Special certificates, representing about 11% of the teaching population, will obtain the additional college work necessary to the procurement of standard certificates.

As was indicated in the previous discussion, the increased need for teachers does not and will not affect all geographic areas of the state to the same extent. It was further apparent, from Figure VIII on page 50, that the supply of teachers from a given institution is not distributed

evenly throughout the state, but is strongly influenced by the factor of location. An explanation of the operation of this factor is not directly forthcoming from the analyses of this study. However, it may logically be assumed that, in general, teacher candidates tend to attend colleges located near their home communities, and tend to return to teach in the same general region. In times of high teacher demand and a seller's market, the preferences of prospective teachers will play a more central role in the placement of these teachers. The validity of these conclusions is demonstrated by the findings of Moehlman (11) relative to the placement of normal school graduates in the period of high teacher demand following World War I. These assumptions apply far more to the teacher candidates and graduates of colleges devoted specifically to teacher training than to such institutions as the University of Michigan and Michigan State College, where the factor of location plays a lesser role.

Table 23 in the appendix shows the per cent of teachers from each state-supported institution who were located in each Economic Area. In an attempt to identify what might be called "Areas of demand" for the various state-supported institutions, arbitrary definitions of primary and secondary demand Areas were established as follows:

1. Area of primary demand. Any Economic Area in which, (a) 10% or more of the teachers in the 1952-53 total supply were trained at the given institution, and (b) 20% or more of the teaching population of the Area were trained at the given institution.

2. Area of secondary demand. Any Economic Area in which, (a) 10% or more of the teachers in the 1952-53 total supply were trained at the given institution, but this number represents less than 20% of the teaching

population of the Area, or (b) 20% or more of the teaching population of the Area were trained at the given institution, but this number represents less than 10% of the teachers in the 1952-53 total supply who were trained at the given institution.

Using this method, it was found that none of the Economic Areas represented a primary demand Area for more than one of the State-supported institutions.[1] Each of sixteen of the Areas could be classified as a primary or secondary demand Area of a single institution, and the remaining six Areas were classified as a primary and a secondary or a secondary Area for two or three of the institutions. The location of demand Areas for the four colleges of education coincide rather closely with the "spheres of influence" already established for these four institutions. Complete coincidence is impossible due to the over-lapping of some counties of a few of the Economic Areas with the established service areas.

A further factor of importance in the discussion of the relative future demands upon the various institutions relates to the past trends in the supply of teachers coming from each institution. Of primary interest is that portion of the teacher supply which joins the active public school teaching population in Michigan. Table 29 shows the distributions of teachers from state-supported institutions in the total teaching supply and in the group of teachers who were teaching for the first time in 1952-53 by institution.

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[1]Ferris Institute was excluded from this analysis due to the small percentage of the total teaching population who had been trained at Ferris.

TABLE 29

DISTRIBUTIONS OF THE TOTAL SUPPLY AND OF NEW TEACHERS TRAINED AT STATE-SUPPORTED INSTITUTIONS BY INSTITUTION

	% in Teaching Supply	% New Teachers 1952-53
Michigan State Normal College	24	19
Western Michigan College	23	16
Central Michigan College	18	16
Northern Michigan College	8	5
Michigan State College	10	24
University of Michigan	8	11
Wayne University	7	8

Teachers who were trained at state-supported institutions amounted to about 79% of the total teaching population and about 68% of the group of new teachers of 1952-53. It may be inferred from the distributions shown in Table 29 that the four colleges of education are training lower percentages of the active teaching supply in Michigan than in the past, while Michigan State College, the University of Michigan and Wayne University are contributing higher percentages of teachers to the total supply. If this trend continues during the high demand period of the forseeable future, it is evident that the general increase in the need for teachers will present greater demands for teachers upon those institutions training increasing proportions of the teacher supply.

Following is a brief summary of the implications of the results found in this study for future teacher training at each of the

state-supported institutions which train teachers, except Ferris Institute.

1. Michigan State Normal College. Of those teachers in the total population who completed work for certificates at Michigan Normal, about 58% were located in Metropolitan Areas, while the remaining 42% were located in Non-metropolitan Areas. Over 78% of the teachers from this institution were located in three primary demand Areas, F1, F3 and 8, and five secondary demand Areas, D, F2, 5b, 7 and 9a. Predictions of population change indicate that two of these primary Areas, F1 and 8, are expected to experience high rates of population increase, while the remaining primary Area, F3, ranks medium high in rate of population change. Secondary Area F2 also ranks as a high increase Area, D as a medium high increase Area, 7 and 9a as medium low increase Areas, and 5b as a low increase Area. About 34% of the teachers of the three primary Areas held provisional certificates and may be considered potential candidates for graduate study. Teachers holding sub-standard certificates and having less than four years of training may be considered as potential candidates for in-service training. About 11% of the teachers of the three primary Areas held sub-standard certificates and 10% had less than four years of training. It is likely that these were largely over-lapping groups. Of the teachers in the five secondary Areas, 27% held provisional certificates, 21% held sub-standard certificates and 22% had less than four years of training.

2. Western Michigan College of Education. Of those teachers in the total population who completed work for certificates at Western Michigan College, about 47% were located in Metropolitan Areas, while the remaining

53% were located in Non-metropolitan Areas. About 60% of the teachers trained at Western Michigan College were located in four primary demand Areas, B, G, 6b and 9b and two secondary demand Areas, C and 6a. Three of the primary Areas, G, 6b and 9b, rank as medium high general population increase Areas, while Area B ranks as a medium low increase Area. Of the secondary Areas, Area C ranks as a high increase Area and Area 6a as a medium high increase Area. About 28% of the teachers in primary Areas held provisional certificates, while teachers who held sub-standard certificates and had less than four years of training amounted to 16 and 17% respectively of the teachers in primary Areas. Of teachers in secondary Areas, 27% held provisional certificates, about 21% were teaching under sub-standard certificates and 15% had less than four years of training.

3. Central Michigan College of Education. Of those teachers in the total population who completed work for certificates at Central Michigan College, 36% were located in Metropolitan Areas and 64% in Non-metropolitan Areas. About 85% of the teachers trained at this institution were located in two primary demand Areas, 4b and 5a and four secondary Areas, A, 3, 4a and 5b. Of the primary Areas, Area 5a is estimated to have a medium low rate of population increase and 4b a low rate of increase. Of the secondary Areas all but Area A rank as low increase Areas, while Area A is estimated to have a medium low increase rate. Of the teachers in primary Areas, about 25% held provisional certificates, 31% held sub-standard certificates and 31% had less than four years of training. Of the teachers in secondary Areas about one-fourth held provisional certificates, another

fourth held sub-standard certificates and a fourth had less than four years of training.

4. Northern Michigan College of Education. Of those teachers in the total population who completed work for certificates at Northern Michigan College, one-fourth were located in Metropolitan Areas and three-fourths in Non-metropolitan Areas. About 62% of the teachers trained at this institution were located in two primary demand Areas, 1 and 2. Area 1 is estimated to have the lowest rate of population change of all Areas, and Area 2 ranks as a medium low increase Area. About 23% of the teachers of these two Areas held provisional certificates, while 15% held sub-standard certificates and 26% had less than four years of training.

5. Michigan State College. Of those teachers in the total population who completed work for certificates at Michigan State College, 52.5% were located in Metropolitan Areas and 47.5% were located in Non-metropolitan Areas. About 27% of the teachers trained at this institution were located in primary demand Area E and secondary Area 7. It will be noted that, whereas 60% or more of the teachers of the institutions discussed above were located in primary and secondary Areas, only a little over a fourth of the teachers trained at Michigan State were located in primary and secondary Areas. Teachers from this institution were more extensively distributed throughout the state; at least 1% of the teachers from Michigan State were located in every Area and 4% or more of the Michigan State trained teachers were located in each of nine Areas. Primary Area E is predicted to have a high rate of general population increase and secondary Area 7 ranks as a medium low increase Area. Of the teachers in primary Area E, about 32% held provisional certificates, about 14% held

sub-standard certificates and 14% had less than four years of training.

6. University of Michigan. Of those teachers in the total population who completed work for certificates at the University of Michigan, 59% were located in Metropolitan Areas and 41% in Non-metropolitan Areas. About 46% of the teachers from this institution were located in three secondary demand Areas, F1, F3 and 8. At least 1% of the teachers from this institution were located in every Area and 4% or more of the teachers from the University of Michigan were located in each of six Areas. Two of the secondary demand Areas, F1 and 8 are predicted to have high rates of population increase, while the third, Area F3, ranks as a medium high increase Area. Of the teachers located in these three Areas, about 35% held provisional certificates, 11% held sub-standard certificates and about 10% had less than four years of training.

7. Wayne University. Of those teachers in the total population who completed work for certificates at Wayne University, 88% were located in Metropolitan Areas and 12% in Non-metropolitan Areas. About 85% of the teachers from this institution were located in three secondary demand Areas, F1, F2 and F3. Two of these Areas, F1 and F2 are predicted to have high rates of population increase, while Area F3 ranks as a medium high increase Area. Of the teachers in these three Areas, about 35% held provisional certificates, about 10% held sub-standard certificates and 9% had less than four years of training.

VI. SUMMARY OF FINDINGS FOR SEPARATE ECONOMIC AREAS

It is the purpose of this chapter to present a brief summary of the major findings for each Economic Area. Findings for the City of Detroit were summarized from the original study (14) and are also presented in this chapter. Table 30 provides a quick overview of each Area for eight of the items of data collected relative to characteristics of the teaching population, the three factors relating to community and school finance and four factors related to future teacher supply and demand. Areas were ranked for each of these factors and were then grouped according to the following classifications:

I Areas having the five highest ranks

II Areas ranking medium high, in places six through eleven

III Areas ranking medium low, in places twelve through seventeen

IV Areas having the five lowest ranks

The meaning of a high or low rank is indicated by the stub heading for each item of the table. It may be observed from this table that most Areas tend to rank rather consistently in the same group for the primary and secondary items of teacher characteristics.

In the summaries which follow, only the more distinctive characteristics of each teaching population have been listed. A distinctive characteristics may be roughly defined as one which is notable because, (a) the given population ranks unusually high or low on the given item as compared to other Areas and to the total distribution of teachers, or (b) because

TABLE 30

SUMMARY OF RANKS ON SELECTED TEACHER CHARACTERISTICS, SCHOOL AND COMMUNITY FINANCE AND FACTORS RELATED TO TEACHER SUPPLY AND DEMAND FOR EACH ECONOMIC AREA

	Economic Area																					
	A	B	C	D	E	F1	F2	F3	G	1	2	3	4a	4b	5a	5b	6a	6b	7	8	9a	9b
High Ave. Amt. training	III	II	III	I	II	I	II	I	I	III	IV	III	III	IV	IV	IV	I	II	IV	II	III	II
Low % sub-stand. certifs.	III	II	III	II	I	I	II	I	I	I	III	IV	III	IV	IV	IV	II	II	IV	II	III	III
Low % G, H, K districts	II	III	II	I	II	I	II	I	II	I	I	III	III	IV	III	IV	IV	IV	IV	II	III	III
High % spec. ed. personnel	II	I	III	I	I	I	II	II	I	III	III	IV	IV	IV	II	IV	III	IV	III	II	III	II
High % certified 1928-47	II	II	II	I	I	IV	III	I	II	I	III	IV	III	IV	I	IV	II	II	III	IV	III	III
Low % 5-25 yrs. teach.*	II	I	II	I	I	II	IV	II	I	II	II	IV	IV	III	III	IV	III	III	IV	I	III	III
High % 20yrs. or more pres.sch.*	I	I	II	I	II	III	IV	II	I	I	II	III	IV	IV	III	IV	II	III	III	III	IV	II
High % 0-4 yrs. other schools*	II	II	II	II	III	II	III	I	I	I	I	IV	IV	IV	IV	III	I	III	IV	II	III	III
High per pupil expenditures	IV	II	III	IV	II	IV	IV	I	I	I	III	II	III	III	II	IV	III	II	III	I	II	I
High per pupil teacher salaries	II	I	II	III	I	II	III	I	I	II	IV	III	IV	IV	II	IV	III	III	III	I	IV	II
High per capita bank deposits	I	I	II	II	II	I	I	I	II	III	IV	IV	IV	IV	III	III	III	III	IV	II	II	III
High rate population change	III	III	I	II	I	I	I	IB**	II	IV	III	IV	IV	IV	III	IV	II	II	III	I	III	II
High rate school attendance	I	II	II	II	I	I	III	I	III	III	III	III	I	II	II	IV	IV	III	IV	IV	IV	II
High rate teacher retirement	I	I	II	I	II	II	IV	II	I	I	II	II	III	IV	III	IV	IV	III	III	III	IV	III
High rate of tchr.re-entry	IV	II	II	II	II	III	I	III	I	IV	III	I	III	III	IV	II	IV	I	III	IV	II	I

*Adjusted data

**Includes City of Detroit

the rank of the given population for the item represents a marked departure from the over-all pattern displayed for the characteristics of the teaching population of the Area. Included in each summary is a brief synopsis of factors relating to future teacher supply and demand in the Area.

Area A - Saginaw County

Data were complete for at least 90% of the teachers of Area A for every item examined. Distinctive characteristics found for the teaching population of this Area are:

1. A lower average amount of training and a higher percentage of teachers with less than four years of training than for any other Metropolitan Area.

2. An unusually high percentage of teachers holding Life certificates and an unusually low percentage of teachers holding provisional and permanent certificates.

3. Compared to other Metropolitan Areas, a high percentage of teachers holding sub-standard certificates, especially State Limiteds.

4. Over 60% of the teaching population located in type C district schools of the City of Saginaw.

5. An unusually low percentage of teachers employed in L, I and J districts, especially in rural agricultural districts.

6. Compared to other Metropolitan Areas, a high percentage of teachers employed in districts of types G, H and K, especially in the rural K districts.

7. A lower percentage of administrative personnel and a higher percentage of elementary teachers than for any other Area.

8. About 40% of the teaching population trained at Central Michigan College and another 13% training at Michigan Normal College.

9. A high percentage of teachers certified before 1928 and before 1948, with a correspondingly low percentage of teachers certified since 1947.

10. Unusually high percentages of teachers having long years of total teaching experience and long years of teaching in the present school.

11. A relatively high percentage of teachers having long years of teaching in other schools.

Factors related to future teacher demand in this Area include:

1. A medium low predicted rate of population change, with an estimated general population for 1960 of approximately 185,000, an increase of about 31,000 over 1950.

2. A very high rate of school attendance.

3. An unusually high predicted rate of teacher retirement.

4. An unusually low estimated rate of re-entry into teaching.

Area B - Kent County

Data were complete for over 96% of the teachers of Area B for every item examined. Distinctive characteristics found for the teaching population of this Area include:

1. Compared to other Metropolitan Areas, a low average amount of training and a high percentage of teachers with less than four years of training.

2. An unusually high percentage of teachers holding Life certificates.

3. Compared to other Metropolitan Areas, a low percentage of teachers holding provisional and permanent certificates, especially secondary certificates, and a high percentage of teachers holding sub-standard certificates.

4. Over half of the teaching population employed in the B type school district of the City of Grand Rapids.

5. Compared to other Metropolitan Areas, a low percentage of teachers employed in L, I and J districts and the highest percentage of teachers employed in districts G, H and K, with a very high percentage in rural K districts.

6. An unusually high percentage of special education personnel.

7. An unusually high percentage of teachers trained at private institutions, with about 8% of the teaching population trained at Calvin and Aquinas Colleges, both located in this Area.

8. Over 35% of the teaching population trained at Western Michigan College and about 8% of the teachers from each of two other institutions, Michigan State College and Michigan Normal.

9. An unusually high percentage of teachers certified before 1928 and an unusually low percentage of teachers certified since 1947.

10. Unusually high percentages of teachers with long years of total teaching, long years of teaching in the present school, and long years of teaching in other schools.

Factors related to future demand for teachers in this Area include:

1. A medium low predicted rate of population change, with an

estimated general population for 1960 of approximately 341,500, an increase of about 53,000 over 1950.

2. A medium high rate of school attendance.

3. An unusually high predicted rate of teacher retirement.

4. A medium high estimated rate of re-entry into teaching.

Area C - Muskegon County

Data were complete for over 93% of the teachers of Area C for every item examined. Distinctive characteristics found for the teaching population of this Area include:

1. Compared to other Metropolitan Areas, a low average amount of training, and the lowest percentage of teachers having over four years of training.

2. Compared to other Metropolitan Areas, a low percentage of teachers holding provisional and permanent certificates and the highest percentage of teachers holding sub-standard certificates, with an unusually high percentage of teachers holding State Board Special certificates.

3. Over half of the teaching population employed in districts of types D and E.

4. An unusually low percentage of administrative personnel and an unusually high percentage of elementary teachers.

5. Compared to other Metropolitan Areas, the lowest percentage of special education personnel.

6. An unusually high percentage of teachers trained at institutions located outside of Michigan.

7. About 38% of the teaching population trained at Western Michigan College and another 10% trained at Central Michigan College.

8. Distributions of teachers by date of certificate and factors of teaching experience which are similar to the total distribution of teachers on these items.

Factors related to future teacher demand in this Area include:

1. A high predicted rate of population change, with an estimated general population for 1960 of approximately 155,700, an increase of about 34,000 over 1950.

2. A medium high rate of school attendance.

3. A medium high predicted rate of teacher retirement.

4. A medium high estimated rate of re-entry into teaching.

Area D - Genesee County

Data were complete for over 96% of the teachers of Area D for every item examined. Distinctive characteristics found for the teaching population of this Area include:

1. A high average amount of training.

2. An unusually high percentage of teachers holding Life certificates and, compared to other Metropolitan Areas, a relatively low percentage of teachers holding provisional and permanent certificates, especially elementary certificates.

3. Over half of the teaching population employed in the B district schools of the City of Flint, and a low percentage of teachers employed in G, H and K districts.

4. An unusually low percentage of elementary teachers and a percentage of special education personnel that is higher than for any other Area.

5. Over 30% of the teaching population trained at Michigan Normal College and another 16% trained at Central Michigan College.

6. An unusually high percentage of teachers certified before 1928 and before 1948.

7. Unusually high percentages of teachers with long years of total teaching experience and long years of teaching in the present school.

8. An unusually low percentage of teachers having more than four years of teaching in other schools.

Factors related to future teacher demand in this Area include:

1. A medium high predicted rate of population change, with an estimated general population for 1960 of approximately 327,300, an increase of about 56,000 over 1950.

2. A medium high rate of school attendance.

3. An unusually high predicted rate of teacher retirement.

4. A medium high estimated rate of re-entry into teaching.

Area E - Ingham County

Data were complete for over 94% of the teachers of Area E for every item examined. Distinctive characteristics found for the teaching population of this Area include:

1. An average amount of training that is below the average for the Metropolitan population.

2. A percentage of teachers in districts B through F that is higher than for any other Area, with over 55% of the teaching population employed in the C district schools of the City of Lansing.

3. An unusually low percentage of teachers in L, I and J districts and, compared to other Metropolitan Areas, a relatively high percentage of teachers employed in G, H and K districts.

4. High percentages of administrative and special education personnel.

5. An unusually high percentage of teachers from state-supported institutions, about 27% of the teaching population having been trained at Michigan State College, located in this Area.

6. About 17% of the teaching population trained at Michigan Normal College, and another 14% trained at Western Michigan College.

7. Compared to other Metropolitan Areas, the lowest percentage of teachers from outside of Michigan and a relatively low percentage of teachers from private institutions.

8. Unusually high percentages of teachers with less than 5 and more than 24 years of teaching experience.

9. An unusually low percentage of teachers with long years of teaching in other schools.

Factors related to future teacher demand in this Area include:

1. A high predicted rate of population change, with an estimated general population for 1960 of approximately 223,700, an increase of close to 50,800 over 1950.

2. A rate of school attendance that is higher than for any other Area.

3. A medium high predicted rate of teacher retirement.

4. A medium high estimated rate of re-entry into teaching.

Area F1 - Oakland County

Data were complete for over 99% of the teachers of Area F1 for every item examined. Distinctive characteristics found for the teaching population of this Area include:

1. A higher average amount of training than for both the total and Metropolitan populations.

2. Over 90% of the teachers having four or five years of training.

3. Low percentages of teachers holding Life and sub-standard certificates.

4. A percentage of teachers holding provisional and permanent certificates that is higher than for any other Area.

5. Almost 20% of the teaching population holding elementary provisional certificates, a percentage that is higher than for any other Area.

6. An unusually high percentage of teachers employed in districts of types L, I and J, especially in rural agricultural schools and large districts outside of corporate limits.

7. An unusually low percentage of teachers employed in districts of types G, H and K.

8. A relatively high percentage of special education personnel.

9. A high percentage of teachers trained outside of Michigan.

10. About 24% of the teaching population trained at Michigan Normal College, over 16% at Wayne University and about 9% at the University of Michigan.

11. An unusually low percentage of teachers certified from 1928 to 1948, and a very high percentage of teachers certified since 1947.

12. Relatively high percentages of teachers having less than five years of total teaching and few years of teaching in the present school.

Factors related to future teacher demand in this Area include:

1. A very high predicted rate of population change, with an estimated general population for 1960 of approximately 577,000, an increase of about 181,000 over 1950.

2. A very high rate of school attendance.

3. A medium high predicted rate of teacher retirement.

4. A medium low estimated rate of re-entry into teaching.

Area F2 - Macomb County

Data were complete for over 94% of the teachers of Area F2 for every item examined. Distinctive characteristics found for the teaching population of this Area include:

1. An average amount of training that is higher than for the total population, but lower than for the Metropolitan population.

2. An unusually low percentage of teachers holding Life certificates, and an unusually high percentage of teachers holding provisional and permanent certificates, especially secondary certificates.

3. A low percentage of teachers employed in districts of types B through F, compared to other Metropolitan Areas.

4. An unusually high percentage of teachers employed in districts of types L, I and J, especially in large districts outside of corporate limits.

5. An unusually high percentage of administrative personnel.

6. About 27% of the teaching population trained at Michigan Normal College, 15% at Wayne University and over 7% at Central Michigan College.

7. An unusually low percentage of teachers certified before 1928 and an unusually high percentage of teachers certified since 1947.

8. Unusually low percentages of teachers who have had long years of total teaching and of teaching in the present school.

Factors related to future teacher demand in this Area include:

1. A predicted rate of population change that is higher than for any other Area, with an estimated general population for 1960 of about 302,000, an increase of 117,000 over 1950.

2. A medium low rate of school attendance.

3. A low predicted rate of teacher retirement.

4. A high estimated rate of re-entry into teaching.

Area F3 - Wayne County
(Exclusive of the City of Detroit)

Data were complete for over 97% of the teachers of Area F3 for every item examined. Distinctive characteristics found for the teaching population of this Area include:

1. A very high average amount of training.

2. Over 91% of the teaching population having four or five years of training.

3. An unusually high percentage of teachers holding provisional and permanent certificates, especially elementary certificates.

4. An unusually low percentage of teachers holding sub-standard certificates.

5. A very high percentage of teachers employed in districts of the group B through F.

6. A percentage of teachers employed in districts of types G, H and K that is lower than for any other Area.

7. A high percentage of teachers in large districts outside of corporate limits.

8. Relatively high percentages of administrative and of special education personnel.

9. A relatively high percentage of teachers from outside of Michigan and a relatively low percentage of teachers from private institutions.

10. About 19% of the teaching population trained at Wayne University and about 2% from Marygrove, Mercy and the University of Detroit, all institutions located in this Area.

11. About 26% of the teaching population trained at Michigan Normal College and another 9% at the University of Michigan.

12. A very high percentage of teachers certified from 1928 through 1947, and a low percentage of teachers certified since 1947.

13. A relatively high percentage of teachers having long years of teaching in the present school.

14. A percentage of teachers having less than 5 years in other schools that is higher than for any other Area.

Factors related to future teacher demand in this Area include:

1. A medium high predicted rate of population change, with an estimated general population for 1960 of approximately 2,975,400, an increase of about 540,200 over 1950.[1]

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[1]Includes Detroit.

2. A high rate of school attendance.
3. A medium high predicted rate of teacher retirement.
4. A medium low estimated rate of re-entry into teaching.

The City of Detroit

Although the teachers of Detroit were excluded from this study, a brief summary of the general characteristics of the Detroit teaching population may make possible comparisons of this population to those of Out-state Areas. Analyses of the Detroit population were included in the study prepared for the Council of Presidents (15). The information presented below was summarized from that report, and is based on data for at least 97% of the 1953-54 Detroit teaching population for every item of information collected. Since the available data for Detroit teachers were not comparable to data for Out-state teachers for all items, comparisons between the Detroit and Out-state populations should be considered as estimates only for non-comparable items.

It was not possible to obtain an average amount of training for Detroit teachers. However, the percentage of Detroit teachers who had no degrees was slightly lower than the percentage of teachers in the Out-state population who had less than four years of training. The percentage of Detroit teachers who held Bachelors degrees was lower than the percentage of the Out-state population who had four years of training. The percentage of Detroit teachers who held advanced degrees (43.5%) was higher than the percentage of teachers who had more than four years of training in any Out-state Area.

The Detroit teaching population included a lower percentage of teachers holding sub-standard certificates than in any Out-state Area, and a higher percentage of teachers holding Life certificates than in any Area except Area 1. The percentage of Detroit teachers who held provisional and permanent certificates was exactly equal to the percentage of teachers in the total Out-state population who held these types of certificates, although the percentage of Detroit teachers who held elementary certificates was higher than for any Out-state Area.

All Detroit teachers are classified in school district type A. The distribution of Detroit teachers by teaching assignment, compared to the distribution of all Out-state teachers, included a relatively high percentage of administrative personnel and a slightly higher percentage of elementary teachers. The percentage of Detroit teachers employed at the secondary level was lower than for any Out-state Area, while the percentage of Detroit special education personnel (8.9%) was much higher than the percentage of special education personnel in any Out-state Area.

Information regarding training institutions was not comparable for the Detroit and Out-state groups. It is known, however, that a high percentage of Detroit teachers had received their highest degrees from state-supported institutions, especially Wayne University, the University of Michigan and Michigan Normal College.

It was not possible to record information regarding dates of certificate, and teaching experience for Detroit teachers. It was possible to record the date of highest degree (date of certificate for those teachers holding no degrees). From the results obtained on this item, it can be estimated that the Detroit population has a high percentage of

teachers with long years of teaching experience and a high future rate of teacher retirement. Wayne county, including Detroit, ranks in the medium high group in terms of predicted rate of population change. Consideration of the average teacher salaries of the various types of school districts (14:9), indicates that Detroit may have less difficulty meeting the demand for teachers than other types of districts. As of 1950, the average salary of Detroit teachers was considerably higher than the average salary of teachers in any other type of school district and amounted to 138% of the 1950 average industrial wage in Michigan.

Area G - Kalamazoo County

Data were complete for over 95% of the teachers of Area G for every item examined. Distinctive characteristics found for the teaching population of this Area include:

1. An average amount of training that is higher than for any other Area, almost 93% of the teaching population having four or five years of training.

2. An unusually high percentage of teachers holding Life certificates and a percentage of teachers holding sub-standard certificates that is lower than for any other Area.

3. About 46% of the teaching population employed in the C district schools of the City of Kalamazoo.

4. Compared to other Metropolitan Areas, relatively high percentages of teachers employed in the group of districts G, H and K and the group of districts L, I and J, especially in rural agricultural schools.

5. An unusually high percentage of special education personnel and an unusually low percentage of secondary teachers.

6. Almost 80% of the teaching population trained at state-supported institutions, including over 68% trained at Western Michigan College, located in this Area.

7. About 5% of the teaching population from Kalamazoo and Nazareth Colleges, both located in this Area.

8. An unusually high percentage of teachers certified before 1928 and an unusually low percentage of teachers certified since 1947.

9. A high percentage of teachers with over 24 years of teaching experience and an unusually low percentage of teachers with 5 to 25 years of teaching.

10. A high percentage of teachers with long years of teaching in the present school and very few years of teaching in other schools.

Factors related to future teacher demand in the Area include:

1. A high predicted rate of population change, with an estimated general population for 1960 of approximately 158,900, an increase of about 32,200 over 1950.

2. A medium low rate of school attendance.

3. An unusually high predicted rate of teacher retirement.

4. A high estimated rate of re-entry into teaching.

Area 1 - Western Half of the Upper Peninsula

Data were complete for over 94% of the teachers of Area 1 for every item examined. Distinctive characteristics found for the teaching

population of this Area include:

1. An average amount of training below the average for all teachers, but above the average for the Non-metropolitan population.

2. A percentage of teachers holding Life certificates (62%) that is higher than for any other Area and an unusually low percentage of teachers holding sub-standard certificates.

3. A percentage of teachers holding provisional and permanent certificates that is lower than for any other Area, with an especially low percentage of elementary certificates.

4. An unusually low percentage of teachers employed in G, H and K districts and a lower percentage of teachers in the rural K district schools than for any other Area.

5. A percentage of teachers employed in the group of districts L, I and J that is higher than for any other Area, including especially high percentages of teachers in rural agricultural and township districts.

6. Percentages of administrative and secondary personnel that are higher than in any other Area and a percentage of elementary teachers that is lower than for any other Area.

7. An unusually high percentage of teachers from outside of Michigan, over 10% of the teachers having been trained in Wisconsin.

8. A low percentage of teachers from state-supported institutions, but a high percentage (almost 55%) of its teachers from Northern Michigan College, located in this Area.

9. A percentage of teachers from private institutions (less than 2%) that is lower than for any other Area.

10. A highly unusual distribution of teachers by date of certificate, with over one-third of the teaching population certified before 1928, about 30% certified between 1928 and 1948 and less than a third certified since 1947.

11. A higher percentage of teachers with 25 or more years of teaching experience and a lower percentage of teachers with less than 5 years of teaching than for any other Area.

12. Almost a fourth of the teaching population having 20 or more years of teaching in the present school, a higher percentage than for any other Area.

13. A lower percentage of teachers having less than 5 years in the present school than for any other Area and an unusually high percentage of teachers with less than 5 years of teaching in other schools.

Factors related to future teacher demand in this Area include:

1. A very low predicted rate of population change, with an estimated general population of about 177,900 in 1960, a decrease of about 400 from 1950.

2. A medium low rate of school attendance.

3. An extremely high predicted rate of teacher retirement.

4. A very low estimated rate of re-entry into teaching.

Area 2 - Eastern Half of the Upper Peninsula

Data were complete for over 96% of the teachers of Area 2 for every item examined. Distinctive characteristics found for the teaching population of this Area include:

1. An unusually low average amount of training and an unusually high percentage of teachers with less than four years of training.

2. A low percentage of teachers holding provisional and permanent certificates and an especially low percentage of teachers holding elementary certificates.

3. A relatively high percentage of teachers holding sub-standard certificates, especially State Board Specials.

4. An unusually low percentage of teachers employed in districts of types G, H and K and an unusually high percentage of teachers employed in districts of the L, I and J types, with a higher percentage of teachers in township districts than for any other Area.

5. An unusually low percentage of elementary teachers and an unusually high percentage of secondary teachers.

6. A higher percentage of teachers from outside of Michigan than for any other Area, almost 12% of the teaching population having been trained in Wisconsin.

7. Over 43% of the teaching population trained at Northern Michigan College.

8. An extremely low percentage of teachers from private institutions.

9. An unusually low percentage of teachers with 20 or more years of teaching in other schools and a high percentage of teachers with less than 5 years in other schools.

Factors related to future teacher demand in this Area include:

1. A medium low predicted rate of population change, with an estimated general population of about 150,200 by 1960, an increase of about 26,200 over 1950.

2. A medium low rate of school attendance.

3. A medium high predicted rate of teacher retirement.

4. A medium low estimated rate of re-entry into teaching.

Area 3 - Northwestern Lower Peninsula

Data were complete for over 92% of the teachers of Area 3 for every item examined. Distinctive characteristics found for the teaching population of this Area include:

1. A low average amount of training.

2. An unusually low percentage of teachers holding provisional and permanent certificates and an unusually high percentage of teachers holding sub-standard certificates.

3. A high percentage of teachers employed in districts G, H and K.

4. An unusually high percentage of administrative personnel and an unusually low percentage of special education personnel.

5. A relatively low percentage of teachers from private institutions.

6. About 30% of the teaching population trained at Central Michigan College and another 15% trained at Western Michigan College.

7. An unusually low percentage of teachers with less than 5 years of teaching experience and an unusually high percentage of teachers with 5 to 25 years of teaching.

8. An unusually low percentage of teachers certified between 1928 and 1948.

9. An unusually low percentage of teachers with less than 5 years of teaching in other schools and an unusually high percentage of teachers with 5 to 19 years of teaching in other schools.

Factors related to future teacher demand in this Area include:

1. A low predicted rate of population change, with an estimated general population for 1960 of approximately 117,000, an increase of about 16,300 over 1950.

2. A medium low rate of school attendance.

3. A medium high predicted rate of teacher retirement.

4. A high estimated rate of re-entry into teaching.

Area 4a - North Central Lower Peninsula

Data were complete for over 88% of the teachers of Area 4a for every item examined. Data were unavailable for over 10% of the teaching population for the items of amount of training, training institution, total years of teaching and years of teaching in other schools. Distinctive characteristics found for the teaching population of this Area include:

1. A low average amount of training and an unusually low percentage of teachers having more than four years of training.

2. A relatively low percentage of teachers holding provisional and permanent certificates, including an unusually low percentage of teachers holding elementary certificates.

3. An unusually high percentage of teachers holding sub-standard certificates.

4. An unusually high percentage of teachers employed in districts L, I and J, including a percentage of teachers in rural agricultural schools that is higher than for any other Area.

5. A high percentage of secondary teachers and an unusually low percentage of special education personnel.

6. Unusually low percentages of teachers from outside of Michigan and from private institutions, with a correspondingly high percentage of teachers from state-supported institutions.

7. About 36% of the teaching population trained at Central Michigan College, another 14% at Western Michigan College and about 2.6% trained at Ferris Institute, an institution located in this Area.

8. A low percentage of teachers with 25 or more years of teaching and an unusually high percentage of teachers with 5 to 25 years of teaching.

9. Unusually low percentages of teachers with long years of teaching in the present school and with only a few years of teaching in other schools.

Factors related to the future teacher demand in this Area include:

1. A low predicted rate of population change, with an estimated general population for 1960 of about 157,300, an increase of approximately 19,900 over 1950.

2. An unusually high rate of school attendance.

3. A medium low predicted rate of teacher retirement.

4. A medium low estimated rate of re-entry into teaching.

Area 4b - Northeastern Lower Peninsula

Data were complete for over 94% of the teachers of Area 4b for every item examined. Distinctive characteristics found for the teaching population of this Area include:

1. An average amount of training that is lower than for any other Area, about a third of the teachers having less than four years of training.

2. A percentage of teachers holding Life certificates that is lower than for any other Area.

3. An unusual distribution of provisional and permanent certificates, with an unusually high percentage of teachers holding secondary certificates and an unusually low percentage of teachers holding elementary certificates.

4. A percentage of teachers holding sub-standard certificates that is higher than for any other Area, having the highest percentages of teachers holding State Board Special and County Limited certificates of any Area.

5. Unusually high percentages of teachers in the groups of districts G, H and K, and L, I and J.

6. An unusually high percentage of secondary teachers and a percentage of special education personnel that is lower than for any other Area.

7. An unusually high percentage of teachers trained at state-supported institutions, a low percentage of teachers trained at private institutions and a percentage of teachers from county normals that is higher than for any other Area.

8. Almost half of the teaching population trained at Central Michigan College with another 10% trained at Michigan Normal College.

9. Compared to other Areas, the lowest percentages of teachers certified before 1928 and before 1948, with about two-thirds of the population certified since 1947.

10. An unusually low percentage of teachers with 25 or more years of teaching experience and an unusually high percentage of teachers with less than five years of teaching.

11. Compared to other Areas, the lowest percentages of teachers with 20 or more, and 5 or more years of teaching in the present school, over 67% of the teachers having had less than 5 years of teaching in the present school.

12. A percentage of teachers with less than 5 years of teaching in other schools that is lower than for any other Area.

Factors related to future teacher demand in this Area include:

1. A low predicted rate of population change, with an estimated general population of about 139,900 by 1960, an increase of approximately 19200 over 1950.

2. A medium high rate of school attendance.

3. A low predicted rate of teacher retirement.

4. A medium low estimated rate of re-entry into teaching.

Area 5a - Central Lower Peninsula

Date were complete for at least 82% of the teachers of Area 5a for every item examined. Data were unavailable for more than 10% of the teaching population for each of the three items relating to years of teaching experience. Distinctive characteristics found for the teaching population of this Area include:

1. An unusually low average amount of training, over 30% of the teaching population having less than four years of training.

2. An unusually low percentage of teachers holding provisional and permanent certificates and an unusually high percentage of teachers holding sub-standard certificates, with a percentage of teachers holding State Limited certificates that is higher than for any other Area.

3. An unusually low percentage of teachers employed in L, I and J districts, and an unusually high percentage of teachers employed in G, H and K districts, with a percentage of teachers in the rural K districts that is higher than for any other Area.

4. A high percentage of secondary teachers and a percentage of elementary teachers that is lower than for any other Area.

5. Almost half of the teaching population trained at Central Michigan College, with another 2.6% trained at Alma College, both institutions located in this Area.

6. An unusually low percentage of teachers from outside of Michigan, and an unusually high percentage of teachers trained at state-supported institutions.

7. An unusually high percentage of teachers certified between 1928 and 1948.

8. Relatively low percentages of teachers with long years of teaching experience and with long years of teaching in the present school.

9. An unusually high percentage of teachers with 20 years or more of teaching in other schools.

Factors related to future teacher demand in this Area include:

1. A medium low predicted rate of population change, with an estimated general population for 1960 of approximately 259,300, an increase of about 41,750 over 1950.

2. A medium high rate of school attendance.

3. A medium low predicted rate of teacher retirement.

4. A low estimated rate of re-entry into teaching.

Area 5b - Thumb Area of Lower Peninsula

Data were complete for over 74% of the teachers of Area 5b for every item examined. Data were unavailable for over 20% of the teaching population for each of the four items of teaching experience and for over 10% of the teachers for the item of training institution. Distinctive characteristics found for the teaching population of this Area include:

1. A very low average amount of training, only 64% of the teaching population having four or five years of training.

2. An unusually low percentage of teachers holding Life certificates and a very high percentage of teachers holding sub-standard certificates, especially State and County Limited certificates.

3. An unusual distribution of provisional and permanent certificates, with a very high percentage of teachers holding secondary certificates compared to a very low percentage of teachers holding elementary certificates.

4. A higher percentage of teachers in G, H and K districts than for any other Area and an unusually low percentage of teachers employed in districts of types B through F.

5. An unusually low percentage of special education personnel and an unusually high percentage of secondary teachers.

6. A percentage of teachers from outside of Michigan that is lower than for any other Area.

7. About a fourth of the teaching population trained at each of two institutions, Central Michigan College and Michigan Normal College.

8. Unusually low percentages of teachers certified before 1928 and before 1948.

9. A percentage of teachers with 25 or more years of teaching experience that is lower than for any other Area, and an unusually high percentage of teachers with less than 5 years of teaching.

10. A very low percentage of teachers with long years of teaching in the present school and a very high percentage of teachers with less than 5 years in the present school.

Factors related to future teacher demand in this Area include:

1. A low predicted rate of population change, with an estimated general population for 1960 of approximately 114,600, an increase of about 12,400 over 1950.

2. A rate of school attendance that is lower than for any other Area.

3. A low predicted rate of teacher retirement.

4. A medium high estimated rate of re-entry into teaching.

Area 6a - West Central Lower Peninsula

All results for the teaching population of this Area must be viewed with some caution due to the omission of 146 rural teachers for whom records could not be obtained. Items which would tend to be most influenced

by this lack of data would be amount of training, type of certificate, type of school district and teaching assignment. Inclusion of these unrecorded teachers would tend to lower the average amount of training, increase the percentage of teachers holding sub-standard certificates, increase the percentage of teachers employed in districts G, H and K and increase the percentage of elementary teachers, especially those teaching all grades. Of the teachers for whom records were available, data were complete for over 72% of the teaching population for every item examined. Data were unavailable for over 20% of the teaching population for items of amount of training, years in the present and other schools, and whether the teacher had taught the previous year, and for over 10% of the teachers for the item of training institution. Characteristics found for the teaching population of this Area include:

1. A spuriously high average amount of training.

2. Umusually high percentages of teachers in districts of the groups B through F and G, H and K.

3. An unusually high percentage of elementary teachers and an unusually low percentage of secondary teachers.

4. A percentage of teachers from private institutions that is higher than for any other Area and unusually low percentages of teachers from outside of Michigan and from state-supported institutions.

5. Over 16% of the teaching population trained at Hope College, located in this Area, and about 40% of the teaching population trained at Western Michigan College.

6. A low percentage of teachers certified before 1928 and a high percentage of teachers certified since 1947.

7. A very high percentage of teachers with less than 5 years of teaching in other schools.

Factors related to future teacher demand in this Area include:

1. A medium high predicted rate of population change, with an estimated general population for 1960 of about 147,000, an increase of approximately 25,800 over 1950.

2. A low rate of school attendance.

3. A low predicted rate of teacher retirement.

4. A low estimated rate of re-entry into teaching.

Area 6b - Southwestern Corner, Lower Peninsula

Data were complete for over 84% of the teachers of Area 6b for every item examined. Data were unavailable for over 10% of the teaching population for each of the four items of teaching experience. Distinctive characteristics found for the teaching population of this Area include:

1. An average amount of training that is higher than the average for the total Non-metropolitan population.

2. Compared to other Non-metropolitan Areas, a relatively low percentage of teachers holding sub-standard certificates.

3. An unusually high percentage of teachers employed in districts of types G, H and K, especially in the G type districts.

4. Unusually low percentages of administrative and special education personnel.

5. An unusually high percentage of teachers from outside of Michigan, almost 8% of the teaching population having been trained in Illinois.

6. An unusually low percentage of teachers from state-supported

institutions, but over half of the teaching population trained at Western Michigan College.

7. About 2.6% of the teachers trained at Emmanuel Missionary College, located in this Area.

8. Unusually high percentages of teachers with less than 5 years of teaching in the present school and 20 or more years of teaching in other schools.

Factors related to future demand for teachers in this Area include:

1. A medium high predicted rate of population change, with an estimated general population for 1960 of approximately 192,900, an increase of about 38,000 over 1950.

2. A medium low rate of school attendance.

3. A medium low predicted rate of teacher retirement.

4. A high estimated rate of re-entry into teaching.

Area 7 - South Central Lower Peninsula

Data were complete for at least 84% of the teachers of Area 7 for every item examined. Data were unavailable for over 10% of the teaching population for each of the four items of teaching experience. Distinctive characteristics found for the teaching population of this Area include:

1. A low average amount of training.

2. An unusually high percentage of teachers employed in G, H and K districts.

3. An unusually high percentage of teachers holding sub-standard certificates, especially State Limited certificates.

4. Relatively low percentages of teachers trained at private institutions and outside of Michigan.

5. About 1% of the teaching population trained at Olivet College, located in this Area.

6. About 22% of the teaching population trained at Michigan Normal, 16% at Western Michigan College and 14% at Central Michigan College.

7. A low percentage of teachers having more than 24 years of teaching experience and an unusually high percentage of teachers having 5 to 25 years of teaching.

8. Low percentages of teachers with 20 or more years in the present school and less than five years of teaching in other schools.

Factors related to future demand for teachers in this Area include:

1. A medium low predicted rate of population change, with an estimated general population for 1960 of approximately 381,800, an increase of about 56,000 over 1950.

2. A low rate of school attendance.

3. A medium low predicted rate of teacher retirement.

4. A medium low estimated rate of re-entry into teaching.

Area 8 - Southeastern Lower Peninsula

Data were complete for at least 90% of the teachers of Area 8 for every item examined. Distinctive characteristics found for the teaching population of this Area include:

1. A high average amount of training, about 80% of the teaching population having four or five years of training.

2. An unusually low percentage of teachers holding Life certificates and an unusually high percentage of teachers holding provisional and permanent certificates, especially elementary certificates.

3. Compared to other Non-metropolitan Areas, the lowest percentage of teachers employed in districts G, H and K.

4. A low percentage of secondary teachers and, compared to other Non-metropolitan Areas, a high percentage of special education personnel.

5. An unusually high percentage of teachers from outside of Michigan, over 6% of the teachers having been trained in Ohio.

6. An unusually low percentage of teachers trained at private institutions.

7. About 14% of the teaching population trained at the University of Michigan and another 39% trained at Michigan Normal College, both located in this Area.

8. An unusually high percentage of teachers certified since 1947.

9. A percentage of teachers having less than 5 years of teaching experience that is higher than for any other Area.

10. A very high percentage of teachers having less than 5 years of teaching in the present school.

Factors related to future teacher demand in this Area include:

1. A high predicted rate of population change, with an estimated general population for 1960 of approximately 408,700, an increase of about 106,800 over 1950.

2. A low rate of school attendance.

3. A medium low predicted rate of teacher retirement.

4. A low estimated rate of re-entry into teaching.

Area 9a - South Central Border of Lower Peninsula

Data were complete for over 82% of the teachers of Area 9a for every item examined. Data were unavailable for more than 10% of the teaching population for the item of training institution, and each of the four items of teaching experience. Distinctive characteristics found for the teaching population of this Area include:

1. An average amount of training that is lower than the average for all teachers.

2. A percentage of teachers holding sub-standard certificates that is higher than that found in the distribution of all teachers.

3. A percentage of teachers employed in districts G, H and K that is higher than that found in the distribution of all teachers.

4. An unusually high percentage of elementary teachers.

5. A percentage of teachers from state-supported institutions that is lower than for any other Area.

6. A very high percentage of teachers trained at private institutions, over 16% of the teaching population having been trained at Adrian, Hillsdale, and Siena Heights Colleges, all located in this Area.

7. About 22% of the teaching population trained at Michigan Normal, another 18% at Western Michigan College and about 8% of the teaching population trained at institutions in Ohio.

8. An unusually low percentage of teachers certified before 1928.

9. Low percentages of teachers with long years of total teaching experience and long years of teaching in the present school.

10. A percentage of teachers having 20 or more years in other schools that is higher than for any other Area.

Factors related to future teacher demand in this Area include:

1. A medium low predicted rate of population change, with an estimated general population for 1960 of approximately 151,800, an increase of about 25,000 over 1950.

2. A low rate of school attendance.

3. A low predicted rate of teacher retirement.

4. A medium high estimated rate of re-entry into teaching.

Area 9b - Southwestern Border, Lower Peninsula

Data were complete for at least 76% of the teachers of Area 9b for every item examined. Data were unavailable for about 20% or more of the teaching population for items of years of teaching in the present and in other schools, and whether the teacher had taught the previous year. Distinctive characteristics found for the teaching population of this Area include:

1. An average amount of training that is lower than the average for all teachers.

2. A percentage of teachers holding sub-standard certificates that is higher than that in the distribution of all teachers.

3. Compared to other Non-metropolitan Areas, a high percentage of teachers in the group of districts, B through F.

4. A percentage of Special education personnel that is higher than for any other Non-metropolitan Area and an unusually low percentage of secondary teachers.

5. Almost 4% of the teaching population trained at Albion College, located in this Area.

6. About 47% of the teaching population trained at Western Michigan College.

7. Distributions of teachers for date of certificate and items of teaching experience that are very similar to the distributions of all teachers for these items.

Factors related to future teacher demand in this Area include:

1. A medium high predicted rate of population change, with an estimated general population for 1960 of about 260,000, an increase of approximately 49,800 over 1950.

2. A medium high rate of school attendance.

3. A medium low predicted rate of teacher retirement.

4. A high estimated rate of re-entry into teaching.

VII. SUMMARY AND CONCLUSIONS

This study analyzed the characteristics of the public school teaching population of Michigan by geographic sub-divisions of the state. Teachers were grouped into nine Metropolitan and thirteen Non-metropolitan Economic Areas, these Areas being substantially the same as those used for federal census and agricultural tabulations. Total populations of the Metropolitan and Non-metropolitan Areas and the populations of separate Economic Areas were analyzed for each of ten items of data.

Detroit teachers were excluded from these analyses. The 35,935 teachers included in the study were estimated to represent 99.6% of the Out-state public school teaching population. Records used for 9.4% of these teachers were for the school year 1953-54, while records for the remaining teachers were current as of the Fall of 1952. For every characteristic analyzed, data were complete for at least 92% of the total teaching population, 97% of all teachers located in Metropolitan Areas, 86% of all teachers located in Non-metropolitan Areas, 90% of the teachers of each Metropolitan Area and 72% of the teachers of each Non-metropolitan Area.

It was found that, compared to the distribution of all teachers, the total Metropolitan population included higher percentages of teachers: (a) employed in types of school districts supported by communities of 2,500 population and over, (b) certified before 1928 and before 1948, (c) holding Life certificates, and provisional and permanent certificates,

(d) having four or five years of college training, (e) who completed work for certificates at institutions outside of Michigan, state-supported and private institutions in Michigan, (f) who were classified as administrative and special education personnel, (g) who had had 25 or more years of teaching experience, (h) who had had 20 or more years of teaching experience in the present school, (i) who had had less than 5 years of teaching in other schools, and (j) who had not taught the previous year. Compared to the distribution of all teachers, the total Non-Metropolitan population included higher percentages of teachers: (a) employed in types of school districts supported by communities of less than 2,500 population, (b) certified since 1947, (c) holding sub-standard certificates, (d) having less than four years of college training, (e) who completed work for certificates at county normals, (f) who were classified as elementary and secondary teachers, (g) who had had 5 to 25 years of teaching experience, (h) who had had less than 5 years of teaching in the present school, (i) who had had 5 to 20 years and 20 or more years of teaching in other schools, and (j) who had taught the previous year.

Summaries of findings for each Economic Area were included in Chapter VI. The extent to which the characteristics of the teaching populations of separate Economic Areas differed from one another is illustrated by the following ranges found for selected categories of some of the items examined:

1. In average amount of training the populations ranged from 3.46 to 4.21 years of college education.

2. The percentages of teachers, (a) holding Life certificates ranged from 29.2 to 62.0%, (b) holding provisional and permanent

certificates ranged from 28.2 to 49.6%, (c) holding sub-standard certificates ranged from 7.0 to 37.7%.

3. The percentages of teachers in types of school districts supported by communities of 2,500 population or less ranged from 1.5 to 50.1%.

4. The percentages of teachers employed, (a) in administrative assignments ranged from 6.8 to 12.1%, (b) in special education assignments ranged from .2 to 4.5%, (c) in elementary assignments ranged from 44.3 to 54.9%, and (d) in secondary assignments ranged from 35.0 to 42.4%.

5. The percentages of teachers, (a) from state-supported institutions ranged from 53.0 to 79.7%, (b) from institutions outside of Michigan ranged from 7.5 to 24.9%, and (c) from private institutions ranged from 1.6 to 22.0%.

6. The percentages of teachers, (a) certified before 1928 ranged from 10.3 to 33.6%, and (b) certified since 1947 ranged from 32.5 to 66.3%.

7. The percentages of teachers, (a) who had had 25 or more years of teaching experience ranged from 9.6 to 28.2%, and (b) who had less than 5 years of teaching experience ranged from 20.9 to 40.2%.

Rank order correlation coefficients were computed for relationships between selected categories of most of the items of data analyzed. Medium to high correlations were found for a number of the relationships examined, the more important of these being between:

1. High average amount of training and
   a. Low percentage of teachers holding sub-standard certificates.
   b. Low percentage of teachers employed in school districts of types supported by communities of 2,500 population or less,

c. High percentage of special education personnel.

2. Low percentage of teachers holding sub-standard certificates and

a. Low percentage of teachers in school districts of the types supported by communities of 2,500 population or less.

b. High percentage of special education personnel.

The implications of the results of this study were discussed for three current problems of education in Michigan: (a) school district organization; (b) present and future demands for teachers; and, (c) teacher training in state-supported institutions during the period of high demand for teachers. Additional data relative to school and community finance, population trends, and rates of school attendance for each of the Economic Areas were introduced into these discussions.

Conclusions

Conclusions drawn from the results of this study have been included throughout the presentation and discussion of results. Some of the more general conclusions which may be drawn from the findings of this study are:

1. The teaching populations of separate geographic areas of the state vary to a marked degree in a number of characteristics, the teaching population of each Area presenting a unique pattern of characteristics.

2. Teaching populations of most of the Areas tend to rank rather consistently as high, medium high, medium low or low for a majority of the characteristics examined in this study.

3. Current problems of education in Michigan vary to a marked degree in terms of their importance and their difficulty of solution in the various geographic areas of the state.

4. Reorganization of school districts is indicated for a number of Areas in which the returns from relatively high expenditures for education are being dissipated by the high cost of operating a large number of small schools as separate administrative units.

5. Although the future demand for teachers, due to increased school enrollments, will not affect all areas of the state to the same extent, every Area will experience problems in satisfying the need for teachers, the combination of factors producing the need being unique for each Area.

6. All of the state-supported institutions which train teachers will be taxed beyond the limits of their present facilities if the increased demands for teachers are to be met. However, the extent of the demands upon these institutions, for both new teachers and in-service training of teachers in the present supply, will probably vary rather widely according to, (a) the nature and location of the institution, and (b) the trends in percentages of the teaching population supplied by the institution over the past several decades.

APPENDIX

TABLE 1

NUMBER OF TEACHERS IN EACH ECONOMIC AREA EMPLOYED IN EACH TYPE OF SCHOOL DISTRICT

Economic Area	Type of School District											Total
	B	C	D	E	F	G	H	K	L	I	J	
A		626				60	20	112	104	21	70	1,013
B	980				78	181	8	215	366	32	37	1,897
C			436	171		39	20	72	194	134	19	1,085
D	1,068				108	37	40	76	230	445	23	2,027
E		740		88	37	99	15	88	108	123	13	1,311
F1		556	686	612	41	77		42	296	680	454	3,444
F2				352	180	75	20	68	551	226		1,472
F3		958	999	497	556	30		38	384	517	617	4,596
G		454				62		76	122	269		983
Met. Total	2,048	3,334	2,121	1,720	1,000	660	123	787	2,355	2,447	1,233	17,828
1				194	307	84		10	9	586	285	1,475
2				340	102		1	15		301	250	1,009
3				157	133	75	10	154		232	53	814
4a				94	178	79	52	210		616	40	1,269
4b				98	46	183	29	152		374	208	1,090
5a		349		283	207	84	66	431	37	240	67	1,764
5b					121	102	118	200		277	21	839
6a				127	269	82	31	183	46	56	19	813
6b				390	113	174	68	216	116	200	28	1,305
7		397		132	529	117	186	614	166	480	25	2,646
8			571	367	207	102		266	150	394	130	2,187
9a				151	224	60	23	212		387	45	1,102
9b			437	94	339	48	55	236	69	498	18	1,794
Non-Met. Total		746	1,008	2,427	2,775	1,190	639	2,899	593	4,641	1,189	18,107
Total	2,048	4,080	3,129	4,147	3,775	1,850	762	3,686	2,948	7,088	2,422	35,935

TABLE 2

PER CENT OF TEACHERS IN EACH ECONOMIC AREA EMPLOYED IN EACH TYPE OF SCHOOL DISTRICT

Economic Area	Type of School District										
	B	C	D	E	F	G	H	K	L	I	J
A		61.8				5.9	2.0	11.0	10.3	2.1	6.9
B	51.7				4.1	9.5	.4	11.3	19.3	1.7	2.0
C			40.2	15.8		3.6	1.8	6.6	17.9	12.4	1.7
D	52.7				5.3	1.8	2.0	3.7	11.4	22.0	1.1
E		56.4		6.7	2.8	7.6	1.2	6.7	8.2	9.4	1.0
F1		16.1	19.9	17.8	1.2	2.2		1.2	8.6	19.8	13.2
F2				23.9	12.2	5.1	1.4	4.6	37.4	15.4	
F3		20.8	21.7	10.8	12.1	.7		.8	8.4	11.3	13.4
G		46.2				6.3		7.7	12.4	27.4	
Met. Total	11.5	18.7	11.9	9.7	5.6	3.7	.7	4.4	13.2	13.7	6.9
1				13.2	20.8	5.7		.7	.6	39.7	19.3
2				33.7	10.1		.1	1.5		29.8	24.8
3				19.3	16.4	9.2	1.2	18.9		28.5	6.5
4a				7.4	14.0	6.2	4.1	16.6		48.5	3.2
4b				9.0	4.2	16.8	2.7	13.9		34.3	19.1
5a		19.8		16.1	11.7	4.8	3.7	24.4	2.1	13.6	3.8
5b					14.4	12.2	14.1	23.8		33.0	2.5
6a				15.6	33.1	10.1	3.8	22.5	5.7	6.9	2.3
6b				29.9	8.7	13.3	5.2	16.6	8.9	15.3	2.1
7		15.0		5.0	20.0	4.4	7.0	23.2	6.3	18.2	.9
8			26.1	16.8	9.5	4.7		12.2	6.8	18.0	5.9
9a				13.7	20.3	5.5	2.1	19.2		35.1	4.1
9b			24.4	5.2	18.9	2.7	3.1	13.2	3.8	27.7	1.0
Non-Met. Total		4.1	5.6	13.4	15.3	6.6	3.5	16.0	3.3	25.6	6.6
Total	5.7	11.4	8.7	11.6	10.5	5.1	2.1	10.3	8.2	19.7	6.7

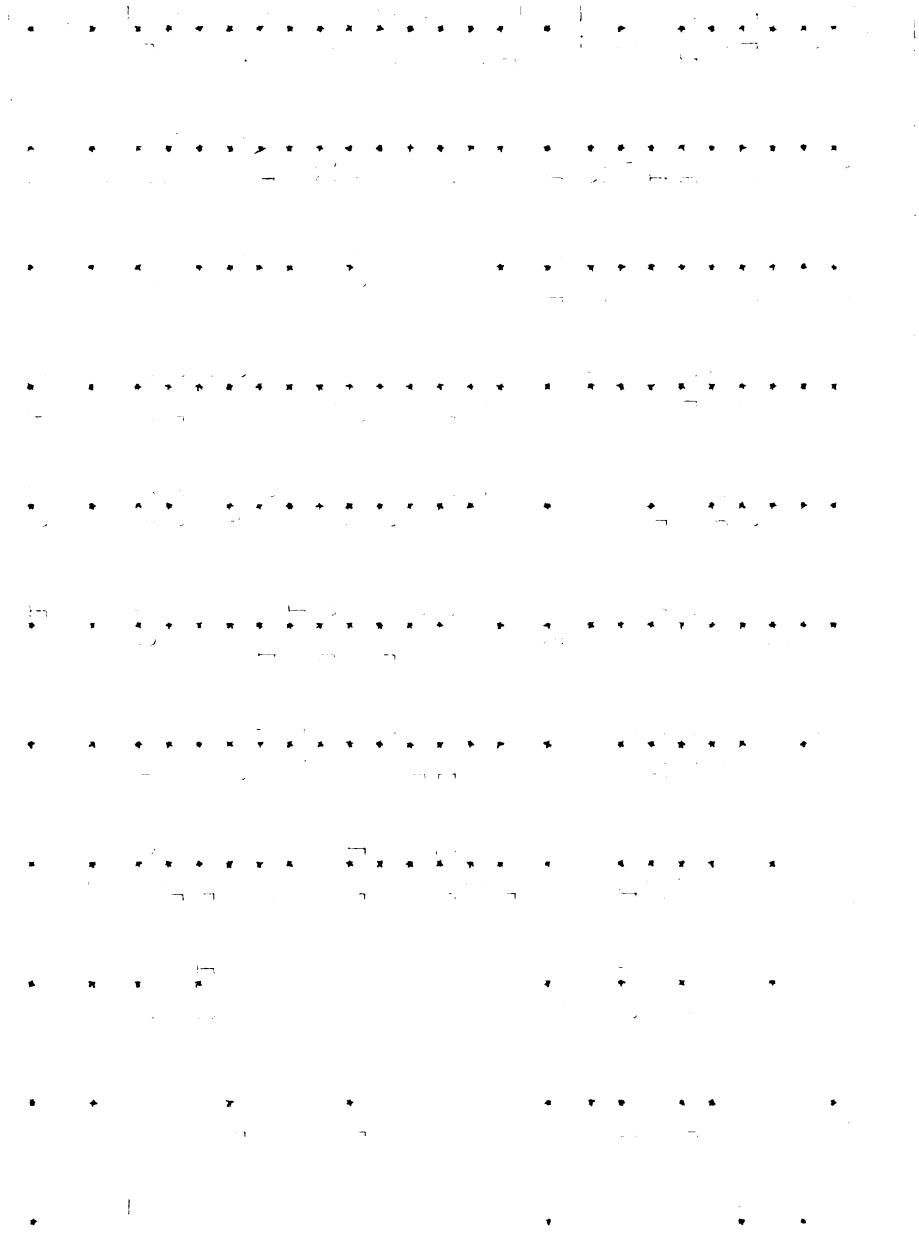


TABLE 3

NUMERICAL DISTRIBUTION OF TEACHERS IN EACH ECONOMIC AREA BY DATE OF CERTIFICATE

Econ. Area	Date of Certificate																		
	1901	1902	1903	1904	1905	1906	1907	1908	1909	1910	1911	1912	1913	1914	1915	1916	1917	1918	1919
A				1						1			1	3	7	4	18	15	14
B					1	1	3	1	5	7	6	20	10	12	15	9	31	29	21
C						1			1		1	1	2	8	9	2	6	9	8
D		1								1	7	5	15	10	8	19	19	19	23
E									1	1	3	2	3	2	9	11	3	9	8
F1				1		1	1	1	2	3	6	13	11	12	18	21	31	30	28
F2			2			1		1		1	2	3	1	2	3	7	5	6	11
F3							2	2	5	4	11	12	12	26	26	28	38	30	28
G					1					2	1	2	10	4	7	8	17	10	13
Met. Total		1	2	2	2	4	6	5	14	20	37	58	65	79	102	109	168	157	154
1		1		1	1	1	5	1	5	7	10	15	11	12	17	22	18	31	18
2						1			4	3	1	4	6	5	6	9	7	7	5
3	1				1			2	2	1	1	2	6	3	6	4	6	3	1
4a	1			1						1	5	3	7	8	5	3	7	6	5
4b								1		1	1	2		2	4	2	4	3	2
5a				1			1		2	3	3	4	3	6	8	8	7	10	9
5b							1						2	3	1	4	3	2	3
6a			1							2	1		3	2	4	6	3	7	6
6b					1	1				1	3	4	1	7	4	10	10	5	9
7			1		3	2		2		1	2	8	2	7	10	16	18	17	12
8	1				1		1	4	2	3	4	9	10	8	10	12	8	19	9
9a						1	1	1	1	3	5	1	4	3	3	5	5	5	4
9b					1	1	2	2	1	2	2	6	10	6	9	13	15	13	13
N-Met. Total	3	1	2	3	8	7	11	13	17	28	38	58	65	72	87	114	111	128	96
Total	3	2	4	5	10	11	17	18	31	48	75	116	130	151	189	223	279	285	250

TABLE 3 (Continued)

Econ. Area	Date of Certificate																	
	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937
A	15	10	16	19	24	36	29	24	34	24	36	34	13	14	12	14	25	7
B	17	27	29	42	49	54	46	43	56	70	53	70	34	21	18	28	14	28
C	10	19	21	21	28	27	40	31	28	38	35	42	14	5	14	15	15	16
D	12	25	36	47	60	67	71	69	71	86	58	64	36	20	23	22	30	24
E	20	18	23	34	26	34	39	23	40	54	38	29	15	20	19	24	28	12
F1	31	33	46	62	83	95	91	69	95	100	73	76	35	49	30	27	52	47
F2	7	13	21	28	23	35	28	35	37	39	35	24	17	25	20	18	27	15
F3	35	50	70	83	107	111	104	127	119	134	95	100	87	81	76	71	91	97
G	17	12	18	28	33	28	30	27	31	27	22	30	18	18	14	15	17	14
Met. Total	164	207	280	364	433	487	478	448	511	572	445	469	269	253	226	234	299	260
1	19	28	36	47	43	57	44	46	53	55	44	44	23	32	26	13	12	36
2	6	6	15	19	22	27	30	26	25	34	21	28	17	16	8	9	6	7
3	11	9	13	13	18	22	19	26	18	21	21	25	11	14	4	10	7	7
4a	7	8	19	20	33	25	28	29	27	38	39	42	22	13	18	18	20	10
4b	2	2	9	11	13	14	23	18	19	27	24	33	9	11	12	12	8	15
5a	14	20	13	32	31	34	49	47	45	43	69	58	26	25	15	16	25	24
5b	3	6	6	14	15	16	23	14	10	22	27	33	12	15	5	8	10	3
6a	7	6	7	13	17	15	19	18	13	21	30	28	13	18	8	13	11	10
6b	10	17	18	23	15	30	28	35	48	49	38	40	22	11	5	15	14	9
7	14	22	30	48	64	67	73	71	87	60	72	78	50	21	36	30	31	34
8	15	24	26	35	52	51	44	39	53	61	57	64	32	25	14	21	21	15
9a	8	10	12	10	19	22	23	26	42	27	30	41	18	14	10	11	17	7
9b	8	15	18	32	28	45	46	50	61	71	61	48	28	22	24	18	17	25
N-Met. Total	124	173	222	317	370	425	449	445	501	529	533	562	283	237	185	194	199	202
Total	288	380	502	681	803	912	927	893	1,012	1,101	978	1,031	552	490	411	428	498	462

TABLE 3 (Continued)

Econ. Area	Date of Certificate															No Info.	Total
	1938	1939	1940	1941	1942	1943	1944	1945	1946	1947	1948	1949	1950	1951	1952	1953		
A	8	12	1	1	3	3	5	6	14	17	16	24	76	89	195	75	18	1,013
B	23	37		4	2	4	16	13	16	18	42	97	159	188	400		8	1,897
C	12	7	1		1	1	6	8	16	21	30	57	105	76	265		12	1,085
D	25	24	8	5	4	3	5	11	25	34	67	91	205	171	388		13	2,027
E	23	16		2	1	1	10	10	14	13	48	62	128	164	267		4	1,311
F1	42	44	8	12	6	4	14	18	30	55	159	221	335	454	762		7	3,444
F2	18	18	2	4	9	3	9	8	26	23	64	88	176	190	337	3	2	1,472
F3	77	74	28	25	25	23	25	41	65	105	226	292	447	490	770		21	4,596
G	12	17	2	1	2	1	8	3	9	13	11	38	61	76	93	159	3	983
Met. Total	240	249	50	54	53	43	98	118	215	299	663	970	1,692	1,898	3,477	237	88	17,828
1	23	10	6	8	5	7	9	8	7	19	35	59	84	103	198		60	1,475
2	15	14	1	3	5	2	2	9	7	14	25	40	86	97	303		6	1,009
3	8	17	6	4	2	2	1	5	6	5	19	38	74	79	175	42	23	814
4a	11	20	2	1	5	2	2	2	13	10	41	65	140	134	313		40	1,269
4b	9	10	5	1	5	2	3	6	6	9	26	50	116	127	362	41	28	1,090
5a	28	30	10	10	5	12	9	14	13	33	38	65	194	198	443	1	10	1,764
5b	11	6	1	5			1	5	5	8	19	51	85	97	209		75	839
6a	11	13	4	1	1	2	5	6	5	13	27	43	57	94	223		6	813
6b	17	18		4	3	4	9	17	14	15	45	75	143	142	293		23	1,305
7	34	27	8	12	13	8	10	13	21	30	61	137	231	275	705		72	2,646
8	23	27	9	4	6	4	16	13	25	32	63	131	224	269	528	48	15	2,187
9a	16	18	5		3	6	3	7	6	8	27	52	96	96	267		103	1,102
9b	26	28	3	3	4	2	10	13	7	10	33	64	133	183	258	284	20	1,794
N-Met. Total	232	238	60	56	57	53	80	118	135	206	459	870	1,663	1,894	4,277	416	481	18,107
Total	472	487	110	110	110	96	178	236	350	505	1,122	1,840	3,355	3,792	7,754	653	569	35,935

TABLE 4

PERCENTAGE DISTRIBUTION OF TEACHERS IN EACH ECONOMIC AREA BY DATE OF CERTIFICATE

Econ. Area	Date of Certificate									No Info.
	1901-12	1913-17	1918-22	1923-27	1928-32	1933-37	1938-42	1943-47	Since '47	
A	.2	3.3	6.9	13.0	13.9	7.1	2.5	4.4	46.9	1.8
B	2.3	4.1	6.5	12.3	14.9	5.8	3.5	3.5	46.7	.4
C	.4	2.5	6.2	13.5	14.5	6.0	1.9	4.8	49.1	1.1
D	.7	3.5	5.7	15.5	15.5	5.9	3.3	3.8	45.5	.6
E	.5	2.1	6.0	11.9	13.4	7.9	3.2	3.7	51.0	.3
F1	.8	2.7	4.9	11.6	11.0	5.9	3.3	3.5	56.1	.2
F2	.7	1.2	4.0	10.1	10.3	7.1	3.5	4.7	58.3	.1
F3	.8	2.8	4.6	11.6	11.6	9.1	5.0	5.6	48.4	.5
G	.6	4.7	7.1	14.8	13.0	7.9	3.5	3.5	44.6	.3
Met. Total	.9	2.9	5.4	12.4	12.7	7.2	3.6	4.3	50.1	.5
1	3.2	5.4	8.9	16.1	14.8	8.1	3.5	3.4	32.5	4.1
2	1.3	3.3	3.8	12.3	12.4	4.5	3.8	3.4	54.6	.6
3	1.2	3.1	4.5	12.0	11.8	5.2	4.5	2.4	52.5	2.8
4a	.9	2.4	3.5	10.6	13.2	6.2	3.1	2.3	54.6	3.2
4b	.4	1.1	1.6	7.2	10.3	5.3	2.8	2.4	66.3	2.6
5a	.8	1.8	3.7	10.9	13.7	5.9	4.7	4.6	53.3	.6
5b	.1	1.5	2.4	9.8	12.4	4.9	2.7	2.3	55.0	8.9
6a	.5	2.2	4.1	10.1	12.9	7.4	3.7	3.8	54.6	.7
6b	.8	2.5	4.5	10.0	15.1	4.1	3.2	4.5	53.5	1.8
7	.7	2.0	3.6	12.2	13.1	5.7	3.6	3.1	53.3	2.7
8	1.1	2.2	4.2	10.1	12.2	4.4	3.2	4.1	57.8	.7
9a	1.2	1.8	3.5	9.1	14.4	5.4	3.8	2.7	48.8	9.3
9b	.9	3.0	3.7	11.2	15.0	5.9	3.6	2.4	53.2	1.1
N-Met. Total	1.0	2.5	4.1	11.1	13.3	5.6	3.6	3.3	52.9	2.6
Total	.9	2.7	4.7	11.7	13.0	6.3	3.6	3.8	51.5	1.8

TABLE 5

NUMERICAL DISTRIBUTION OF TEACHERS IN EACH ECONOMIC AREA BY TYPE OF CERTIFICATE

Econ. Area	Type of Certificate									No Info.	Total
	Any Life	Elem. Prov.	Elem. Perm.	Sec. Prov.	Sec. Perm.	Jr. Col. Perm.	St. Bd. Special	Co. Lim. and Ren.	St. Lim. and Ren.		
A	484	97	48	117	55		116	5	85	6	1,013
B	940	230	88	254	84	5	187	13	93	3	1,897
C	491	97	33	179	46	2	161	3	66	7	1,085
D	1,013	186	89	326	104	17	210	2	71	9	2,027
E	585	221	54	199	71		108	3	70		1,311
F1	1,381	674	187	591	254		304		46	7	3,444
F2	526	216	101	299	111		174	1	43	1	1,472
F3	2,008	826	299	719	323	14	270	1	93	43	4,596
G	506	132	57	140	77		54		15	2	983
Met. Total	7,934	2,679	956	2,824	1,125	38	1,584	28	582	78	17,828
1	915	65	25	243	78	5	113	2	21	8	1,475
2	420	64	19	199	63		179	2	55	8	1,009
3	345	60	24	129	38		114	19	76	9	814
4a	521	81	18	255	70		188	15	117	4	1,269
4b	318	54	17	240	51	6	232	81	87	4	1,090
5a	733	124	48	288	89	1	220	64	193	4	1,764
5b	290	50	4	187	54		112	44	89	9	839
6a	334	75	32	156	51		99	4	61	1	813
6b	546	121	45	224	105		126	28	96	14	1,305
7	1,088	194	79	445	135	11	375	43	267	9	2,646
8	831	308	96	407	134	3	266	21	115	6	2,187
9a	450	82	27	217	50		151	28	94	3	1,102
9b	776	200	72	299	79		212	40	113	3	1,794
N-Met. Total	7,567	1,478	506	3,289	997	26	2,387	391	1,384	82	18,107
Total	15,501	4,157	1,462	6,113	2,122	64	3,971	419	1,966	160	35,935

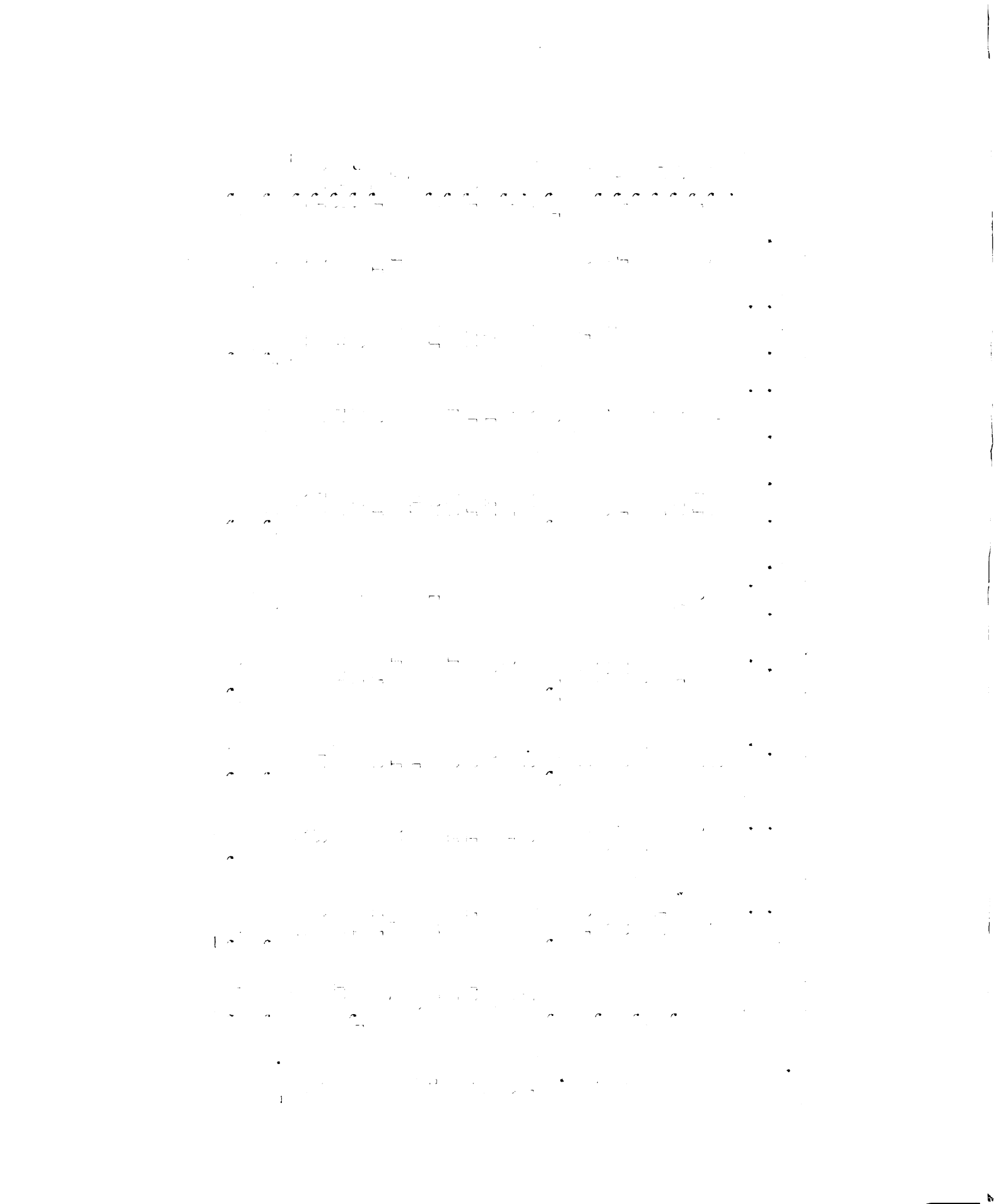


TABLE 6

PERCENTAGE DISTRIBUTION OF TEACHERS IN EACH ECONOMIC AREA BY TYPE OF CERTIFICATE

Econ. Area	Type of Certificate									No Info.
	Any Life	Elem. Prov.	Elem. Perm.	Sec. Prov.	Sec. Perm.	Jr. Col. Perm.	St. Bd. Special	Co. Lim. and Ren.	St. Lim. and Ren.	
A	47.8	9.6	4.7	11.5	5.4		11.5	.5	8.4	.6
B	49.6	12.1	4.6	13.4	4.4	.3	9.9	.7	4.9	.1
C	45.3	8.9	3.1	16.5	4.2	.2	14.8	.3	6.1	.6
D	50.0	9.2	4.4	16.1	5.1	.8	10.4	.1	3.5	.4
E	44.6	16.9	4.1	15.2	5.4		8.2	.2	5.4	
F1	40.1	19.6	5.4	17.2	7.4		8.8		1.3	.2
F2	35.7	14.7	6.9	20.3	7.5		11.8	.1	2.9	.1
F3	43.7	18.0	6.5	15.7	7.0	.3	5.9		2.0	.9
G	51.5	13.4	5.8	14.3	7.8		5.5		1.5	.2
Met. Total	44.5	15.0	5.4	15.8	6.3	.2	8.9	.2	3.3	.4
1	62.0	4.4	1.7	16.5	5.3	.3	7.7	.1	1.4	.6
2	41.6	6.4	1.9	19.7	6.2		17.7	.2	5.5	.8
3	42.4	7.5	2.9	15.8	4.7		14.0	2.3	9.3	1.1
4a	41.1	6.4	1.4	20.1	5.5		14.8	1.2	9.2	.3
4b	29.2	5.0	1.5	22.0	4.7	.5	21.3	7.4	8.0	.4
5a	41.6	7.0	2.7	16.3	5.1	.1	12.5	3.6	10.9	.2
5b	34.6	6.0	.5	22.3	6.4		13.3	5.2	10.6	1.1
6a	41.1	9.2	3.9	19.2	6.3		12.2	.5	7.5	.1
6b	41.8	9.3	3.4	17.2	8.0		9.7	2.1	7.4	1.1
7	41.1	7.3	3.0	16.8	5.1	.4	14.2	1.6	10.1	.4
8	38.0	14.1	4.4	18.6	6.1	.1	12.2	1.0	5.2	.3
9a	40.8	7.4	2.5	19.7	4.5		13.7	2.6	8.5	.3
9b	43.3	11.1	4.0	16.7	4.4		11.8	2.2	6.3	.2
N-Met. Total	41.8	8.2	2.8	18.2	5.5	.1	13.2	2.2	7.6	.4
Total	43.1	11.6	4.1	17.0	5.9	.2	11.0	1.2	5.5	.4

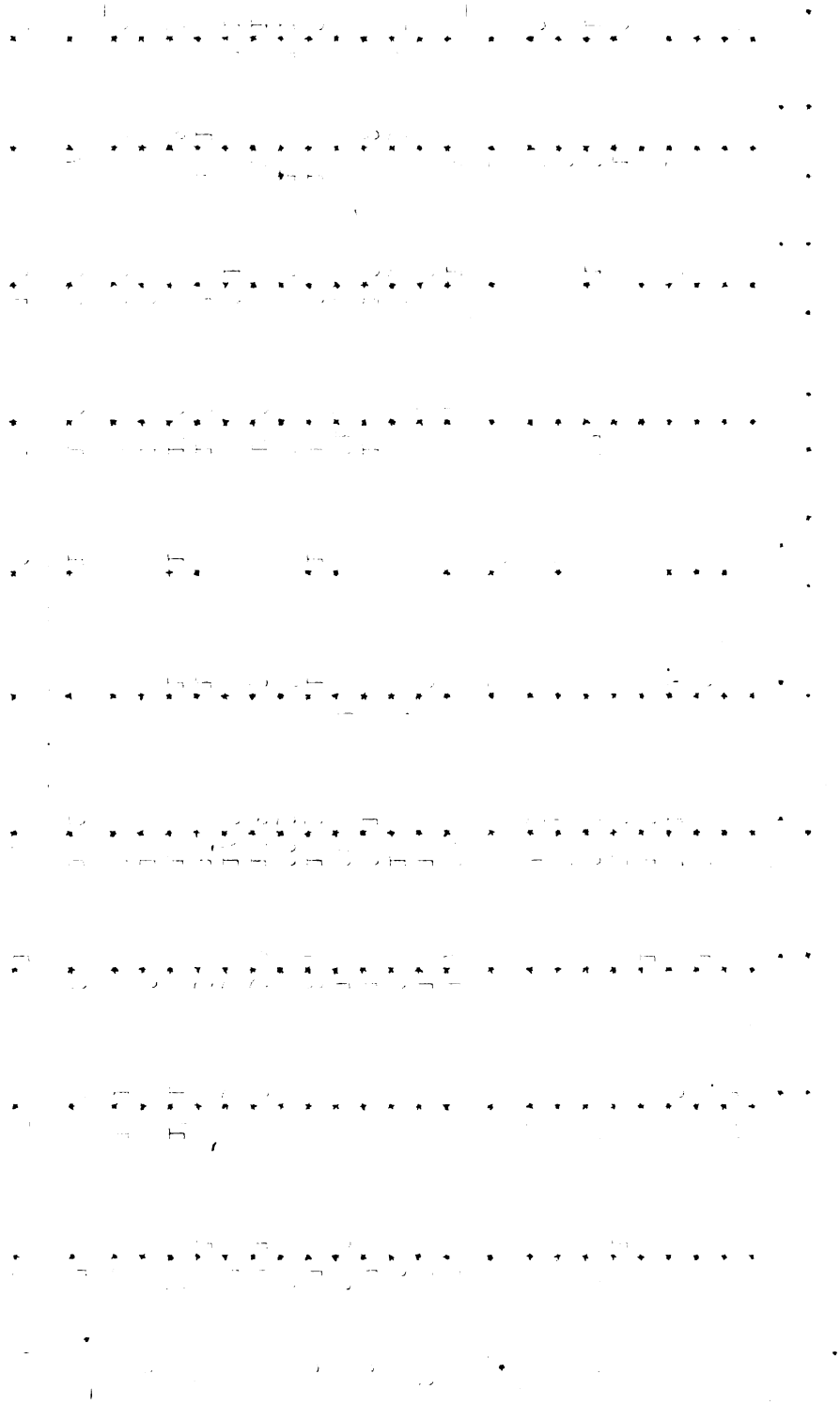


TABLE 7

NUMERICAL AND PERCENTAGE DISTRIBUTIONS OF TEACHERS IN EACH ECONOMIC AREA BY AMOUNT OF TRAINING SHOWING AVERAGE AMOUNTS OF TRAINING

Econ. Area	Amount of Training										No Info.		Total	Ave. Am't. of Tr.
	1 Year		2 Years		3 Years		4 Years		5 Years					
	N	%	N	%	N	%	N	%	N	%	N	%		
A	23	2.3	116	11.5	114	11.2	544	53.7	198	19.5	18	1.8	1,013	3.78
B	27	1.4	107	5.6	157	8.3	1,141	60.2	405	21.3	60	3.2	1,897	3.97
C	14	1.3	106	9.8	126	11.6	620	57.2	173	15.9	46	4.2	1,085	3.80
D	3	.1	113	5.6	217	10.7	1,166	57.5	516	25.5	12	.6	2,027	4.03
E	4	.3	101	7.7	74	5.7	822	62.7	260	19.8	50	3.8	1,311	3.98
F1	2	.1	108	3.1	177	5.2	2,346	68.1	786	22.8	25	.7	3,444	4.11
F2	10	.7	95	6.4	98	6.7	920	62.5	328	22.3	21	1.4	1,472	4.01
F3	11	.2	119	2.6	233	5.1	2,789	60.7	1,406	30.6	38	.8	4,596	4.20
G			22	2.2	45	4.6	615	62.6	296	30.1	5	.5	983	4.21
Met. Total	94	.5	887	5.0	1,241	7.0	10,963	61.5	4,368	24.5	275	1.5	17,828	4.06
1	12	.8	118	8.0	230	15.5	811	55.0	250	17.0	54	3.7	1,475	3.82
2	24	2.3	122	12.1	143	14.2	573	56.8	125	12.4	22	2.2	1,009	3.66
3	37	4.6	79	9.7	88	10.8	441	54.2	128	15.7	41	5.0	814	3.70
4a	28	2.2	106	8.4	147	11.6	693	54.6	156	12.3	139	10.9	1,269	3.75
4b	104	9.6	122	11.2	131	12.0	547	50.2	131	12.0	55	5.0	1,090	3.46
5a	87	4.9	288	16.3	165	9.4	840	47.6	322	18.3	62	3.5	1,764	3.60
5b	48	5.7	105	12.5	91	10.9	418	49.8	119	14.2	58	6.9	839	3.58
6a	1	.1	8	1.0	30	3.7	388	47.7	161	19.8	225	27.7	813	4.19
6b	31	2.4	101	7.7	110	8.4	715	54.8	249	19.1	99	7.6	1,305	3.87
7	79	3.0	336	12.7	325	12.3	1,363	51.5	417	15.7	126	4.8	2,646	3.68
8	36	1.6	146	6.7	185	8.5	1,152	52.7	595	27.2	73	3.3	2,187	4.00
9a	31	2.8	117	10.6	108	9.8	613	55.6	157	14.3	76	6.9	1,102	3.73
9b	49	2.7	168	9.4	189	10.5	941	52.5	392	21.8	55	3.1	1,794	3.84
N-Met. Total	567	3.1	1,816	10.0	1,942	10.7	9,495	52.5	3,202	17.7	1,085	6.0	18,107	3.76
Total	661	1.9	2,703	7.5	3,183	8.8	20,458	56.9	7,570	21.1	1,360	3.8	35,935	3.91

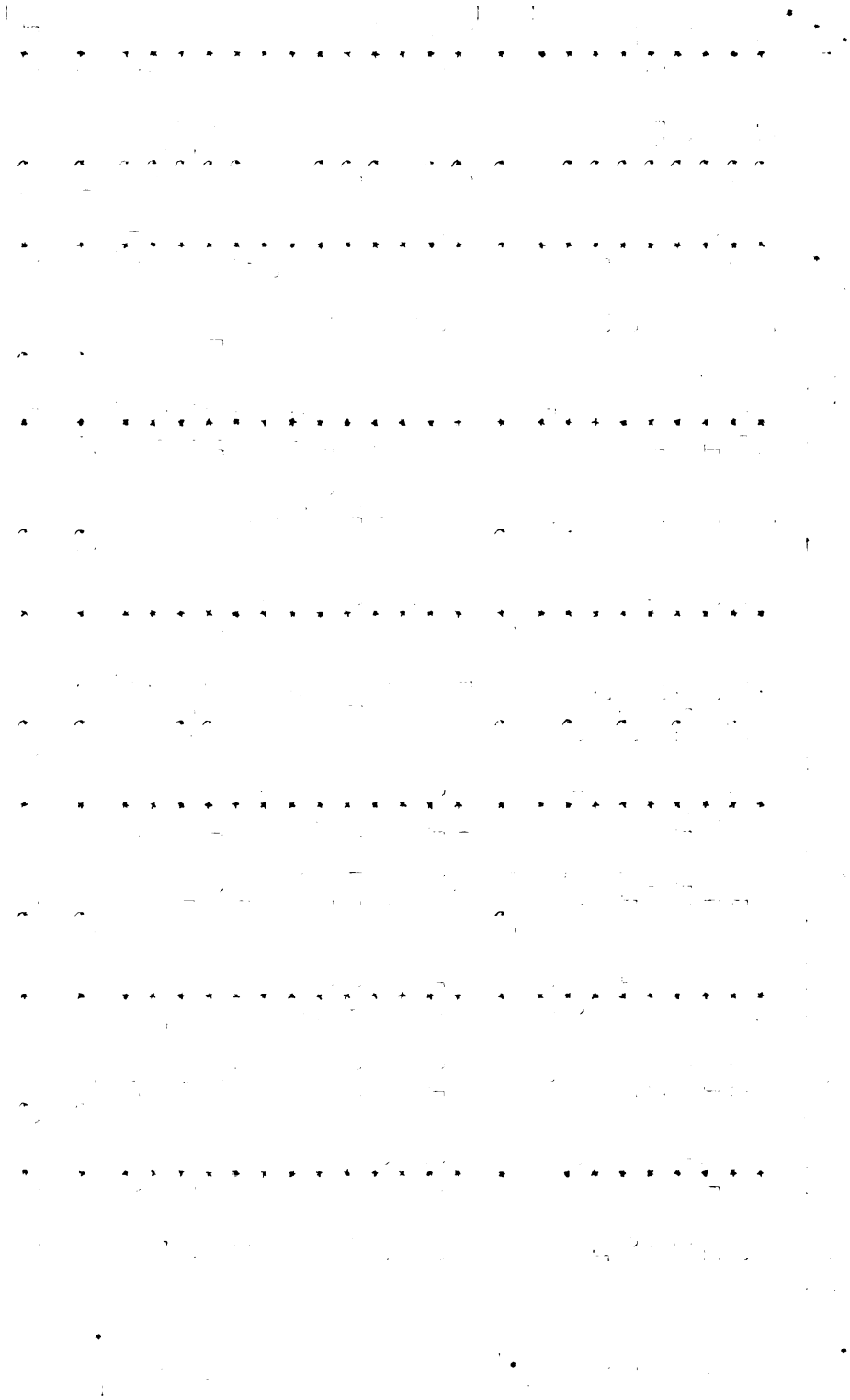


TABLE 8

NUMERICAL DISTRIBUTION OF TEACHERS IN EACH ECONOMIC AREA BY TRAINING INSTITUTION

Econ. Area	Institution in																								
	Alabama	Arizona	Arkansas	California	Colorado	Connecticut	Delaware	Dist. of Col.	Florida	Georgia	Idaho	Illinois	Indiana	Iowa	Kansas	Kentucky	Louisiana	Maine	Maryland	Mass.	Minnesota	Mississippi	Missouri	Montana
A	1			1	1							37	14	6	1	6	1				13		9	1
B	2			1	1				2			54	33	16	8	1				2	3		3	
C	1	1		1	3		1				1	49	15	14	3	4	1	1			13		7	
D	4	2	8		7	1		1	1			69	22	13	6	5	1		1	4	28		18	
E		1		3	5	1			1			32	12	7	5	5	2			4	6		8	
F1	4	2	4	3	9	1		1	3	5	1	96	48	25	15	27	3	1		7	36	5	22	
F2	1		2	2	2	1	1	1	1		1	22	14	4	5	11	2	1		1	13	1	10	
F3	14	2	8	10	10	1		1	6	5		117	59	37	12	32	3		3	17	32	5	27	1
G			1		5							38	9	5	1	1	1			1	2		3	
M Tot.	27	8	23	21	43	5	2	4	14	10	3	514	226	127	56	92	14	3	4	36	146	11	107	2
1					1			1				41	8	16	2	1				1	78		9	1
2	1			2	3						1	35	10	12	1					3	38		2	
3			1	2	1				2			14	12	4	3	4				1	3		2	
4a			1									25	14	4	1	5				4	6		5	
4b		2								1		7	11	9	2	2				5	12	2	2	
5a		1		1	4				1			29	17	8	4	2		2		2	5		3	
5b	2		1	1	1							11	7	3		6					1		2	
6a												23	8	9	2	2				1	2		1	
6b	1		1	1	2			1	1		1	100	39	17	3	4				2	14		8	
7	2		1	2	3	1		2		1		49	25	12	6	5	2		1	4	15	2	5	1
8		3	3	3	7			2		3		53	34	25	3	8	2		1	7	14		9	
9a					1						1	18	16	10	1	2					7		6	
9b	1		3	4	4	1			1		1	58	66	10	5	4	1		2	4	10		8	1
NM Tot.	7	6	11	16	27	2		6	5	5	4	463	267	139	33	45	5	2	4	34	205	4	62	3
Total	34	14	34	37	70	7	2	10	19	15	7	977	493	266	89	137	19	5	8	70	351	15	169	5

TABLE 8 (Continued)

Econ. Area	Institution in																													Total Outside Michigan
	Nebraska	Nevada	New Hampshire	New Jersey	New Mexico	New York	North Carolina	North Dakota	Ohio	Oklahoma	Oregon	Pennsylvania	Rhode Island	South Carolina	South Dakota	Tennessee	Texas	Utah	Vermont	Virginia	Washington	West Virginia	Wisconsin	Wyoming	Outside the U.S.					
A	5			1	1	2	1	2	12			3		1		3	2			1	1	3	16		1					146
B	1			1		16	2	2	29	3		5		2	1	1	3				2		32		3					229
C	9				3	6	1	1	18	2		2		2	2	1		2		1			37		1					203
D	8			2	1	15	6	5	39	1		8		1	1	5				1	2	10	37		3					336
E	3				1	2		1	26		2	4					2			1			19		1					154
F1	7			1		29	8	1	149	5	1	20		5	5	7	7	2		2	2	6	50	1	4					630
F2	1					11	1	4	33	2	1	9				5	1				2	8	11							185
F3	11		2	4		35	9	3	145	3	3	36		6	4	24	14	6	3	9	3	13	62		12					809
G	2					10			8	1		4		1	1	1		1					3		1					100
M Tot.	47		2	9	6	126	28	19	459	17	7	91		18	14	47	29	11	3	15	12	40	267	1	26					2,792
1	3				1	3		4	3	1		4			3	2		1			1		154							339
2	1					4	1	1	11			1			1	3		1					118		1					251
3	1						1	1	9			1		2	1	3				1		3	21		1					94
4a	2					4			12	2	1	5			1				1		1	3	6		2					105
4b	1					6		5	14			1			1	2	2		2	1			15							105
5a					1	12		2	22	1		11		1	1		1				1	2	14		1					149
5b						1			11	1		4	1			1					2		7							63
6a								1	8	1					1	1	1					2	5		1					69
6b	7		1	2		5	1	1	15	1	1	5		2	4	5					2		29	1	1					278
7	3					8		1	46	3		5		5	1	5	2	1	1		2	2	28		1					253
8	3			2		37	2	2	141	2		12		1	1	8	5	2	2		1	1	20	1	2					422
9a	4		1	1			1		87			1				1					1	1	2							162
9b	6			1		8	2	1	35	5		4		2		5	2		1		3	1	17							277
NM Total	31		2	6	2	88	8	19	414	17	2	54	1	13	15	36	13	5	7	2	14	15	436	2	10					2,567
Total	78	0	4	15	8	214	36	38	873	34	9	145	1	31	29	83	42	16	10	17	26	55	703	3	36					5,359

TABLE 8 (Continued)

Econ. Area	Institution																
	Adrian	Albion	Alma	Aquinas	Calvin	Emmanuel Miss.	Hillsdale	Hope	Kalamazoo	Marygrove	Mercy	Nazareth	Olivet	Siena Heights	U. of Detroit	Other Mich. Coll.	Total Private
A	2	11	25	9	1		3	5	1	5	1	3	1	2	1	1	71
B		28	16	54	102	6	5	86	9	1		2	11	1	1	11	333
C	2	11	7	2	5	3	1	34	9			2	6		1	6	89
D	9	48	30	2	1		20	3	14	15		4	12	4	2	6	170
E	1	22	16		4	2	7	21	10	1		1	7	2		8	102
F1	11	76	54	5	1	4	39	14	9	17		4	17	8	28	4	291
F2	9	18	14	1	2		16	6	5	29	1	1	5	6	24	3	140
F3	11	80	33	1	4	1	24	8	10	47		4	17	7	44	12	303
G	1	7	4	1	3	2	3	16	40	1		8	6			1	93
M Tot.	46	301	199	75	123	18	118	193	107	116	2	29	82	30	101	52	1,592
1		9	1				2		5	1					1	4	23
2	1	7	3			3		3	1	1			2	1	2	2	26
3	1	10	7		3	2	4	14	2				2			1	46
4a	4	7	10	4	2	2	8	13	5	1			7	1	2	2	68
4b	4	10	15	1			5	2	2	2	3	2	8	1	1	3	59
5a	2	16	47		1	1	6	7	2	3			8			9	102
5b	1	9	14	3	2	1	6	1	3	2				3	2	9	56
6a	2	10	4		13		2	133	9			1	2	1		2	179
6b	4	16	3			34	5	23	9	2		1	6	1		2	106
7	16	54	28	4		6	22	13	9			1	22	13		6	194
8	14	21	8		7		18	6	5	8		2	11	13	1	2	116
9a	61	19	4				71	2	4			1	6	45		2	215
9b	6	66	3	1	4	7	12	15	14			3	16			13	160
NM Tot.	116	254	147	13	32	56	161	232	70	20	3	11	90	79	9	57	1,350
Total	162	555	346	88	155	74	279	425	177	136	5	40	172	109	110	109	2,942

TABLE 8 (Continued)

Econ. Area	Institution										No Info.	Total
	Central	Ferris	Michigan State	Michigan Normal	Northern	U. of Michigan	Wayne University	Western	Total State-Supported	Total County Normal		
A	401	4	66	132	27	50	8	50	738	6	52	1,013
B	115	25	150	149	16	143	2	692	1,292	2	41	1,897
C	108	16	78	69	33	59	2	414	779	3	11	1,085
D	318	10	172	621	51	149	33	140	1,494	3	24	2,027
E	119	9	349	222	42	71	6	184	1,002		53	1,311
F1	244	13	234	820	122	271	563	244	2,511		12	3,444
F2	111	14	68	402	64	82	226	101	1,068	1	78	1,472
F3	249	18	220	1,198	141	418	774	356	3,374	1	109	4,596
G	36		25	19	4	26		673	783		7	983
M Tot.	1,701	109	1,362	3,632	500	1,269	1,614	2,854	13,041	16	387	17,828
1	15	4	38	72	803	37	4	57	1,030	1	82	1,475
2	33	14	35	64	438	29	15	62	690	2	40	1,009
3	247	17	54	91	25	24	18	123	599	15	60	814
4a	453	33	96	97	41	33	26	175	954	11	131	1,269
4b	531	17	70	106	38	41	15	29	847	49	30	1,090
5a	867	21	110	138	25	68	9	148	1,386	17	110	1,764
5b	214	7	85	212	12	33	15	33	611	3	106	839
6a	36	3	46	14	5	17	4	323	448	4	113	813
6b	30	1	62	52	17	40	6	672	880	20	21	1,305
7	382	22	342	585	31	138	15	416	1,931	11	257	2,646
8	115	8	104	853	42	299	83	107	1,611	10	28	2,187
9a	23	3	71	241	6	43	3	194	584	1	140	1,102
9b	83	5	120	129	15	70	8	845	1,275	13	69	1,794
NM Tot.	3,029	155	1,233	2,654	1,498	872	221	3,184	12,846	157	1,187	18,107
Total	4,730	264	2,595	6,286	1,998	2,141	1,835	6,038	25,887	173	1,574	35,935

TABLE 9

PERCENTAGE DISTRIBUTION OF TEACHERS IN EACH ECONOMIC AREA BY TYPE OF TRAINING INSTITUTION

Economic Area	Outside Michigan	In Michigan				No Info.
		State-supported	Private	Co. Normal	Total	
A	14.4	72.9	7.0	.6	80.5	5.1
B	12.1	68.1	17.5	.1	85.7	2.2
C	18.7	71.8	8.2	.3	80.3	1.0
D	16.6	73.7	8.4	.1	82.2	1.2
E	11.8	76.4	7.8		84.2	4.0
F1	18.3	72.9	8.4		81.3	.4
F2	12.6	72.5	9.5	.1	82.1	5.3
F3	17.6	73.4	6.6		80.0	2.4
G	10.2	79.7	9.4		89.1	.7
Met. Total	15.7	73.1	8.9	.1	82.1	2.2
1	23.0	69.8	1.6	.1	71.5	5.5
2	24.9	68.4	2.6	.2	71.2	3.9
3	11.5	73.6	5.6	1.8	81.0	7.5
4a	8.3	75.2	5.3	.9	81.4	10.3
4b	9.6	77.7	5.4	4.5	87.6	2.8
5a	8.4	78.6	5.8	1.0	85.4	6.2
5b	7.5	72.8	6.7	.4	79.9	12.6
6a	8.5	55.1	22.0	.5	77.6	13.9
6b	21.3	67.4	8.1	1.6	77.1	1.6
7	9.6	73.0	7.3	.4	80.7	9.7
8	19.3	73.7	5.3	.4	79.4	1.3
9a	14.7	53.0	19.5	.1	72.6	12.7
9b	15.4	71.1	8.9	.7	80.7	3.9
Non-Met. Total	14.2	70.9	7.5	.9	79.3	6.5
Total	14.9	72.0	8.2	.5	80.7	4.4

TABLE 10

PERCENTAGE DISTRIBUTION OF THOSE TEACHERS IN EACH ECONOMIC AREA FROM STATE-SUPPORTED INSTITUTIONS BY INSTITUTION

Economic Area	Institution							
	Central	Ferris	M.S.C.	Normal	Northern	U. of M.	Wayne	Western
A	54.3	.5	8.9	17.9	3.7	6.8	1.1	6.8
B	8.9	1.9	11.6	11.5	1.2	11.1	.2	53.6
C	13.9	2.1	10.0	8.9	4.2	7.6	.2	53.1
D	21.3	.7	11.5	41.5	3.4	10.0	2.2	9.4
E	11.9	.9	34.8	22.1	4.2	7.1	.6	18.4
F1	9.7	.5	9.3	32.7	4.9	10.8	22.4	9.7
F2	10.4	1.3	6.4	37.6	6.0	7.7	21.2	9.4
F3	7.4	.5	6.5	35.5	4.2	12.4	22.9	10.6
G	4.6		3.2	2.4	.5	3.3		86.0
Met. Total	13.0	.8	10.5	27.9	3.8	9.7	12.4	21.9
1	1.4	.4	3.7	7.0	78.0	3.6	.4	5.5
2	4.8	2.0	5.1	9.2	63.5	4.2	2.2	9.0
3	41.2	2.8	9.0	15.2	4.2	4.0	3.0	20.5
4a	47.5	3.5	10.0	10.2	4.3	3.5	2.7	18.3
4b	62.7	2.0	8.3	12.5	4.5	4.8	1.8	3.4
5a	62.6	1.5	7.9	10.0	1.8	4.9	.6	10.7
5b	35.0	1.1	13.9	34.7	2.0	5.4	2.5	5.4
6a	8.0	.7	10.3	3.1	1.1	3.8	.9	72.1
6b	3.4	.1	7.1	5.9	1.9	4.5	.7	76.4
7	19.8	1.1	17.7	30.3	1.6	7.1	.8	21.6
8	7.1	.5	6.5	52.9	2.6	18.6	5.2	6.6
9a	3.9	.5	12.2	41.3	1.0	7.4	.5	33.2
9b	6.5	.4	9.4	10.1	1.2	5.5	.6	66.3
Non-Met. Total	23.6	1.2	9.6	20.6	11.7	6.8	1.7	24.8
Total	18.3	1.0	10.0	24.3	7.7	8.3	7.1	23.3

TABLE 11

NUMERICAL DISTRIBUTION OF TEACHERS IN EACH ECONOMIC AREA BY TEACHING ASSIGNMENT

Econ. Area	Teaching Assignment																													
	Sup't.	Principal	Librarian	Dir. of Records	Dir. Curric. & Instruct.	Dir. Special Services	Coordinator*	Coordinator Curr. & Inst.	Music K-12	Art K-12	Phy.Ed. K-12	Special Education*	Speech Correction	Rem. Reading	Visiting Teacher	Counselor	Orthopedic	Blind	Deaf	Mentally Handicapped	Elem. Music	Elem. Art	Elem. Phy.Ed.	Elem. Music & Grade	Elem. Art & Grade	Elem. Phy.Ed. & Grade				
A	15	35	5		2	2			1			4	6			3	4	1	3		2	1	1							
B	24	91	20	3	16	10	3	1		1		8	9	6	12	8	9	5	7	17	6	3	2	6	1	2				
C	24	30	12	1	2	3	2	1				7	1	1	2	1	2		1		13	2	1	1						
D	28	74	22	8	5	12	3	4				29	13	4	3	35	3	2	2		23	10	17		1	1				
E	18	62	29	1	12	8	5	2	4			12	8	7	7	1	5		3		5	1	1	2						
F1	49	172	43	3	10	7	2	5	3	2		18	11	10	14	36	4	2	3	1	20	13	4	2		2				
F2	27	77	21	2	15	2	4	1	3			8	5	1	7	10	1				6	9		1	1					
F3	64	191	71	9	10	43	6	14	10	4	4	24	25	5	24	32	7	3	4	6	70	48	33	6	4	3				
G	16	40	7	1	6	4	1		4	2		8	5	1	5		3	2	6	2	14	5	3	1	2	4				
M Tot.	265	772	230	28	78	91	26	28	25	9	4	118	83	35	74	126	38	15	29	26	159	92	62	19	9	12				
1	53	92	19	2	7	2	2	2	1	2	1	4	3	3			3			1	9	2		2		1				
2	35	33	8		4	1	1		2	1		2	2		2	2	2	1	1	2	2	1		1						
3	31	30	5	1	3	1	1	1	1			2	1		1		1		1	1	3	2		1						
4a	45	41	8		3		1	1	2	1		1	2		1	1				1	4	1		3	1	2				
4b	35	47	6	1	4			1	3	1				2							4	1	2			1				
5a	28	58	19	2	6	10	5	3	1			3	7	2	1	12	2			1	5	1	1	3						
5b	25	27	7									4	2								3	2				1				
6a	15	35	6	1	2	1	1	1	1			4	2			6					3	1		1						
6b	33	32	13	1	5	2	2					1	3	2	2	1	1	1	1		6	2	2	1						
7	60	102	31	3	5	9	1		3	1		12	4		6	8	1	2	3	2	6	2	1	1	1					
8	36	86	23	2	6	11	5	2	9	2	2	3	9	2	9	11	1			4	18	7	5			1				
9a	25	44	11		1	1		3	2	1		2	6	1	1	4					7	1	2	3		2				
9b	30	73	16	3	13	8	2		3	2	1	6	10	4	4	16	1	3	1		5	1		2	1					
NM Tot.	451	700	172	16	59	46	21	14	28	10	5	44	51	16	27	61	12	7	7	12	75	24	13	18	3	8				
Total	716	1,472	402	44	137	137	47	42	53	19	9	162	134	51	101	187	50	22	36	38	234	116	75	37	12	20				

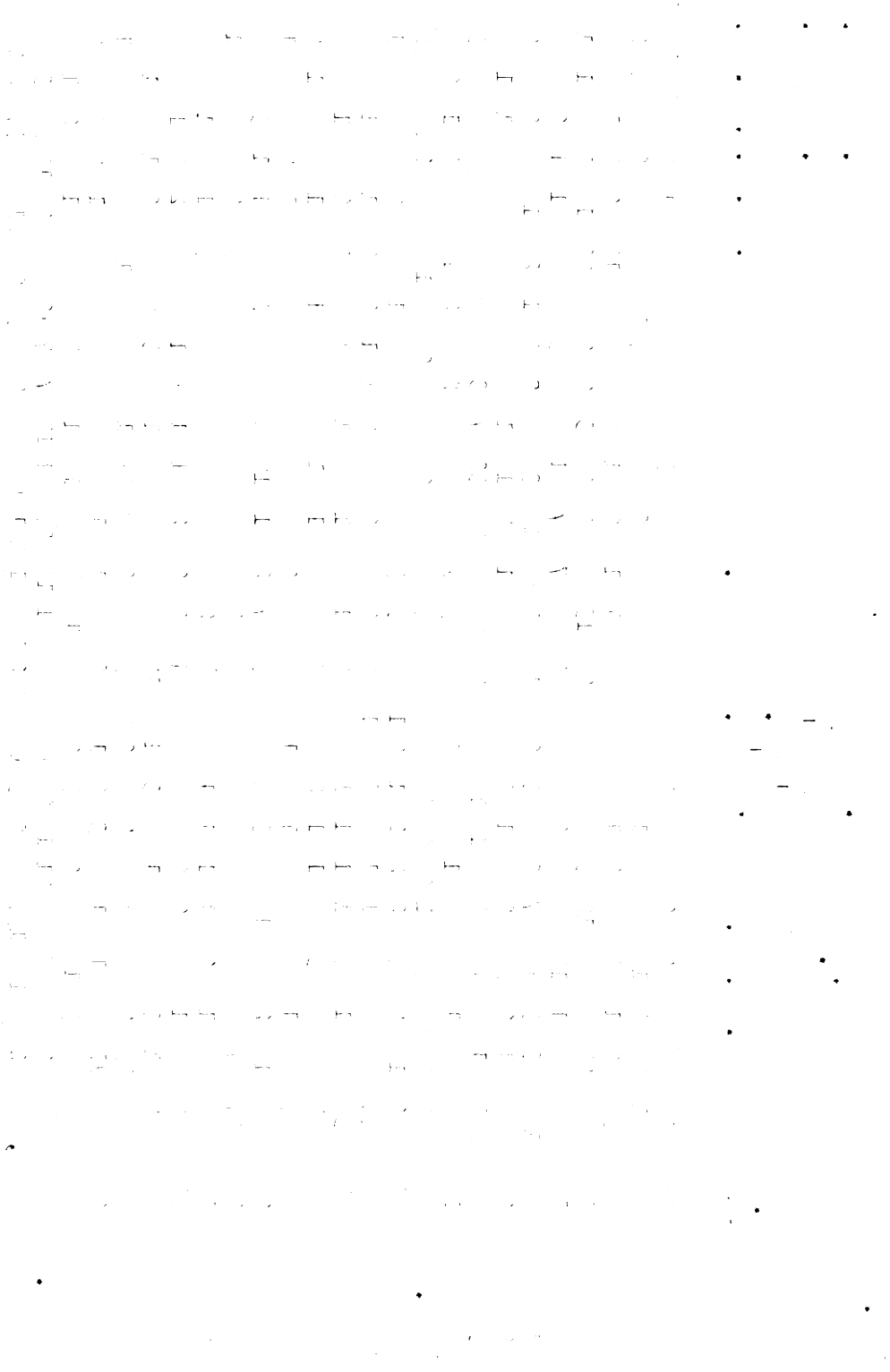


TABLE 11 (Continued)

Econ. Area	Teaching Assignment																												
	Kindergarten	1st	2nd	3rd	4th	5th	6th	Kg. & 1st	Kg. & 2nd	Kg. & 3rd	Kg. & 4th	Kg. & 5th	Kg. & 6th	1st & 2nd	1st & 3rd	1st & 4th	1st & 5th	1st & 6th	2nd & 3rd	2nd & 4th	2nd & 5th	2nd & 6th	3rd & 4th	3rd & 5th	3rd & 6th	4th & 5th	5th & 6th
A	52	80	52	46	47	51	50	5	1					15					17				12			14	
B	97	125	96	85	85	78	67	13						15					26				22			21	
C	48	65	57	54	48	49	48	3						5	1				6				6			4	
D	106	148	113	112	96	80	75	12						16					18				13		1	20	
E	66	92	70	67	73	69	59	2	1	2				12					18		1		12	1		12	
F1	179	263	225	212	205	180	161	1						12		1			17				16			21	
F2	70	106	91	78	79	75	70	4						8					11				9			9	1
F3	308	269	273	262	237	221	200	4						15					26			1	31			19	
G	37	50	37	31	29	28	29	7						4					7				4			7	
M Tot.	963	1,198	1,014	947	899	831	759	51	2	2				102	1	1			146		1	1	125	1	1	127	1
1	62	67	63	59	63	60	52	14					1	17					21				19			16	1
2	36	32	30	28	28	28	26	23	1					11					23				20			14	
3	28	36	28	30	25	25	26	15						8					12				5	1		11	1
4a	49	51	46	47	48	43	39	8						15	2				10	1			14			6	2
4b	41	46	33	37	40	34	34	7					1	14	1				11				11			11	
5a	52	68	50	53	52	54	53	3					1	13					10				16			4	
5b	27	27	24	23	26	22	22	4						7	1	1	1		8				5		1	5	
6a	25	34	30	29	31	25	30	1						3	1				1			1	2			2	
6b	51	72	63	61	58	55	52	10					1	13					8				6			8	
7	97	117	101	99	104	94	93	9					1	33	1				18	1			25			12	
8	92	129	106	103	109	95	91	4						10	1				12				6			7	
9a	43	52	46	43	46	36	38	2						4					1				8	1		3	
9b	84	127	85	79	74	80	78	5	2					23	1				17				19			16	1
NM Tot.	687	858	705	691	704	651	634	105	3			1	4	171	8	1	1		152	2		1	156	2	1	115	5
Total	1,650	2,056	1,719	1,638	1,603	1,482	1,393	156	5	2	0	1	4	273	9	2	1	0	298	2	1	2	281	3	2	242	6

TABLE 11 (Continued)

Econ. Area	Teaching Assignment																						
	5th & 6th	Kg thru 6th	6th & 7th	Kg thru 8th	Elementary*	7th	8th	Junior High*	Jr.High & Phy.Ed.	Jr.High & Art	Jr.Hi & Ind.Arts	Jr.High & Music	Jr.Hi & Home Ec.	9th*	Agriculture	Art	Commercial	Driver Training	English	For. Language	Guidance	Home Economics	Industrial Arts	Mathematics
A	12	15	3	32	56	12	7	3							7	7	21	1	42	5	2	17	36	28
B	31	29	2	64	78	43	25	15						3	5	24	32		53	11	1	41	46	42
C	8	6	1	3	166	14	13	8	1			1	1	1	6	14	25	2	48	9	3	25	29	36
D	21	19	3	7	77	27	11	12							1	21	54		74	4	2	36	45	53
E	13			75	4	4	3	7	1						5	9	37	3	52	8	1	26	37	33
F1	22	1	3	9	225	51	37	49	4						8	41	77	6	135	19	7	54	82	97
F2	4	3	2	18	94	47	25	13				1		2	2	10	37		38	5	1	26	35	29
F3	29	4	5	3	276	90	59	43						3		36	122	6	154	22	9	87	140	108
G	6	1	2		216	9	6	20							5	13	19	2	30	6		20	25	19
M Tot.	146	78	21	211	1,192	297	186	170	6			2	1	9	39	175	424	20	626	89	26	332	475	445
1	24	2	4	1	94	13	10	50	1		1				6	4	42	1	54	10		33	47	26
2	21	17	1	5	145	13	7	18							10	6	26		38	3	1	26	30	25
3	10	11	1	5	142	14	3	18			1				13	4	20		22	5	1	14	8	11
4a	22	63	4	74	106	21	7	14		1					27	2	36	1	34	2		36	17	17
4b	14	23	3	81	135	14	10	21	5				1		13	6	28	1	26	3		24	14	16
5a	11		3	102	422	25	17	10	1						32	12	38	1	57	11		31	47	31
5b	7	1	2	82	142	4	4	7				1			25	1	18	1	24	2		24	16	16
6a	3				220	6	5	6							15	6	21		25	2	2	18	20	22
6b	13	26	2	67	116	16	5	11	1	1				1	13	6	28	1	45	5	3	28	33	29
7	24	35	1	233	366	28	12	34	3			1			29	14	65	1	69	9		58	63	42
8	9	1	1	41	335	33	15	32						7	15	20	39	6	78	11	4	43	65	54
9a	10	6		126	142	7	8	6	1	2		1			20	3	23	1	27	1		25	19	15
9b	15	6	2	96	162	17	8	14	2						10	14	39	4	49	6	3	35	39	37
NM Tot.	183	191	24	913	2,527	211	111	241	14	4	2	3	1	8	228	98	423	18	548	70	14	395	418	341
Total	329	269	45	1,124	3,719	508	297	411	20	4	2	5	2	17	267	273	847	38	1,174	159	40	727	893	786

TABLE 11 (Continued)

Econ. Area	Music	Physical Educ.	Reading	Science	Social Studies	Speech	Junior College*	Ag. & Art	Ag. & Commercial	Ag. & Driver Tr.	Ag. & English	Ag. & For. Lang.	Ag. & Guidance	Ag. & Home Ec.	Ag. & Ind. Arts	Ag. & Math.	Ag. & Music	Ag. & Phy. Ed.	Ag. & Reading	Ag. & Science	Ag. & Soc. St.	Ag. & Speech	Art & Commercial	Art & Driver Tr.	Art & English	Art & For. Lang.	Art & Guidance	Art & Home Ec.	Art & Ind. Arts	Art & Math.	Art & Music	Art & Phy. Ed.	Art & Reading
	Teaching Assignment																																
A	16	15		18	35	2														1													
B	40	35		43	54	2									1					1									2	1			
C	26	21		28	41	4	1													2					1								
D	53	43		48	76	10									4	1				6					1					2			
E	22	35	2	30	40	5									1					1								1			1		
F1	110	90		74	118	17														1	1				1			1	1		4	1	
F2	35	31		26	40	4										1				1					2				1		1		
F3	93	129	1	103	138	3												1						1	3	1			2			2	
G	25	24		13	21	1																			1			1	1			1	
M Tot.	420	423	3	383	563	48	1								6	2		1		13	1			1	9	1		3	7	3	6	4	
1	35	24		29	44	2									3	1				2	1		1		3								
2	22	17		20	36						1				5		1			2	1		2					1					
3	17	8		11	13	1	13		1						3					2			1										
4a	24	12		13	31	1									6					5	2		1		3			1					
4b	24	12		15	16										3	3		1		2	3				2								
5a	33	40		30	41	3									2					3	1				1							2	
5b	20	8	1	9	19	1									4					1	1				1						1	1	
6a	22	12		15	28	1				1					2					1													
6b	41	23		23	32	1									2	1				3	1				1								
7	64	36		37	64	2									9	2				6	2				2					1	2	1	
8	43	47	1	45	73	1									1					1			1		1				1	1			
9a	27	16		16	24										2					4	1										1	1	
9b	44	35		27	42											2				2					2				1		2		
NM Tot.	416	290	2	290	463	13	13		1	1	1				42	9	1	1		34	13		6		16			2	2	2	6	5	
Total	836	713	5	673	1,026	61	14	0	1	1	1	0	0	0	48	11	1	2	0	47	14	0	6	1	25	1	0	5	9	5	12	9	0

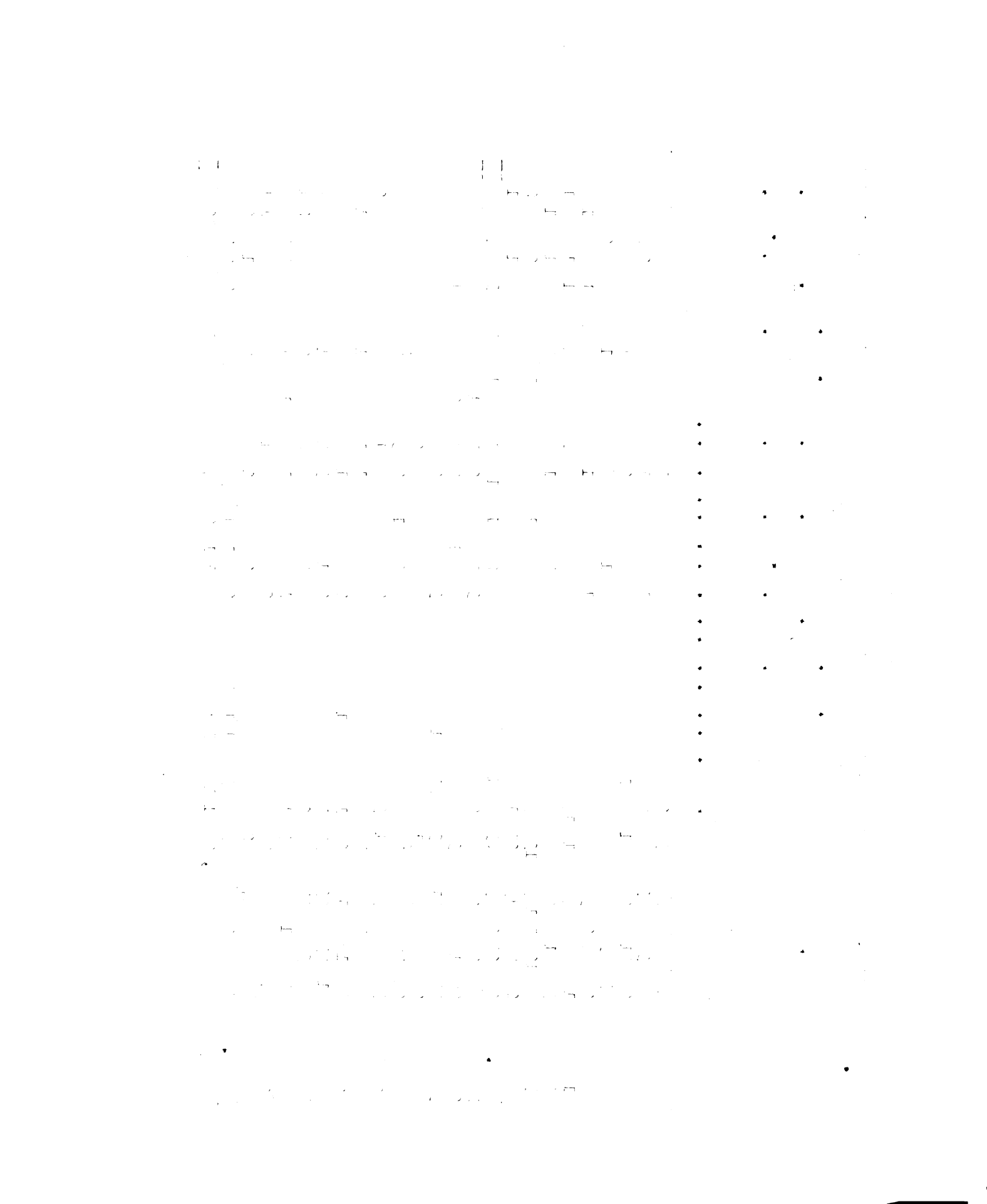


TABLE 11 (Continued)

Teaching Assignment

Econ. Area	Art & Science	Art & Soc. St.	Art & Speech	Comm. & Dr.Trng.	Comm. & English	Comm. & F. Lang.	Comm. & Guidance	Comm. & Home Ec.	Comm. & Ind.Arts	Comm. & Math.	Comm. & Music	Comm. & Phy. Ed.	Comm. & Reading	Comm. & Science	Comm. & Soc. St.	Comm. & Speech
A					1		1			3					2	
B		1			3	1	1			7		1			5	
C															1	
D	2				2	1	1			6		2		3	3	
E		1			1					1		2				
F1					4					2	1	1			2	1
F2		1			4					5		2			1	
F3	1	4			3	2	4			3				1	1	1
G						1						1		1		
M Tot.	3	7			18	5	7			27	1	9		5	15	2
1					3					10				1	7	
2					4			1		2		1			1	
3					5					3		2		1	3	
4a					3	1		1	1	2		2			4	1
4b		2			3	2			1	1				1	3	
5a		1			2					5		2				
5b					5	1				6		1			2	
6a			1							2					2	
6b					4	2		1		1					2	
7					2	2				2		4		1	3	
8					1		1			2		1			3	
9a				1	1					2		2			1	
9b		1			1		2		1	2					3	
NM Tot.		4	1	1	34	8	3	3	3	40		15		4	34	1
Total	3	11	1	1	52	13	10	3	3	67	1	24	0	9	49	3

Econ. Area	Dr.Tr. & English	Dr.Tr. & F.Lang.	Dr.Tr. & Guid.	Dr.Tr. & Home Ec.	Dr.Tr. & Ind.Arts	Dr.Tr. & Math.	Dr.Tr. & Music	Dr.Tr. & Phy. Ed.	Dr.Tr. & Reading	Dr.Tr. & Science	Dr.Tr. & Soc. St.	Dr.Tr. & Speech	Eng. & F. Lang.	Eng. & Guidance	Eng. & Home Ec.	Eng. & Ind. Arts	Eng. & Math.	Eng. & Music	Eng. & Phy. Ed.
A													10		1		7	3	3
B						1				2			12	1	1		5	1	
C			1		2								5	2			2	1	
D						2	1	1		1	3		17		2		4	3	
E					1	1		1					9				5		4
F1			1				1	3			1		21	1	1		7	1	2
F2	1				1		1	1		4	3		12		2		3	1	4
F3			1		6	2		1		1			21	7	1		8	3	
G								2		1			5				1	2	1
M Tot.	1		3		10	6	3	9		9	7		112	11	8		42	15	14
1					6					1	3		13	1	3		4	3	3
2					1			1			2		8		4		4	1	
3					1			1					7		5		3	2	
4a					3			1		1	2		8	1	4		5	8	6
4b	1					1				1	1		12		1	1	3	3	1
5a					1	2	1	1		1	2		13		4		1	4	3
5b								1		1	1		7		1		1	5	3
6a	1	1								2	1		8		1		1	3	1
6b						1		1					12		4	1	4	5	5
7	3				2	2	1	3		2	1	1	25	2	2		12	6	6
8					3			4			3		15			1	3	2	3
9a					1	2		3		2	2		10		2		5	1	3
9b		1			2			1		1	1		18	4	1		1	3	3
NM Tot.	5	2			20	8	2	17		12	19	1	156	8	32	3	47	46	37
Total	6	2	3	0	30	14	5	26	0	21	26	1	268	19	40	3	89	61	51

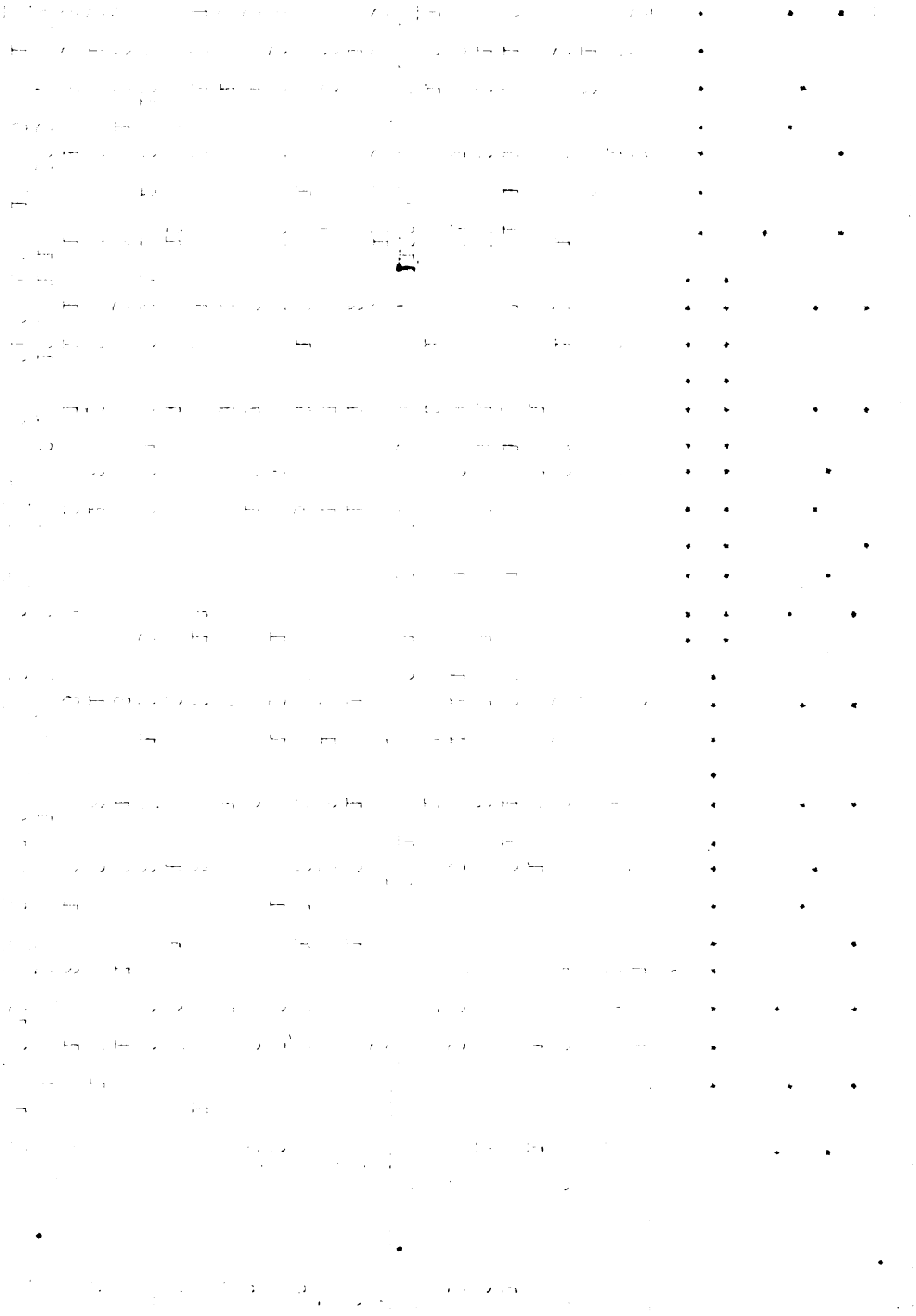


TABLE 11 (Continued)

Teaching Assignment

Econ. Area	Eng. & Reading	Eng. & Science	Eng. & Soc. St.	Eng. & Speech	F.Lang. & Guid.	F.Lang. & HomeEc.	F.Lang. & I.Arts	F.Lang. & Math.	F.Lang. & Music	F.Lang. & Phy.Ed.	F.Lang. & Read.	F.Lang. & Sci.	F.Lang. & Soc.St.	F.Lang. & Speech
A		1	9	4				1				1		
B		4	31	14				1	1			1	3	
C			9	1										
D		6	16	14				3					2	
E	1	1	21	2						2			1	
F1			42	6				1					5	
F2		2	16	9				1					2	
F3	1	2	92	22	2			2					3	
G		2	21	5										
M Tot.	2	18	257	77	2			9	1	2		2	16	
1		4	25	7		1							3	
2		5	14	4				2				1	3	
3		2	10	3								1	2	1
4a		9	16	7		1		3				2	4	1
4b	1	2	14	6					1	1			1	
5a		4	8	9				1	1	1			3	1
5b	1	4	16	5										
6a		2	5	7									3	
6b		2	19	5		1		1					1	
7		2	28	18				1					2	
8		1	21	8	1			1					2	
9a		2	12	8				3	1	1			3	
9b	2	1	44	8									2	
NM Total	4	40	232	95	1	3		12	3	3		4	29	3
Total	.6	58	489	172	3	3	0	21	4	5	0	6	45	3

Econ. Area	Guid. & Home Ec.	Guid. & Ind.Arts	Guid. & Math.	Guid. & Music	Guid. & Phy. Ed.	Guid. & Reading	Guid. & Science	Guid. & Soc. St.	Guid. & Speech
A	1				2		1	1	
B			2		1		1		
C	1							1	
D			2					2	
E								4	
F1			1	1			4	3	1
F2									
F3	1		5		1		3	6	
G					2			2	
M Tot.	3		10	1	6		9	19	1
1	1							1	
2		1							
3	1		1				1	1	
4a	1								
4b								1	
5a			2						
5b								1	
6a					1			1	
6b							1	1	
7	2		1		1		2	4	1
8		1					1		
9a								1	
9b	1	2	1		2			1	1
NM Total	6	4	5		4		5	12	2
Total	9	4	15	1	10	0	14	31	3

Econ. Area	Home Ec. & I.Arts	Home Ec. & Math.	Home Ec. & Music	Home Ec. & Phy.Ed	Home Ec. & Read.	Home Ec. & Sci.	Home Ec. & Soc.St	Home Ec. & Speech	Ind.Arts & Math.	Ind.Arts & Music	Ind.Arts & P. E.	Ind.Arts & Read.
A									6		2	
B							1		2		1	
C												
D		1		2			1		4		6	
E							1		1		1	
F1				1							6	
F2									2		1	
F3				1		1			6		4	
G		1					1		1		5	
M Tot.		2		4		1	4		22		26	
1				1		1	4		5		5	
2						2	1		3		3	
3				1					2		4	
4a		1		1		2			4		4	
4b				5		1	2		4	1	1	
5a						2			1		3	
5b						3				1	4	
6a												
6b				1		1			1		1	
7						2	1	1	2		5	
8		2					1		2		2	
9a						1			3		2	
9b		1				3	1		1		2	
NM Total		4		9		18	10	1	28	2	36	
Total	0	6	0	13	0	19	14	1	50	2	62	0

TABLE 11 (Continued)

Econ. Area	Teaching Assignment																							No Info.	Total
	Ind.Arts & Sci.	Ind.Arts & S. S.	Ind.Arts & Speech	Math. & Music	Math. & Phy. Ed.	Math. & Reading	Math. & Science	Math. & Soc. St.	Math. & Speech	Music & Phy. Ed.	Music & Reading	Music & Science	Music & Soc. St.	Music & Speech	Phy.Ed. & Reading	Phy.Ed. & Science	Phy.Ed. & Soc.St.	Phy.Ed. & Speech	Read. & Science	Read. & Soc. St.	Read. & Speech	Sci. & Soc. St.	Sci. & Speech	Soc. St. & Speech		
A		1		1	2		4	4								5	9					2	1	1	3	1,013
B	1				3		6	8		2			1			7	14					6		2	18	1,897
C					3		1									3	5					1			1	1,085
D	3	2			3		20	8								8	13					6		3	28	2,027
E		1			5	1	14	4					1			4	8					4	1	1		1,311
F1					2		22	6					1			4	5					4	1	1	2	3,444
F2					2		11	3	1				2			5	12					2		1	8	1,472
F3	2				5	1	49	13				1	1			10	14					9			9	4,596
G		1		1	1		10	5								3	2					3		1	2	983
M Tot.	6	5		2	25	2	137	51	1	2		1	6			49	82					37	3	10	71	17,828
1	3	1		1	4		21	4		1		1	3			5	8					9		1	3	1,475
2		2		1	5		11	3					2			3	3					6			1	1,009
3	4	3			1		16	3					1	1		4	4					2			1	814
4a	1	3	1	1	6		18	10					4	1		7	12					4			8	1,269
4b	2	3		1	4		19	8					5			4	9					6	1		1	1,090
5a	1	2			7		12	1					1			7	8	1				2		2	35	1,764
5b		1			3		17	3	1	1			4			2	11			1		1			5	839
6a	2				4		3	1					1	1			6					3		1		813
6b		1			6		17	4				1	3			5	13					5			25	1,305
7	3	2			7		29	13		1		1	1			15	26			1		5			3	2,646
8				1	11		11	5					4	1		6	11			2		1		3	2	2,187
9a	1	3		1	2		14	3		1			3			5	10			1		5			3	1,102
9b		1		3	4		16	2					2			8	7					6		5	10	1,794
NM Tot.	17	22	1	9	64		204	60	1	4		3	34	4		71	128	1		5		55	1	12	97	18,107
Total	23	27	1	11	90	2	341	111	2	6	0	4	40	4	0	120	210	1	0	5	0	92	4	22	168	35,935

*Specific Assignment not indicated.

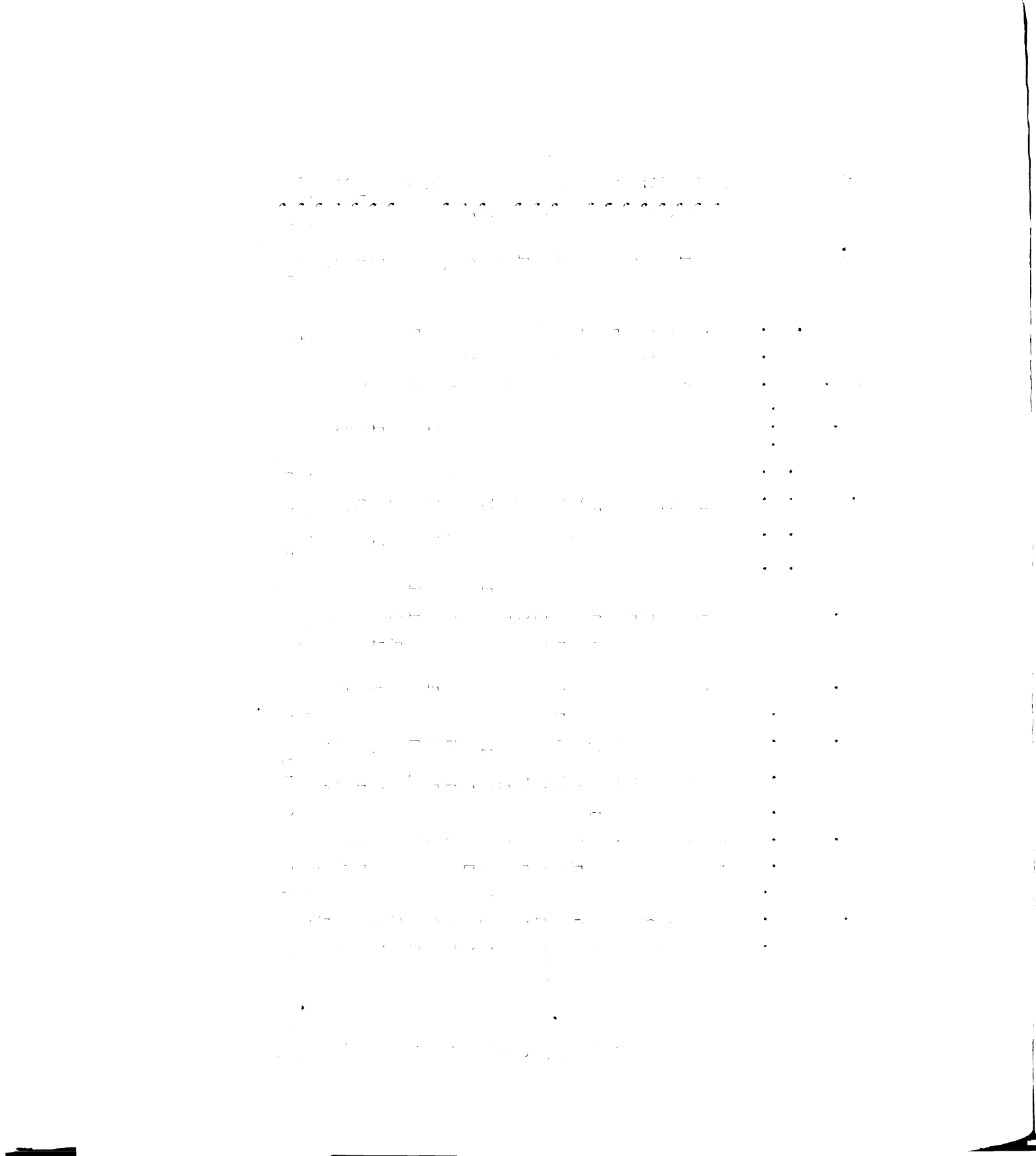


TABLE 12

NUMERICAL DISTRIBUTION OF TEACHERS IN EACH ECONOMIC AREA BY TEACHING ASSIGNMENT
(FULL- AND PART-TIME ASSIGNMENTS COMBINED)

Economic Area	Teaching Assignment										
	El. Music Art & P.E.	Kg	1st	2nd	3rd	4th	5th	6th	Kg thru 6	Elem.*	Total Elem.
A	4.5	55.0	90.0	68.5	60.5	60.0	64.0	57.5	39.9	56.0	555.9
B	16.0	103.5	139.0	116.5	109.0	106.5	104.0	83.5	78.8	82.5	939.3
C	16.5	49.5	69.5	62.5	60.5	53.0	55.0	52.5	8.4	166.5	593.9
D	51.0	112.0	162.0	130.0	128.0	112.5	100.5	87.5	24.4	78.0	985.9
E	10.0	68.5	99.0	86.0	83.5	85.0	82.5	65.5	58.4	5.0	643.4
F1	41.5	179.5	270.0	239.5	228.5	224.0	201.5	173.5	8.0	227.0	1,793.0
F2	17.5	72.0	112.0	100.5	88.0	88.5	81.5	73.5	17.0	95.0	745.5
F3	166.5	310.0	278.5	294.0	290.5	262.0	245.0	217.5	6.4	282.5	2,352.9
G	28.5	40.5	55.5	42.5	36.5	34.5	34.5	33.0	1.0	219.5	526.0
Met. Total	352.0	990.5	1,275.5	1,140.0	1,085.0	1,026.0	968.5	844.0	242.3	1,212.0	9,135.8
1	14.5	69.5	82.5	82.0	79.0	81.0	80.0	67.0	2.8	95.5	653.8
2	5.0	48.0	49.0	47.5	49.5	45.0	45.5	37.0	20.8	145.5	492.8
3	6.0	35.5	47.5	38.0	39.0	33.5	36.0	32.0	14.8	142.5	424.8
4a	9.5	53.0	63.5	59.0	60.0	59.5	57.0	53.0	120.6	109.0	644.1
4b	9.5	45.0	57.0	45.5	48.5	51.0	46.5	43.0	86.0	135.5	567.5
5a	9.0	54.0	76.0	61.5	66.0	62.0	61.5	60.5	79.4	423.5	953.4
5b	5.5	29.0	34.0	31.5	30.5	31.5	28.5	27.0	64.8	142.5	424.8
6a	5.0	25.5	36.5	32.5	31.0	33.0	27.5	32.0		220.5	443.5
6b	10.5	56.5	83.5	73.5	68.0	65.0	66.0	59.5	78.2	116.5	677.2
7	12.0	102.0	138.5	127.0	121.0	123.0	112.0	106.0	216.2	367.0	1,424.7
8	37.0	94.0	136.5	117.0	112.5	115.5	103.0	96.0	32.8	335.5	1,179.8
9a	14.0	44.0	55.0	48.5	48.0	51.5	43.0	43.0	104.0	144.5	595.5
9b	10.5	87.5	141.5	106.0	97.5	92.0	95.5	87.0	80.8	163.5	961.8
Non-Met. Total	148.0	743.5	1,001.0	869.5	850.5	843.5	802.0	743.0	901.2	2,541.5	9,443.7
Total	500.0	1,734.0	2,276.5	2,009.5	1,935.5	1,869.5	1,770.5	1,587.0	1,143.5	3,753.5	18,579.5

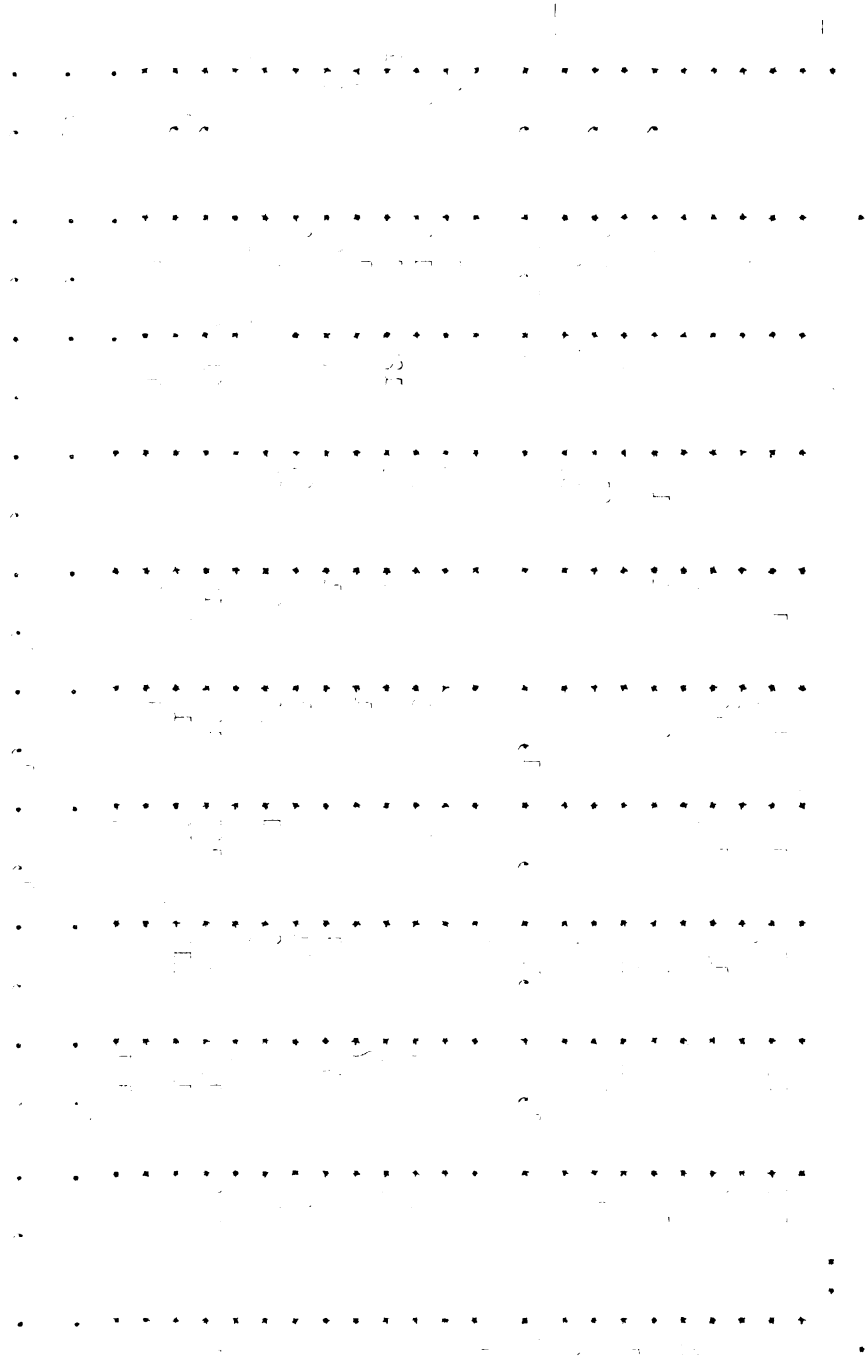


TABLE 12 (Continued)

Economic Area	Teaching Assignment													
	7th	8th	9th*	Jr.Hi & Sub.	Agri-cult'r	Art	Comm-ercial	Driver Trng.	English	For. Lang.	Guid-ance	Home Ec.	Ind. Arts	Math.
A	18.5	12.1			7.5	7.0	24.5	1.0	61.5	11.0	5.0	18.0	40.5	42.0
B	58.6	39.6	3.0		6.0	26.5	41.0	1.5	89.0	20.5	4.0	42.0	49.5	60.0
C	18.8	17.3	1.0	3.0	7.0	14.5	25.5	3.5	58.5	11.5	5.5	25.5	30.0	39.0
D	35.3	17.8			6.5	23.5	63.0	4.0	106.5	15.5	4.5	39.0	54.5	81.0
E	15.8	14.8		1.0	6.0	10.5	39.0	4.5	74.0	14.0	3.0	27.0	39.5	49.0
F1	78.0	62.5		4.0	9.0	46.0	82.5	9.0	178.0	32.5	13.0	55.5	85.5	117.5
F2	56.5	33.5	2.0	1.0	3.0	12.5	43.0	5.5	66.0	12.5	1.0	27.0	37.5	43.5
F3	114.3	80.8	3.0		.5	45.0	129.5	12.0	235.5	37.5	24.0	89.0	150.0	155.0
G	20.0	16.0			5.0	16.0	20.5	3.5	49.0	9.0	2.0	21.5	29.0	29.0
Met. Total	415.8	294.4	9.0	9.0	50.5	201.5	468.5	44.5	918.0	164.0	62.0	344.5	516.0	616.0
1	40.1	35.1		2.0	9.5	7.0	53.0	6.0	88.5	18.5	1.5	38.5	58.5	51.0
2	23.1	16.6			15.0	7.5	31.5	2.0	60.5	10.0	1.5	30.5	37.5	40.5
3	24.1	12.6		1.0	16.0	4.5	28.0	1.0	40.5	10.5	3.0	17.5	16.5	25.5
4a	38.2	22.2		1.0	33.5	5.0	44.0	4.5	69.0	12.0	1.0	42.0	28.5	42.0
4b	35.0	29.5		6.0	19.0	8.5	33.5	3.0	51.0	11.5	.5	28.5	22.0	38.0
5a	42.8	33.3		1.0	35.0	14.0	42.5	5.0	81.5	21.0	1.0	34.0	52.0	47.0
5b	17.6	16.6		1.0	28.0	2.5	25.5	2.5	48.5	6.0	.5	26.0	21.0	31.5
6a	9.0	8.0			17.0	6.5	23.0	3.0	39.5	8.0	3.0	18.5	22.0	27.5
6b	29.9	17.9	1.0	2.0	16.5	6.5	33.0	2.0	76.0	13.5	4.0	32.0	36.0	47.0
7	71.4	54.9		4.0	38.5	17.5	72.0	8.5	123.0	24.0	6.5	62.0	74.5	78.0
8	54.1	35.6	7.0		16.0	23.0	43.5	11.0	106.0	20.5	6.0	44.5	70.5	73.5
9a	24.0	25.0		4.0	23.5	4.5	26.5	6.5	49.0	10.0	.5	26.5	25.0	32.5
9b	35.6	25.6		2.0	12.0	18.0	43.5	7.0	93.0	16.5	10.0	38.5	44.0	53.5
Non-Met. Total	444.9	332.9	8.0	24.0	279.5	125.0	499.5	62.0	926.0	182.0	39.0	439.0	508.0	587.5
Total	860.7	627.3	17.0	33.0	330.0	326.5	968.0	106.5	1,844.0	346.0	101.0	783.5	1,024.0	1,203.5

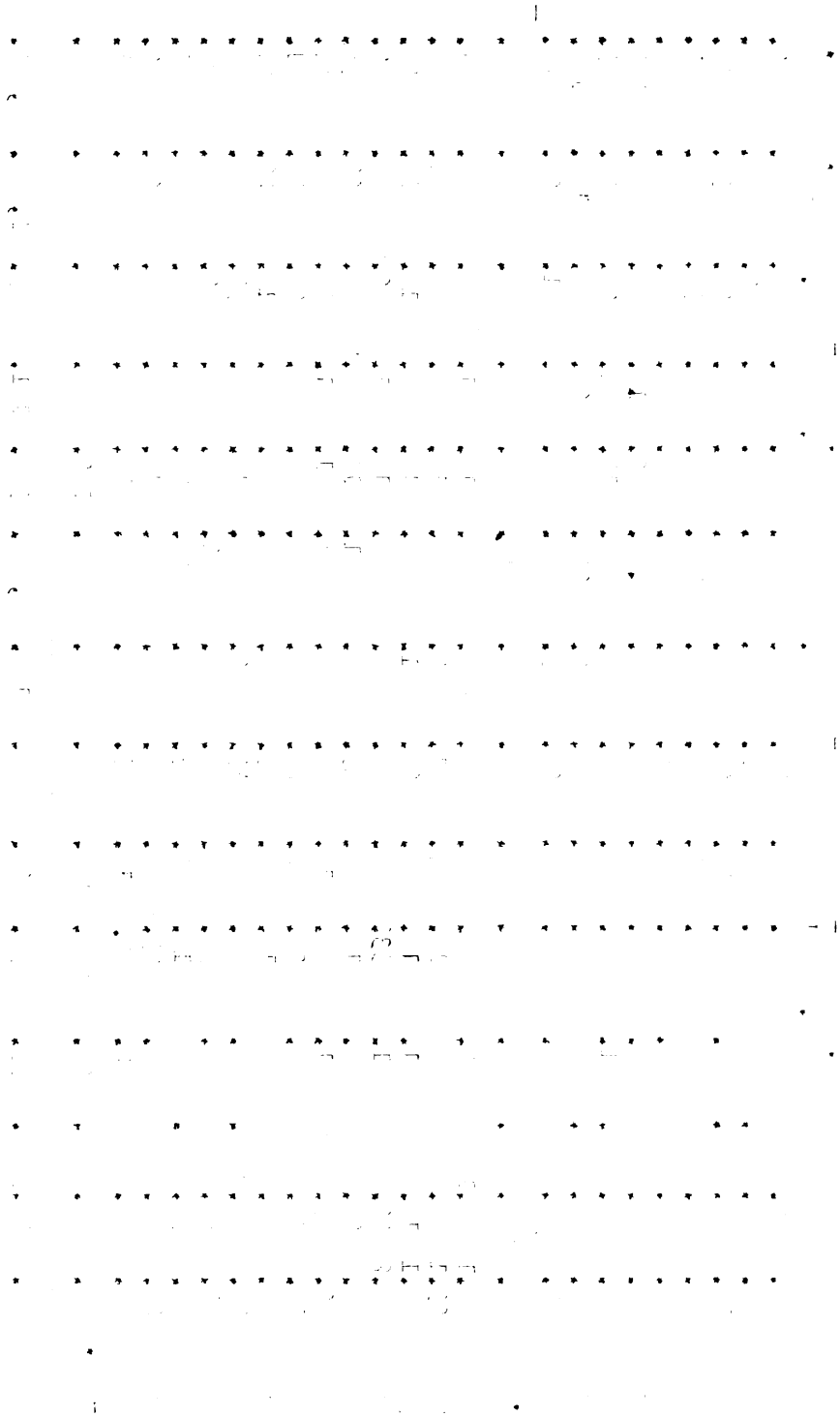


TABLE 12 (Continued)

Economic Area	Teaching Assignment											Total
	Music	Phy.Ed.	Read-ing	Science	Social Science	Speech	Jr.* Coll.	Total Sec.	Total Admin.	Total Sp. Ed.	No Info.	
A	18.5	26.5		26.0	49.5	5.0		374.1	59.0	21.0	3.0	1,013.0
B	42.5	49.5		57.5	90.0	10.0		690.7	168.0	81.0	18.0	1,897.0
C	26.5	26.5		31.5	49.5	4.5	1.0	400.1	75.0	15.0	1.0	1,085.0
D	55.0	60.5		75.5	105.5	18.5		766.1	156.0	91.0	28.0	2,027.0
E	25.0	48.5	3.0	42.5	63.5	7.0		487.6	137.0	43.0		1,311.0
F1	116.0	102.5		92.0	153.5	22.0		1,259.0	291.0	99.0	2.0	3,444.0
F2	39.0	44.5		38.5	61.5	9.5		537.5	149.0	32.0	8.0	1,472.0
F3	100.5	150.5	2.0	143.0	209.5	14.5		1,696.1	408.0	130.0	9.0	4,596.0
G	28.5	33.0		23.0	39.0	4.0		348.0	75.0	32.0	2.0	983.0
Met. Total	451.5	542.0	5.0	529.5	821.5	95.0	1.0	6,559.2	1,518.0	544.0	71.0	17,828.0
1	40.0	38.0		53.0	79.0	6.0		625.2	179.0	14.0	3.0	1,475.0
2	25.5	25.5		35.0	55.0	2.0		419.2	82.0	14.0	1.0	1,009.0
3	19.5	16.5		27.5	27.5	3.5	13.0	308.2	73.0	7.0	1.0	814.0
4a	32.0	31.5		37.5	61.5	6.5		511.9	99.0	6.0	8.0	1,269.0
4b	31.0	25.0	.5	34.5	45.0	3.5		425.5	94.0	2.0	1.0	1,090.0
5a	37.0	57.5		46.0	56.5	9.5		616.6	131.0	28.0	35.0	1,764.0
5b	26.0	21.5	2.0	23.5	40.0	4.0		344.2	59.0	6.0	5.0	839.0
6a	25.0	18.0		21.5	40.0	6.0		295.5	62.0	12.0		813.0
6b	45.5	39.0		40.5	57.0	3.5		502.8	88.0	12.0	25.0	1,305.0
7	71.5	70.5	.5	71.0	108.5	12.5		969.3	211.0	38.0	3.0	2,646.0
8	51.5	67.0	2.0	55.5	101.0	7.0		795.2	171.0	39.0	2.0	2,187.0
9a	32.0	31.0	.5	33.0	46.5	4.0		404.5	85.0	14.0	3.0	1,102.0
9b	50.5	49.0	1.0	45.5	80.0	7.0		632.2	145.0	45.0	10.0	1,794.0
Non-Met. Total	487.0	490.0	6.5	524.0	797.5	75.0	13.0	6,850.3	1,479.0	237.0	97.0	18,107.0
Total	938.5	1,032.0	11.5	1,053.5	1,619.0	170.0	14.0	13,409.5	2,997.0	781.0	168.0	35,935.0

*Grade or subject not specified.

TABLE 13

PERCENTAGE DISTRIBUTION OF TEACHERS IN EACH ECONOMIC AREA
BY MAJOR CATEGORY OF TEACHING ASSIGNMENT

Economic Area	Teaching Assignment				No Info.
	Administrative	Special Education	Elementary	Secondary	
A	5.8	2.1	54.9	36.9	.3
B	8.9	4.3	49.5	36.4	.9
C	6.9	1.4	54.7	36.9	.1
D	7.7	4.5	48.6	37.8	1.4
E	10.4	3.3	49.1	37.2	
F1	8.4	2.9	52.1	36.5	.1
F2	10.1	2.2	50.7	36.5	.5
F3	8.9	2.8	51.2	36.9	.2
G	7.6	3.3	53.5	35.4	.2
Met. Total	8.5	3.1	51.2	36.8	.4
1	12.1	1.0	44.3	42.4	.2
2	8.1	1.4	48.8	41.6	.1
3	9.0	.8	52.2	37.9	.1
4a	7.8	.5	50.8	40.3	.6
4b	8.6	.2	52.1	39.0	.1
5a	7.4	1.6	54.0	35.0	2.0
5b	7.1	.7	50.6	41.0	.6
6a	7.6	1.5	54.6	36.3	
6b	6.8	.9	51.9	38.5	1.9
7	8.0	1.4	53.9	36.6	.1
8	7.8	1.8	53.9	36.4	.1
9a	7.7	1.3	54.0	36.7	.3
9b	8.1	2.5	53.6	35.2	.6
Non-Met. Total	8.2	1.3	52.2	37.8	.5
Total	8.3	2.2	51.7	37.3	.5

TABLE 14

NUMERICAL DISTRIBUTION OF TEACHERS IN EACH ECONOMIC AREA BY TOTAL YEARS OF TEACHING

Economic Area	Years of Teaching															
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
A	56	58	51	31	37	24	32	15	24	23	34	29	22	24	19	19
B	167	121	119	101	57	49	63	36	30	53	46	40	61	42	48	40
C	68	70	78	61	54	28	31	29	23	37	27	30	28	20	32	21
D	137	114	149	80	75	61	41	46	34	47	55	52	51	51	33	43
E	130	101	91	63	41	39	27	24	30	26	34	27	17	30	29	29
F1	333	290	252	200	135	120	96	81	93	108	101	75	87	91	77	72
F2	141	136	124	63	54	51	47	47	37	44	56	45	47	44	32	42
F3	362	348	336	259	210	149	130	116	101	118	118	129	130	112	114	121
G	77	73	47	65	53	37	21	27	39	19	19	19	25	21	26	24
Met. Total	1,471	1,311	1,247	923	716	558	488	421	411	475	490	446	468	435	410	411
1	82	78	65	44	40	30	36	29	37	42	30	33	32	41	27	50
2	94	78	71	50	30	35	18	28	21	26	31	31	25	33	17	23
3	46	42	50	47	32	23	19	23	24	26	20	21	27	17	27	30
4a	76	75	90	59	38	32	30	29	21	35	35	35	41	41	31	53
4b	96	95	95	64	39	32	26	30	34	33	35	36	23	30	47	23
5a	181	98	105	73	50	47	40	45	47	43	36	41	45	39	36	37
5b	49	46	62	49	32	19	23	10	16	16	10	13	24	26	20	15
6a	50	61	58	55	38	21	33	20	26	18	23	25	22	26	18	14
6b	92	76	78	60	44	47	45	32	27	33	37	28	31	28	20	27
7	172	164	142	134	84	65	58	64	81	65	68	68	81	61	78	53
8	273	194	163	129	76	67	56	58	49	42	45	53	51	46	41	42
9a	69	70	66	55	36	29	27	26	23	22	15	24	21	26	27	27
9b	129	116	101	97	76	53	47	44	49	51	35	40	52	52	49	41
Non-Met. Total	1,409	1,193	1,146	916	615	500	458	438	455	452	420	448	475	466	438	435
Total	2,880	2,504	2,393	1,839	1,331	1,058	946	859	866	927	910	894	943	901	848	846

TABLE 14 (Continued)

Economic Area	Years of Teaching																	
	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33
A	23	13	19	26	21	15	14	34	16	23	18	25	19	13	17	15	19	12
B	43	40	44	37	44	37	33	39	42	38	39	39	44	34	48	25	25	24
C	22	37	25	23	23	17	25	22	24	21	21	27	17	13	15	16	7	8
D	62	42	61	50	43	41	37	44	40	51	60	54	44	43	47	30	39	35
E	25	37	24	29	23	26	29	26	24	28	21	19	23	37	22	12	17	10
F1	82	80	81	75	67	58	62	65	62	62	54	70	56	60	51	38	29	35
F2	32	30	40	34	23	29	28	32	30	31	21	17	21	15	16	14	8	6
F3	101	99	106	99	95	79	80	100	101	106	90	89	97	60	71	60	47	39
G	20	21	14	18	26	12	11	22	14	18	14	23	22	22	21	16	12	17
Met. Total	410	399	414	391	365	314	319	384	353	378	338	363	343	297	308	226	203	186
1	42	30	41	50	37	35	23	23	33	57	31	38	37	32	27	23	21	17
2	26	32	33	20	21	19	21	15	21	22	20	13	14	20	15	7	10	7
3	18	18	13	21	18	14	18	14	15	16	13	7	18	10	12	10	9	8
4a	29	24	32	30	30	28	30	24	15	22	20	16	18	15	14	11	8	4
4b	26	21	25	26	19	16	20	17	21	15	15	10	9	17	9	7	8	5
5a	28	36	40	36	31	49	33	34	28	29	27	22	29	18	25	17	14	13
5b	22	15	11	16	13	12	16	20	12	5	9	5	10	11	4	3	2	3
6a	22	26	22	26	16	14	11	12	17	19	11	10	13	8	9	12	11	7
6b	24	30	28	27	24	29	17	28	19	23	32	24	21	22	19	9	10	13
7	68	66	53	63	51	51	46	57	52	44	33	43	44	27	26	22	22	23
8	51	40	36	31	33	40	47	41	38	28	39	26	28	26	23	30	16	21
9a	17	29	25	18	19	23	17	23	29	13	22	17	10	15	9	6	12	8
9b	36	41	38	40	35	34	34	42	32	39	37	42	25	21	26	8	8	14
Non-Met. Total	409	408	397	404	347	364	333	350	332	332	309	273	276	242	218	165	151	143
Total	819	807	811	795	712	678	652	734	685	710	647	636	619	539	526	391	354	329

TABLE 14 (Continued)

Economic Area	Years of Teaching																				No Info.	Total
	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54		
A	8	11	6	7	8	3	14	7	3	4	3	1		2	1			1		1	1	92	1,013
B	25	13	11	23	18	13	15	6	7	9	2		2	1								4	1,897
C	9	11	10	7	10	3	5	6	3	2	1	2		1		1						14	1,085
D	19	18	21	8	9	11	3	2	4	2	1		1		2							34	2,027
E	8	12	10	7	5	4	3	4	3	1												84	1,311
F1	31	30	22	15	13	9	8	1	1	1	2											13	3,444
F2	7	4	2	2	2	2	1				2								2			11	1,472
F3	38	36	27	26	18	17	16	8	4	8	4		1							1		20	4,596
G	15	13	6	6	5	6	3	3	4	4	2				1								983
Met. Total	160	148	115	101	88	68	68	37	29	31	17	3	4	4	4	1		1	2	2	1	272	17,828
1	18	14	17	17	5	16	9	4	10	6	4	2	3	4	3	1	2					47	1,475
2	6	13	4	5	8	3	2	3	2	2		2										12	1,009
3	3	3	5	4	2	5	3	1	1		1	2										58	814
4a	8	2	3	8	4	1	1		2	2	1				1							145	1,269
4b	5	5	5	1	2	2	1	4	2	1	2											36	1,090
5a	5	9	11	6	6	6	7	4	6	3	1											228	1,764
5b	1		2	1	2			1				1										212	839
6a	10	4	5	9	2		1	1		1			1									5	813
6b	7	8	8	8	3	3	2	2	1	1	1											157	1,305
7	15	17	11	11	6	4	9	3	3	5			1	2								330	2,646
8	21	12	17	14	9	3	5	5	2	3	2	1	1	1		1	1					110	2,187
9a	5	11	7	2	1	1		1	1		2				1		1					194	1,102
9b	13	14	9	11	7	4	5	2	8	3	4	1		1		1						127	1,794
Non-Met. Total	117	112	104	97	57	48	45	31	38	27	18	9	6	8	5	3	4					1,661	18,107
Total	277	260	219	198	145	116	113	68	67	58	35	12	10	12	9	4	4	1	2	2	1	1,933	35,935

TABLE 15

PERCENTAGE DISTRIBUTION OF TEACHERS IN EACH ECONOMIC AREA BY TOTAL YEARS OF TEACHING

Economic Area	Years of Teaching								No Info.
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-54	
A	23.0	11.6	12.6	9.9	9.9	9.7	7.0	7.2	9.1
B	29.8	12.2	12.5	10.8	10.3	10.2	7.7	6.3	.2
C	30.5	13.7	12.6	11.8	10.2	9.1	5.1	5.7	1.3
D	27.4	11.3	11.9	12.7	10.1	12.4	8.4	4.1	1.7
E	32.5	11.1	10.4	11.0	9.8	9.8	5.3	3.7	6.4
F1	35.1	14.5	12.5	11.3	9.1	8.8	5.3	3.0	.4
F2	35.2	15.4	15.2	12.1	9.6	7.1	3.5	1.2	.7
F3	33.0	13.4	13.1	11.5	9.9	9.6	5.5	3.6	.4
G	32.0	14.5	11.2	9.9	8.6	10.1	8.3	5.4	
Met. Total	31.8	13.2	12.6	11.4	9.7	9.6	6.1	4.1	1.5
1	20.9	11.8	11.1	14.5	10.2	13.2	7.2	7.9	3.2
2	32.0	12.7	13.6	13.3	9.6	8.8	4.4	4.4	1.2
3	26.6	14.1	13.8	12.3	9.7	7.9	5.2	3.3	7.1
4a	26.6	11.6	14.4	13.2	10.0	7.2	3.6	2.0	11.4
4b	35.7	14.2	15.7	11.1	8.5	6.1	3.1	2.3	3.3
5a	28.8	12.6	11.2	10.0	9.9	7.1	4.2	3.3	12.9
5b	28.4	10.0	11.1	9.4	8.7	4.8	1.5	.8	25.3
6a	32.2	14.5	14.0	13.6	8.6	7.5	6.0	3.0	.6
6b	26.8	14.1	11.0	10.4	9.0	9.4	4.5	2.8	12.0
7	26.3	12.6	13.4	11.5	9.7	7.2	4.1	2.7	12.5
8	38.2	12.4	10.8	9.2	9.1	6.7	5.1	3.5	5.0
9a	26.9	11.5	10.3	10.5	10.1	7.0	3.6	2.5	17.6
9b	28.9	13.6	12.7	10.9	9.9	9.2	3.8	3.9	7.1
Non-Met. Total	29.2	12.7	12.4	11.3	9.5	7.9	4.4	3.4	9.2
Total	30.5	13.0	12.5	11.3	9.6	8.8	5.2	3.7	5.4

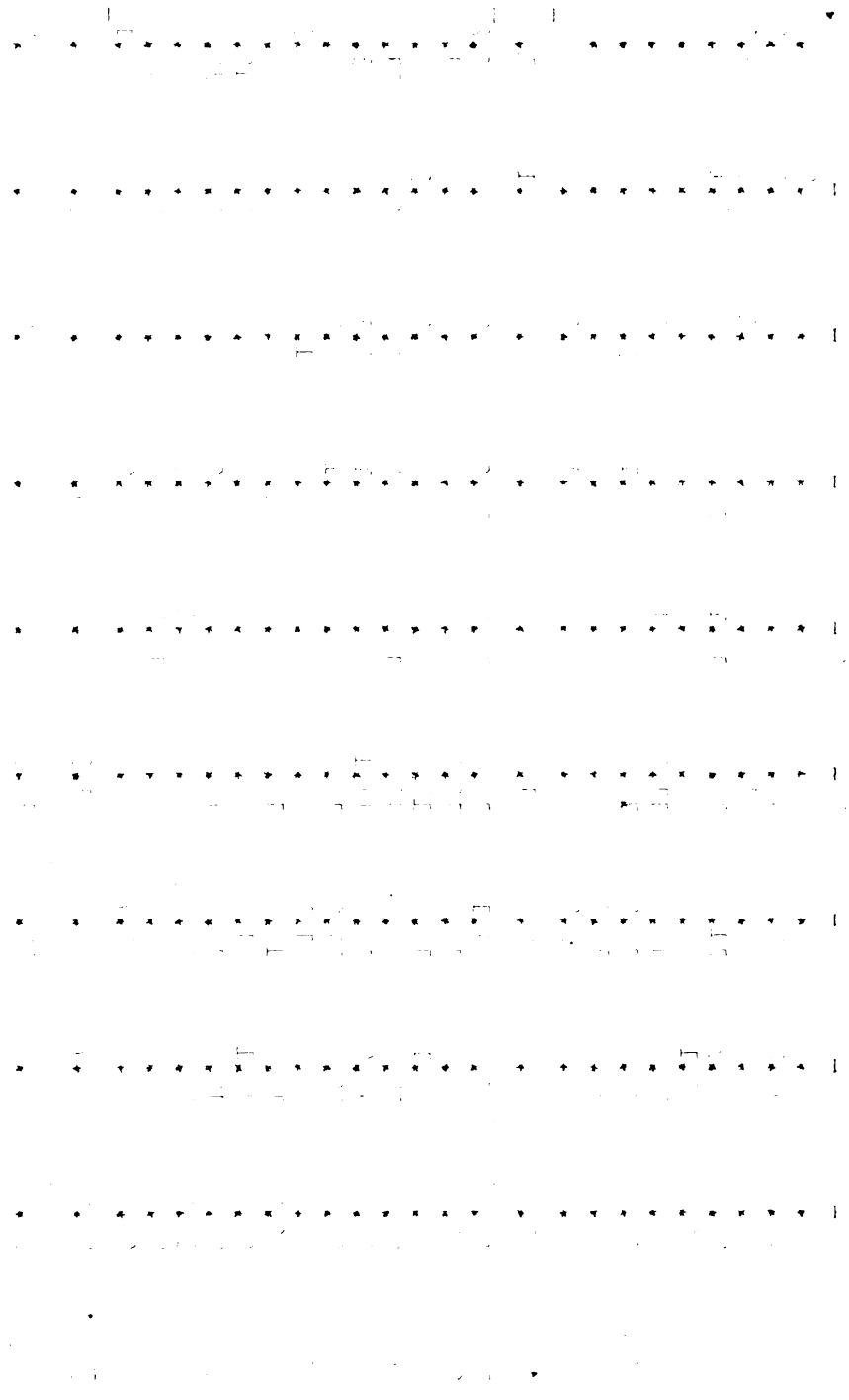


TABLE 16

NUMERICAL DISTRIBUTION OF TEACHERS IN EACH ECONOMIC AREA BY YEARS OF TEACHING IN THE PRESENT SCHOOL

Economic Area	Years of Teaching													
	0	1	2	3	4	5	6	7	8	9	10	11	12	13
A	143	97	65	40	50	43	35	45	39	37	30	21	14	14
B	314	241	167	154	88	102	109	60	48	47	30	19	18	15
C	169	121	100	70	71	47	63	28	24	35	23	12	18	6
D	306	197	164	110	110	92	80	78	45	64	57	27	27	21
E	256	188	127	74	46	55	50	59	48	52	36	19	10	15
F1	740	503	272	202	212	194	145	160	118	128	122	54	22	22
F2	337	184	141	94	94	84	65	64	51	55	59	29	13	11
F3	832	522	417	262	269	240	204	210	162	168	132	76	57	47
G	200	130	59	50	46	48	38	40	23	21	35	18	8	9
Met. Total	3,297	2,183	1,512	1,056	986	905	789	744	558	607	524	275	187	160
1	189	115	85	76	80	56	56	46	52	55	40	20	13	34
2	192	122	83	69	54	60	50	48	25	29	31	23	14	8
3	147	101	72	68	37	39	38	35	36	22	17	17	10	7
4a	235	204	122	74	85	72	80	59	45	39	29	18	17	19
4b	267	178	111	83	59	57	44	44	35	24	19	10	14	7
5a	305	220	143	128	115	84	93	75	45	34	25	21	15	12
5b	138	93	74	53	45	44	31	28	21	16	16	9	12	1
6a	105	99	37	48	30	30	28	23	20	24	11	10	6	5
6b	259	166	106	74	87	70	61	45	35	30	25	8	7	9
7	516	354	214	146	157	148	116	108	89	60	55	26	25	17
8	483	297	150	151	125	84	90	64	66	50	47	35	23	19
9a	206	121	89	87	74	51	49	43	35	35	16	13	11	11
9b	297	174	129	83	78	69	63	54	45	31	34	25	16	16
Non-Met. Total	3,339	2,244	1,415	1,140	1,026	864	799	672	549	449	365	235	183	165
Total	6,636	4,427	2,927	2,196	2,012	1,769	1,588	1,416	1,107	1,056	889	510	370	325

TABLE 16 (Continued)

Economic Area	Years of Teaching																	
	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
A	7	6	12	12	15	11	4	5	6	15	11	16	20	19	13	6	10	8
B	24	35	16	14	27	9	15	14	19	26	27	34	27	27	28	27	17	22
C	16	10	21	10	14	9	8	17	11	17	15	14	13	8	1	11	6	12
D	20	28	23	31	25	16	18	18	32	59	45	39	43	25	34	27	17	21
E	10	17	9	14	13	2	8	4	21	18	23	12	18	16	13	13	9	8
F1	30	33	35	30	21	15	14	23	32	41	59	34	34	23	27	24	16	15
F2	16	14	15	10	4	5	3	8	9	13	9	4	4	6	1	4	1	5
F3	37	48	46	44	44	20	22	34	74	86	75	90	68	67	63	39	30	24
G	13	7	7	8	9	4	3	9	8	11	15	22	11	17	8	8	6	12
Met. Total	173	198	184	173	172	91	95	132	212	286	279	265	238	208	188	159	112	127
1	25	27	18	24	26	26	10	19	17	26	27	37	19	22	21	25	24	17
2	10	13	9	10	13	5	7	10	14	19	8	4	10	12	6	1	4	2
3	8	9	10	7	5	4	4	1	4	10	6	7	7	3	3	1	3	5
4a	9	8	6	4	8	7	3	4	4	6	10	5	2	2	5	1	3	5
4b	7	8	5	7	6	5	6	4	6	3	2	3	4	2	3	2	3	
5a	14	16	12	14	11	9	10	9	10	19	6	11	6	5	13	9	8	6
5b	3	3	5	4	3	1	3	2	6	4	3		2		2	2	2	1
6a	6	9	13	8	7	3	3	4	7	7	8	6	1	5	9	8	5	1
6b	9	11	6	9	11	8	8	4	9	9	15	12	7	10	11	5	4	5
7	21	29	15	21	15	12	6	15	12	13	17	21	15	18	16	22	12	7
8	12	18	20	13	15	13	14	10	15	12	13	17	24	17	18	16	10	7
9a	13	13	14	8	13	3	5	5	3	7	11	7	4		3	3	5	4
9b	9	5	13	29	10	23	4	11	15	18	22	13	16	12	6	2	5	7
Non-Met. Total	146	169	146	158	143	119	83	98	122	153	148	143	117	108	116	97	88	67
Total	319	367	330	331	315	210	178	230	334	439	427	408	355	316	304	256	200	194

TABLE 16 (Continued)

Economic Area	Years of Teaching																				No Info.	Total
	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51		
A	10	11	6	1	4	3	1	2	6	2	1	1	1		1		1			1	92	1,013
B	16	16	8	7	7	2	7	6	3	2			1	1							1	1,897
C	1		2	1	3	1	3	2	1	5				1		1					64	1,085
D	27	13	4	2	2	1	2														77	2,027
E	8	6	5	3	1																25	1,311
F1	17	1	4	6		3			1		1										11	3,444
F2	2	1																			57	1,472
F3	20	15	2	9	6	8	4	2	2				1								18	4,596
G	8	14	6	3	1	1	1	1			1		1								43	983
Met. Total	109	77	37	32	24	19	18	13	13	9	3	1	4	2	1	1	1			1	388	17,828
1	13	12	8	2	8	7	2	4	7	3	3	3	3	1	2	3	1	1	2		63	1,475
2	7	7	4	3	2	2	6		1	2											10	1,009
3	4	1	1		3			1	1	1	1										58	814
4a	4	3	2						1												69	1,269
4b	1	2	1					1				1									56	1,090
5a	4	4	6	2	3		1	5	2	1	1										232	1,764
5b	1																				211	839
6a	3	2	1	2				1		1											217	813
6b	4	7		1	1	1	2				1										153	1,305
7	5	4	7	1	1	2		2		1						1					304	2,646
8	10	5	4	4	3		2		1	2	1			1							206	2,187
9a	4	3		2		2	1	1						1							126	1,102
9b	10	5	7	8		2	1	2	1		1	2		1		1					419	1,794
Non-Met. Total	70	55	41	25	21	16	15	17	14	11	8	6	3	4	2	5	1	1	2		2,124	18,107
Total	179	132	78	57	45	35	33	30	27	20	11	7	7	6	3	6	2	1	2	1	2,512	35,935

TABLE 17

PERCENTAGE DISTRIBUTION OF TEACHERS IN EACH ECONOMIC AREA BY YEARS OF TEACHING IN THE PRESENT SCHOOL

Economic Area	Years of Teaching								No Info.
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-51	
A	39.0	19.6	8.5	5.5	4.0	7.3	4.5	2.5	9.1
B	50.8	19.3	5.6	5.3	5.3	7.5	4.2	1.9	.1
C	48.9	18.2	6.9	5.9	6.3	4.3	1.9	1.7	5.9
D	43.8	17.7	7.5	6.1	8.5	8.3	4.0	.3	3.8
E	52.7	20.1	6.9	4.2	5.7	5.5	2.7	.3	1.9
F1	56.0	21.7	7.3	3.9	4.9	4.1	1.5	.3	.3
F2	57.7	21.7	8.7	3.3	2.8	1.3	.6		3.9
F3	50.1	21.4	7.6	4.4	6.3	7.1	2.0	.7	.4
G	49.3	17.3	8.4	3.6	4.7	6.7	4.7	.9	4.4
Met. Total	50.7	20.2	7.4	4.6	5.6	5.9	2.6	.8	2.2
1	37.0	18.0	8.9	8.2	6.7	8.4	5.0	3.5	4.3
2	51.5	21.0	8.5	5.0	5.7	3.3	2.4	1.6	1.0
3	52.2	20.9	7.2	4.3	3.1	2.6	1.7	.9	7.1
4a	56.7	23.3	7.3	2.6	2.1	1.2	1.3	.1	5.4
4b	64.0	18.7	5.2	2.9	1.9	1.3	.6	.2	5.2
5a	51.6	18.8	4.9	3.5	3.1	2.5	1.6	.8	13.2
5b	48.0	16.7	4.9	1.9	2.1	.7	.5		25.2
6a	39.2	15.4	4.6	4.9	3.6	3.6	1.5	.5	26.7
6b	53.0	18.5	4.5	3.4	3.4	3.4	1.6	.5	11.7
7	52.4	19.7	5.4	3.5	2.4	3.5	1.3	.3	11.5
8	55.2	16.2	6.2	3.6	2.9	4.2	1.7	.6	9.4
9a	52.4	19.3	5.8	4.6	2.8	1.6	1.5	.6	11.4
9b	42.4	14.6	5.6	4.4	3.9	2.7	1.9	1.1	23.4
Non-Met. Total	50.6	18.4	6.1	4.1	3.3	3.2	1.8	.8	11.7
Total	50.7	19.3	6.7	4.3	4.5	4.6	2.2	.8	6.9

TABLE 18

NUMERICAL DISTRIBUTION OF TEACHERS IN EACH ECONOMIC AREA BY YEARS OF TEACHING IN OTHER SCHOOLS

Economic Area	Years of Teaching												
	0	1	2	3	4	5	6	7	8	9	10	11	12	13
A	301	75	60	70	59	40	37	40	28	32	34	24	23	19
B	601	153	129	123	82	87	67	75	65	63	52	40	50	36
C	301	64	87	73	47	59	35	45	30	32	35	22	26	21
D	605	156	137	132	115	98	76	67	72	68	50	54	37	47
E	343	73	99	86	76	66	68	52	53	45	42	26	25	22
F1	1,002	256	276	224	173	207	146	119	114	116	93	85	83	77
F2	425	113	100	90	58	71	65	51	48	33	46	34	30	27
F3	1,463	393	354	346	253	227	195	158	150	129	135	88	86	78
G	239	82	89	74	66	60	45	29	29	22	30	20	20	15
Met. Total	5,280	1,365	1,331	1,218	929	915	734	636	589	540	517	393	380	342
1	397	123	125	90	92	75	66	54	53	44	44	28	22	34
2	304	87	81	71	43	38	43	40	33	31	35	22	19	20
3	187	43	58	48	34	42	38	27	24	25	29	30	21	9
4a	279	63	75	67	57	55	44	39	36	40	37	47	31	32
4b	277	63	72	63	39	51	49	39	40	44	40	33	38	26
5a	369	112	106	79	64	78	55	61	48	46	53	39	55	26
5b	178	42	43	34	32	24	24	26	25	24	24	21	17	14
6a	187	46	43	42	39	33	15	20	21	19	17	16	8	12
6b	283	91	85	89	53	44	48	38	44	24	49	27	34	16
7	495	170	160	151	128	106	100	85	90	70	95	54	63	56
8	550	179	192	113	102	97	71	65	62	58	62	32	58	37
9a	242	68	61	37	53	38	43	33	33	33	27	18	17	25
9b	389	104	113	104	74	65	70	55	50	41	36	38	34	26
Non-Met. Total	4,137	1,191	1,214	988	810	746	666	582	559	499	548	405	417	333
Total	9,417	2,556	2,545	2,206	1,739	1,661	1,400	1,218	1,148	1,039	1,065	798	797	675

TABLE 18 (Continued)

Economic Area	Years of Teaching																	
	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
A	11	25	10	14	14	6	7	6	10	8	7	7	9	4	3	2	1	
B	37	21	25	19	22	17	25	14	14	18	13	8	5	7	5	3	4	
C	20	13	15	8	12	14	6	9	4	2	10	5	3	4	3	2	5	1
D	34	21	24	22	14	21	15	8	10	19	9	10	7	4	4	2	3	1
E	19	28	14	14	10	12	14	8	5	4	3	5	5	2	4	1	2	1
F1	60	78	41	40	39	28	26	24	16	19	14	11	16	14	12	5	5	5
F2	30	34	19	11	19	12	12	19	14	10	8	9	7	4	1	4	1	3
F3	79	61	74	53	47	36	37	14	21	19	13	10	7	6	7	2	7	7
G	20	11	7	9	6	10	5	9	5	6	7	4	5	3	3	1	4	1
Met. Total	310	292	229	190	183	156	147	111	99	105	84	69	64	48	42	22	32	19
1	17	22	11	17	12	6	9	14	12	5	2	3	5	6	3	6		1
2	23	16	9	7	14	12	9	3	8	5	4	5	2	2	1		3	2
3	18	22	13	18	6	9	4	16	5	6	5	2	3	3	2	1	4	1
4a	22	25	25	20	23	11	19	17	8	3	6	9	5	6	6	5	4	1
4b	23	15	14	18	12	10	12	11	6	11	3	4	5	6	5	4	3	2
5a	28	31	21	17	34	17	22	15	16	12	10	11	3	8	6	5	4	3
5b	19	10	5	13	8	8	8	5	3	4	2	3	3	3	3	2		
6a	12	8	6	10	3	7	4	3	1	2	3	5	6			2	1	
6b	24	29	17	19	24	18	15	12	13	14	7	6	6	5	5	4	4	1
7	39	53	54	34	28	32	30	17	19	15	23	16	13	5	9	7	4	3
8	49	38	30	30	12	19	19	16	13	15	8	12	8	5	2	7	1	2
9a	19	25	18	14	14	6	18	9	6	7	10	6	7	4	5	1	1	
9b	29	20	17	29	26	21	12	8	9	9	5	7	4	5	6	2	4	5
Non-met. Total	322	314	240	246	216	176	181	146	119	108	88	89	70	58	53	46	33	21
Total	632	606	469	436	399	332	328	257	218	213	172	158	134	106	95	68	65	40

TABLE 18 (Continued)

Economic Area	Years of Teaching														No Info.	Total
	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	
A	2	1		1			1	2					1			19	1,013
B	5	4	1					1								6	1,897
C				1	1	1				1						68	1,085
D	1	1		1		1									2	79	2,027
E																84	1,311
F1	1	2	1		1	1		1								13	3,444
F2		1	3	2												58	1,472
F3		3			1			1	1							35	4,596
G	1		1	1		1										43	983
Met. Total	10	12	6	6	3	4	1	5	1	1			1		2	405	17,828
1	2	2		2												71	1,475
2				1							1					15	1,009
3	2	1	1	1												56	814
4a	3	1	1			1			1				1			144	1,269
4b	3	3	1		1		1	2					1			40	1,090
5a	1	3	3			1										302	1,764
5b					1						1					210	839
6a	1															221	813
6b			1	1		1										154	1,305
7	1	2	2	1								1				415	2,646
8	3	4	1	2	1	1		1	1							209	2,187
9a	5	2	1				1					2				193	1,102
9b	2	1	2	1		1		1		1						368	1,794
Non-Met. Total	23	19	13	9	3	5	2	4	2	1	2	3	2			2,398	18,107
Total	33	31	19	15	6	9	3	9	3	2	2	3	3		2	2,803	35,935

TABLE 19

PERCENTAGE DISTRIBUTION OF TEACHERS IN EACH ECONOMIC AREA BY YEARS OF TEACHING IN OTHER SCHOOLS

Economic Area	Years of Teaching								No Info.
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-46	
A	55.8	17.5	10.9	6.8	3.7	2.5	.4	.5	1.9
B	57.4	18.8	11.3	5.5	4.4	1.5	.7	.1	.3
C	52.7	18.5	11.4	5.7	2.8	1.6	.6	.4	6.3
D	56.5	18.8	10.8	5.1	3.0	1.4	.3	.2	3.9
E	51.6	21.7	10.2	6.0	2.6	1.3	.2		6.4
F1	56.0	20.4	11.5	6.6	2.9	1.7	.4	.1	.4
F2	53.4	18.2	11.4	6.5	4.3	1.7	.5	.1	3.9
F3	61.1	18.7	10.1	5.9	2.3	.7	.3	.1	.8
G	56.0	18.8	10.7	4.4	3.2	1.6	.7	.2	4.4
Met. Total	56.8	19.1	10.9	5.9	3.1	1.4	.4	.1	2.3
1	56.1	19.8	9.8	4.6	2.9	1.6	.3	.1	4.8
2	58.1	18.3	11.8	5.7	2.9	1.0	.5	.2	1.5
3	45.4	19.2	13.1	8.4	4.4	1.4	1.1	.1	6.9
4a	42.6	16.9	13.3	8.2	4.2	2.4	.8	.2	11.4
4b	47.2	20.5	14.7	6.3	3.9	2.2	1.1	.4	3.7
5a	41.4	16.3	11.4	6.8	4.2	1.9	.8	.1	17.1
5b	39.2	14.7	11.3	5.3	2.6	1.7		.2	25.0
6a	43.9	13.3	8.0	4.2	1.6	1.6	.2		27.2
6b	46.0	15.2	11.5	8.2	4.7	2.0	.4	.2	11.8
7	41.7	17.0	11.6	7.6	3.9	1.9	.5	.1	15.7
8	51.9	16.1	10.9	5.9	3.2	1.6	.5	.3	9.6
9a	41.8	16.4	9.6	7.0	4.5	2.1	.8	.3	17.5
9b	43.7	15.7	9.1	6.3	2.4	1.3	.8	.2	20.5
Non-Met. Total	46.1	16.9	11.2	6.6	3.5	1.7	.6	.2	13.2
Total	51.4	18.0	11.0	6.2	3.3	1.6	.5	.2	7.8

TABLE 20

NUMBER AND PER CENT OF TEACHERS IN EACH ECONOMIC AREA WHO HAD AND HAD NOT TAUGHT THE PREVIOUS YEAR

Economic Area	Taught the Previous Year				No Info.		Total
	Yes		No				
	N	%	N	%	N	%	
A	888	87.7	112	11.0	13	1.3	1,013
B	1,587	83.6	307	16.2	3	.2	1,897
C	883	81.4	139	12.8	63	5.8	1,085
D	1,671	82.4	286	14.1	70	3.5	2,027
E	1,047	79.9	239	18.2	25	1.9	1,311
F1	2,877	83.5	564	16.4	3	.1	3,444
F2	1,180	80.2	278	18.9	14	.9	1,472
F3	3,927	85.5	618	13.4	51	1.1	4,596
G	777	79.0	162	16.5	44	4.5	983
Met. Total	14,837	83.2	2,705	15.2	286	1.6	17,828
1	1,287	87.2	127	8.6	61	4.2	1,475
2	845	83.7	162	16.1	2	.2	1,009
3	643	79.0	108	13.3	63	7.7	814
4a	1,044	82.3	159	12.5	66	5.2	1,269
4b	887	81.4	174	16.0	29	2.6	1,090
5a	1,455	82.5	189	10.7	120	6.8	1,764
5b	535	63.8	96	11.4	208	24.8	839
6a	520	64.0	78	9.6	215	26.4	813
6b	931	71.3	176	13.5	198	15.2	1,305
7	2,020	76.3	344	13.0	282	10.7	2,646
8	1,740	79.6	327	14.9	120	5.5	2,187
9a	791	71.8	140	12.7	171	15.5	1,102
9b	1,215	67.7	230	12.8	349	19.5	1,794
Non-Met. Total	13,913	76.8	2,310	12.8	1,884	10.4	18,107
Total	28,750	80.0	5,015	14.0	2,170	6.0	35,935

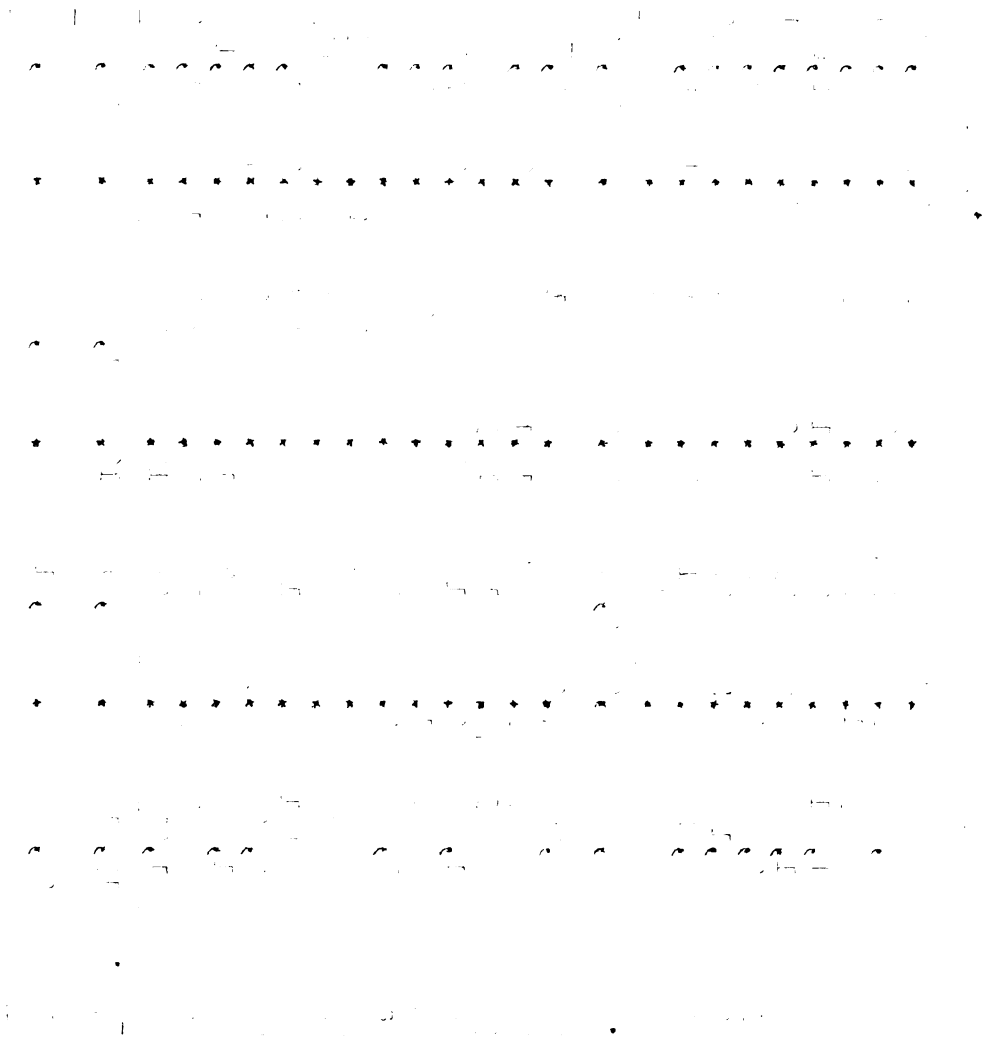


TABLE 21

PER PUPIL EXPENDITURES FOR EDUCATION, PER PUPIL TEACHER SALARIES AND PER CAPITA BANK DEPOSITS FOR EACH ECONOMIC AREA

Economic Area	Per Pupil Expenditures (dols.)	Per Pupil Teacher Salaries (dols.)	Per Capita Bank Deposits (dols.)
A	275.05	129.07	747
B	317.49	143.86	890
C	299.89	131.12	578
D	265.30	127.34	595
E	324.23	133.62	708
F1	263.70	133.24	1032*
F2	271.45	128.40	
F3	346.96	158.88	
G	344.36	146.03	705
1	336.38	131.61	545
2	298.67	120.77	480
3	318.22	125.69	470
4a	305.33	119.59	430
4b	311.63	116.51	384
5a	315.35	132.54	562
5b	291.20	117.34	521
6a	296.37	125.50	517
6b	312.94	126.36	515
7	296.17	124.18	505
8	334.56	135.98	583
9a	314.14	123.58	608
9b	341.15	132.63	556

*Includes Detroit.

TABLE 22

DATA RELATIVE TO RATES OF POPULATION CHANGE, SCHOOL ATTENDANCE, TEACHER RETIREMENT AND RE-ENTRY FOR EACH ECONOMIC AREA

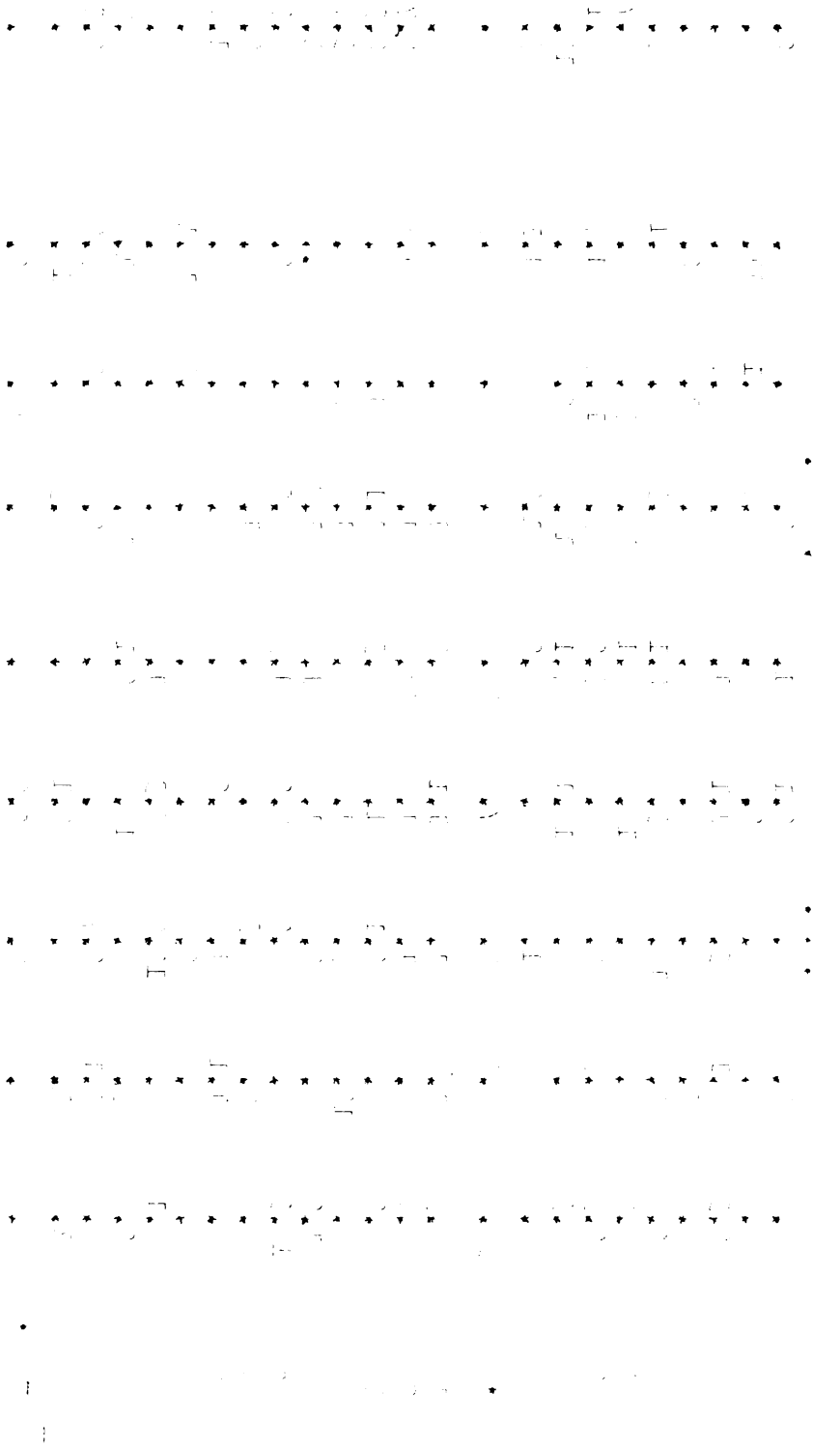
Economic Area	Rank for Rate of Population Change	Rate of School Attendance (% 7-17 Years in School, 1950)	Retirement Rate (Minimum % Eligible 1953-1969)	Rate of Re-entry into Teaching 1952-53
A	13	94.89	23.9	4.9
B	16	94.43	25.2	7.4
C	5	94.39	22.6	7.3
D	11	94.48	25.4	7.4
E	4	96.32	20.5	7.6
F1	2	95.41	20.0	6.7
F2	1	94.08	16.0	9.3
F3	9*	95.30	19.8	5.6
G	6	94.07	27.2	9.5
1	22	94.30	33.6	3.4
2	12	93.88	20.7	6.8
3	18	94.13	20.8	8.3
4a	20	95.56	17.4	6.4
4b	19	94.51	11.5	7.2
5a	15	94.67	17.2	-
5b	21	92.20	13.8	7.4
6a	10	93.71	16.9	6.8
6b	7	94.28	17.8	7.9
7	17	93.86	18.5	7.2
8	3	93.80	17.6	2.7
9a	14	92.93	15.6	7.4
9b	8	94.56	18.8	8.2

*Includes Detroit.

TABLE 23

DISTRIBUTION OF TEACHERS FROM EACH STATE-SUPPORTED INSTITUTION BY ECONOMIC AREA

Economic Area	Institution								State-supported Total
	Central	Ferris	M.S.C.	Normal	Northern	U. of M.	Wayne	Western	
A	8.5	1.5	2.5	2.1	1.3	2.3	.5	.8	2.9
B	2.4	9.5	5.8	2.4	.8	6.7	.1	11.5	5.0
C	2.3	6.1	3.0	1.1	1.6	2.8	.1	6.9	3.0
D	6.7	3.8	6.6	9.9	2.6	7.0	1.8	2.3	5.8
E	2.5	3.4	13.5	3.5	2.1	3.3	.3	3.1	3.9
F1	5.2	4.9	9.0	13.0	6.1	12.7	30.7	4.0	9.7
F2	2.3	5.3	2.6	6.4	3.2	3.8	12.3	1.7	4.1
F3	5.3	6.8	8.5	19.1	7.1	19.5	42.2	5.9	13.0
G	.8		1.0	.3	.2	1.2		11.1	3.0
Met. Total	36.0	41.3	52.5	57.8	25.0	59.3	88.0	47.3	50.4
1	.3	1.5	1.5	1.1	40.2	1.7	.2	.9	4.0
2	.7	5.3	1.3	1.0	21.9	1.4	.8	1.0	2.7
3	5.2	6.4	2.1	1.4	1.3	1.1	1.0	2.0	2.3
4a	9.6	12.5	3.7	1.6	2.0	1.5	1.4	2.9	3.7
4b	11.2	6.4	2.7	1.7	1.9	1.9	.8	.5	3.3
5a	18.3	8.0	4.2	2.2	1.3	3.2	.5	2.5	5.3
5b	4.5	2.7	3.3	3.4	.6	1.5	.8	.5	2.4
6a	.8	1.1	1.8	.2	.2	.8	.2	5.4	1.7
6b	.6	.4	2.4	.8	.8	1.9	.3	11.1	3.4
7	8.1	8.4	13.2	9.3	1.6	6.4	.8	6.9	7.4
8	2.4	3.0	4.0	13.6	2.1	14.0	4.5	1.8	6.2
9a	.5	1.1	2.7	3.8	.3	2.0	.2	3.2	2.3
9b	1.8	1.9	4.6	2.1	.8	3.3	.5	14.0	4.9
Non-Met. Total	64.0	58.7	47.5	42.2	75.0	40.7	12.0	52.7	49.6



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