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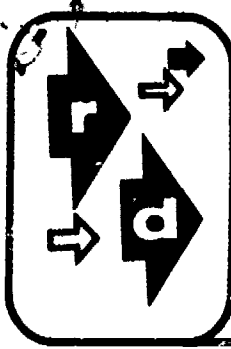
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## ABSTRACT

This research memo reports on the supply and demand of public school teachers in 1974 as reflected in statistical information collected by National Education Association Research. Data were collected from institutions which prepare persons for entry into teaching and from state departments of education. Analysis of the data supports the following conclusions: (a) the supply of graduates completing preparation to enter teaching in 1974 (296,640) is smaller by 5.3 percent than the number reported for 1973; (b) the number of beginning teachers needed to raise the quality of public school programs and staffing in fall 1974 to minimum levels (689,950) is 466,500 more than what is available from the 1974 graduating class of prospective teachers; (c) the number of prospective teachers from the 1974 graduating class seeking teaching positions (223,450) exceeds by 115,050 the number of teaching positions available (108,400); (d) employment in teaching positions in the fall following graduation is reported as 49.8 percent for 1973 graduates prepared to enter teaching; (e) teaching areas in which the supply is least adequate are mathematics, natural and physical sciences, distributive education, industrial arts, and special education; (f) areas in which the supply is most adequate are social studies, physical and health education, art, and foreign languages. (Author/JA)

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Research Memo 1975-3

May 1975

## TEACHER SUPPLY AND DEMAND IN PUBLIC SCHOOLS, 1974

- The supply of graduates completing preparation to enter teaching in 1974 (296,640 graduates) is smaller by 5.3 percent than the number reported for 1973. This is the second consecutive year that the number completing preparation to enter teaching has decreased from the all-time high of 317,254 in 1972.
- The 689,950 beginning teachers needed to raise the quality of public-school programs and staffing in fall 1974 to minimum levels is 466,500 more beginning teachers than are available from the 1974 graduating class of prospective teachers.
- The number of prospective teachers from the 1974 graduating class seeking teaching positions (223,450 persons) exceeds by 115,050 the number of teaching positions actually open to them (108,400 positions).
- Employment in teaching positions in the fall following their graduation is reported for 49.8 percent of the 1973 graduates prepared to enter teaching. Ten years ago employment in teaching positions was reported for 73.7 percent of 1963 graduates completing preparation to enter teaching.
- Teaching assignments in which the supply is least adequate are mathematics, natural and physical sciences, distributive education, industrial arts, and special education. Assignments in which the supply is most adequate are social studies, physical and health education, art, and foreign languages.

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Statistical information about the supply and demand for public-school teachers in 1974 has been collected by NEA Research from institutions which prepare persons for entry into teaching and from state departments of education. The continuing assistance of these institutions, state education agencies, and state education associations has made possible this 27th annual study of this topic. The following sections contain brief summaries of the basic information needed to assess the status of teacher supply and demand in fall 1974.

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### Supply of Beginning Teachers

During the 1973-74 session every institution which prepares persons for meeting the minimum certification requirements for initial entry into public-school teaching reported the number of graduates completing preparation to enter teaching. The institutions supplied both the actual number graduating in 1973 and the number expected to graduate in 1974. Included are all graduates completing minimum requirements for teacher certification with at least a bachelor's degree for the first time.

The total number of graduates completing preparation to enter assignments in elementary, secondary, or special education classrooms is 296,640 in 1974. This is a decrease of 5.3 percent from the 313,141 graduates similarly reported for 1973. It is lower by 6.5 percent than the all-time high of 317,254 graduates completing preparation to enter teaching in 1972.

The total number completing preparation to enter teaching in 1974 (including persons prepared to enter library science positions) represents 29.5 percent of the estimated total number of graduates receiving the bachelor's and first professional degree. Between 1960 and 1972 the numbers of graduates completing preparation to enter teaching (including library science) represented between 33.5 percent and 36.3 percent of the total number of graduates receiving the bachelor's and first professional degree.

The total number completing preparation for entry into elementary-school assignments in 1974 (117,369 graduates) is 7.4 percent lower than the number completing similar preparation in 1973 (126,684). This is the second year that the number completing preparation for entering elementary-school assignments has been lower than the all-time high of 128,613 graduates reported in 1972.

The total number completing preparation to enter teaching in secondary-school assignments in 1974 is 156,408 graduates (down by 5.1 percent from the 164,850 reported for 1973). This is the third year that the numbers completing preparation for entry at the secondary-school level have been lower than the all-time high of 174,759 reported in 1971.

The number completing preparation to enter teaching in special education assignments at either the elementary- or secondary-school level is 22,863 graduates in 1974. This is an increase of 5.8 percent over the 21,607 graduates completing similar preparation in 1973. The number in the 1974 class completing preparation in special education is almost two and one-half times the number completing this type of preparation four years ago

(9,226 graduates were reported in 1970) and is more than five times the number reported eight years ago (4,380 graduates were reported in 1966).

In 1973-74 the percent of teacher education graduates who are men increased to 31.8 percent; this is higher than the percents reported during the period between 1961-62 and 1972-73 but is considerably below the 36.2 to 44.2 percent reported between 1951-52 and 1961-62. The proportion of all public-school teachers who are men increased slightly in 1973-74, reaching 33.8 percent, continuing the trend of increasing by almost 0.3 percentage points each year during the past 10 years. The percent of all teachers who are men was 24.6 percent in 1953-54 and was 31.1 percent in 1963-64.

The states differ in the total number of graduates completing preparation to enter regular teaching assignments and in the percent change over the past year in the number completing preparation to teach. The numbers completing preparation in 1974 ranged from 107 in Alaska to 25,196 in New York. Seven states reported fewer than 1,000 graduates completing preparation to enter teaching and seven states reported 10,000 or more. Three states reported an increase of at least 10 percent in the number of graduates prepared to teach in 1974 over the number in 1973 (Hawaii, Idaho, and Mississippi), and three states reported a decrease of at least 20 percent over this period (Arkansas, Minnesota, and Nevada).

The number of graduates completing preparation to teach in each major assignment classification in public schools is shown in Table 1, columns 2 and 3. The number reported for a given assignment classification may be a minimum estimate because many graduates have completed preparation to enter more than one assignment. The institutions reported each graduate only once (arbitrarily assigning a classification to each graduate having multiple assignment options).

Typically many persons completing preparation to enter public-school teaching do not obtain positions during the subsequent year. It is not possible to derive a precise estimate of the number expected to be actively seeking employment in teaching immediately following their graduation because this is influenced by several factors whose effects are not easily estimated (economic status of teaching jobs compared with other positions open to qualified college graduates, attractiveness of working conditions in teaching positions compared with other jobs open to qualified college graduates, extent that publicity about the job shortage for teachers may reduce the numbers of graduates willing to invest time and resources in applying for a scarce position-vacancy, etc.).

The percent of qualified graduates obtaining teaching positions during a period of general shortages of qualified teachers provides a useful base for estimating the percent of present graduates expected to be seeking teaching positions if working conditions and salaries are reasonably attractive. This is likely to be a conservative estimate because even during the period of general shortages the supply of applicants exceeded the number of openings in some assignment areas (notably in social studies which affects a significant number of graduates prepared to teach), and follow-up information was not available for about 10 percent of the graduates (some of whom may have found teaching positions but did not notify their college placement offices). Also, projections from this base may be higher or lower than the actual percents of qualified graduates actively seeking teaching positions depending upon the current effects of the various factors noted above.

The number of graduates estimated to be seeking employment in teaching if attractive positions are available in fall 1974 is provided in column 5 of Table 1. The application rate for teaching jobs estimated for graduates prepared to teach at the elementary-school level (83.3 percent) is the rate of entry reported for 1958, a year in which entry rates were near their peak and follow-up information was reported for a very high proportion of graduates prepared to enter teaching. The job application rate similarly estimated for graduates prepared to teach in secondary schools (69.2 percent) is the entry rate reported for 1962. The job application rate estimated for graduates prepared to teach in special education assignments is the average of the rates estimated for elementary and secondary levels. The job application rate for the secondary school level particularly may be a very conservative projection because it is based upon the percent of ALL graduates prepared for secondary-school assignments who entered teaching positions following their graduation. Even during the period of general shortages there were wide differences in the adequacy of the supply of applicants for various assignment areas.

#### Supply of Qualified Former Teachers

Some teachers leaving their positions normally may be expected to return to active employment in teaching. In addition to those having leaves of absence, a significant number of former teachers are interested in returning to the classroom following an interruption related to educational, family, health, and/or personal interests.

The number of elementary- and secondary-school teachers in the labor reserve who had com-

pleted at least four years of college was estimated by the U.S. Bureau of the Census to comprise about 304,460 persons in 1960 and 523,140 persons in 1970. The assumption that the same percents of the teaching staff during the preceding 10-year period have entered the labor reserve provides an estimate that this supply has grown to 597,200 persons in fall 1974. (In addition to the number of teachers estimated to be in the labor reserve in 1970 were about 29,200 *unemployed* experienced teachers between the ages of 20 and 64 years.)

The number of persons in this pool of former teachers who may be expected to be seeking active employment is also difficult to estimate. The number of former teachers who re-entered teaching in 1960-61 represented 18.3 percent of the pool of elementary-secondary school teachers in the labor reserve in 1960. Application of this percentage to the 597,200 persons estimated to have been in this pool in 1974 provides an estimate that at least 109,300 experienced former teachers having a minimum of a bachelor's degree were seeking employment in public schools in fall 1974. It is estimated that two-thirds of these are seeking employment at the elementary school level (73,000).

#### The Demand for New Teachers

The demand for new teachers may be viewed from two perspectives: the number of teachers *needed* and the number of teaching *positions which will be filled*. Both types of estimates are valuable in planning for continued improvements in the quality of public schools. These show the manpower implications of long-term goals for school improvement and the extent that qualified manpower is available to support immediate steps to improve the quality of education. The number of teachers *needed* (Quality Criterion estimate of demand) shows the demand for teachers to attain a minimum level of quality without consideration of obstacles to attaining this standard immediately. The number of teaching positions *which will be filled* (Adjusted Trend Criterion estimate of demand) shows the demand for teachers to continue the recent annual trends toward improvement in the quality of school programs and services.

#### Demand for Minimum Quality

Summarized in Table 2 are the estimated numbers of new teachers needed to staff the programs and services required if the quality of public schools were raised to minimum levels immediately. This estimate is based upon several characteristics of quality in public education for which some statistical estimates of current status are

available. The estimate does not necessarily reflect but is consistent with official NEA policy or objectives. The total demand derived from the accumulation of the component estimates should be used in very general terms because (a) the statistical data underlying the estimates are not precise, (b) the estimates are intended to be conservative, and (c) the number of new teachers needed to reduce the extent of misassignment would release for reassignment (to reduce class size, etc.), instead of replace, the number of qualified teachers currently teaching outside the area of their major professional preparation.

The estimated number of teachers needed to attain a minimum level of quality in public education would be much larger if it included the staff size implications of other desirable changes in school programs and services (provision of experiences designed to promote literacy among those who have left the schools without attainment of basic learnings, introduction of programs to secure the continued enrollment of the dropout-prone students currently enrolled in the lower grades and the estimated two million school-age persons not currently enrolled in school, increased provision of specialists to give individualized instruction to children having unique problems in mastering basic learnings and skills, increased attention to the educational needs of children who are unable to fully respond to the regular school program, improvement of the extent and type of inservice growth provisions for teachers, increased provision for releasing some teachers part time to participate in research explorations of improved methods and materials for instruction, etc.). It will be possible to expand the components of the Quality Criterion Estimate of demand to include these and other considerations relating to high quality in public school programs and services after statistical estimates of current and desirable status are available.

The components of the demand for teachers to attain minimum levels of quality in public-school programs and services are described in the following paragraphs.

*Enrollment and Staff Ratio Changes*—The U.S. Office of Education projected that in fall 1974 the number of full-time and part-time teachers decreased by 9,000 at the elementary-school level and increased by 12,000 at the secondary-school level (with a total increase of 3,000 teachers). Compilation of estimates from the states by NEA Research in fall 1974 provides a national estimate that the number of public-school teachers in elementary schools increased by 9,600 and the number of secondary-school teachers increased by 11,800 over the number employed in 1973-74

(making a total increase of 21,450 teachers in fall 1974). These estimates indicate the 1974-75 session is providing employment for 1,161,799 elementary-school and 997,935 secondary-school teachers, a total of 2,159,734 teachers in public schools.

The U.S. Bureau of the Census has estimated that between July 1973 and July 1974 the population decreased by 455,000 at the 6-11 age group and increased by 153,000 at the 12-17 age group (with a net decrease of 302,000 school-age children and youth). The U.S. Bureau of the Census also has estimated that the number of persons age 5 through 17 enrolled in school below the college level decreased from 41,629,000 in fall 1973 to 41,487,000 in fall 1974, a decrease of 0.3 percent.

On the assumption that the ratio of pupils to teachers continued to decrease in fall 1974 it is estimated that the teaching staff increased by 4,600 elementary-school teachers, and by 9,400 secondary-school teachers, making a total increase of 14,000 teaching positions between 1973-74 and 1974-75. This estimate is for greater growth in the number of teachers than would be suggested by the trends in enrollments and it is for smaller growth in the number of teachers than is being estimated by the states. This estimate of staff enlargement is used in the remainder of this summary to indicate the minimum number of new teachers to be employed for positions related to enrollment changes and normal staff ratio improvements in public schools. Because some of the positions included in this estimate will be directed to improving the quality of public-school programs and services, this component of demand may overlap a small part of the demand for new teachers needed to improve specific aspects of educational quality estimated in other components of the quality criterion estimate of teacher demand.

*Teacher Turnover*—The rates of voluntary separations from active employment probably are being reduced as a result of the increasing teacher awareness of the difficulties they may face in securing employment following an interruption. On the other hand, many teachers who normally continue to teach following a move to a new location may not be able to secure employment as readily as in the past. On the basis of studies of teacher turnover by the U.S. Office of Education and sampling data collected by NEA Research it is estimated that 140,540 teaching positions were opened to new teachers in fall 1974 by the separation (for at least one year) of 6.8 percent of the elementary-school teachers and by 6.3 percent of the secondary-school teachers employed in the 1973-74 session.

*Replacement of Teachers Having Substandard Qualifications*—In the absence of valid statistics about the number of teachers currently employed who do not have minimum qualifications for teaching it is assumed that the minimum educational requirement for qualified teachers is completion of the bachelor's degree. Special circumstances supporting the continued employment of many individual teachers lacking the bachelor's degree reduce the validity of this estimate of the number which should be replaced. Also, for many of these teachers who lack only one or two years of college their replacement may be on a short-term basis while they return to college to complete their degree.

Data from a sample survey of public-school teachers provide an estimate that 1.5 percent of all elementary-school teachers and 0.6 percent of secondary-school teachers in 1973-74 lacked the bachelor's degree. It is assumed that about 20 percent of those lacking the degree will have resigned or completed the degree requirements during the 1973-74 session, making an estimated total of 18,550 teachers lacking the bachelor's degree who should be replaced in fall 1974 (for at least a short term) by qualified teachers.

*Reduction of Overcrowded Classes*—A national survey of a sample of public-school teachers by NEA Research in 1973-74 provides an estimate of the distribution of teachers by their class size and total pupil load. These percentage distributions were applied to the total number of teachers employed in 1973-74 to project an estimate of the number of teachers who may have been assigned extremely large classes.

On the basis of these distributions it is estimated that 336,350 additional teachers are needed in fall 1974 to reduce maximum class size to 24 pupils at the elementary-school level and maximum teacher load to 124 pupils at the secondary-school level. The number of assignments in which it may be acceptable to have larger numbers of students than indicated by this standard probably is more than offset by the number of assignments in which it is extremely desirable that the class be far smaller than this maximum size.

Progress toward achieving the staff requirements of this component of demand probably would be the most productive approach to improving the quality of public education. Problems most frequently reported by teachers are directly related to oversize classes. Also, increasing research evidence indicates that for many instructional objectives and assignments the size of the class makes a significant difference in quality and effectiveness of instruction.

*Larger Numbers Enrolled in Special Education*—At least 203,000 new teachers are needed to

provide special education for all school-age children and youth who require it. This estimate does not include the 58,000 additional teachers needed to extend special education services to preschool children.

Special education includes the services required for "all children with physical, mental, or emotional impairments that are severe enough so that these children need special educational services to achieve an educational level consistent with their basic abilities." The following summary of information from the U.S. Office of Education, Bureau of Education for the Handicapped, shows the extent of unmet need among children and youth requiring special education services:

Type of handicap	Handicapped children under 19 years of age, 1974-75	
	Number unserved	Percent unserved
Speech impaired . . . . .	443,000	19%
Mentally retarded . . . . .	257,000	17
Learning disabilities . . . . .	1,731,000	88
Emotionally disturbed . . . . .	1,080,000	82
Crippled and other health impaired . . . . .	93,000	28
Deaf . . . . .	14,000	29
Hard of hearing . . . . .	268,000	82
Visually handicapped . . . . .	27,000	41
Deaf-blind and other multi-handicapped . . . . .	27,000	67

*Larger Numbers Enrolled in Kindergarten and Nursery School*—Minimally, 15,000 new teachers are needed to provide kindergarten for the same proportion of five- and six-year-old children as the proportion of seven-year-olds now enrolled in school. This estimate does not include the number of new teachers needed to replace present kindergarten teachers having substandard qualifications, to replace present kindergarten teachers who interrupt or terminate their careers, or to provide improvement of the pupil-teacher ratio at this level of instruction. On the basis of U.S. Bureau of the Census data more than 330,000 five- and six-year-old children in fall 1974 are estimated to be deprived of school experience prior to enrollment in the first grade.

*Reduction in the Number of Teachers Who Are Misassigned*—At least 59,900 new teachers are needed to reduce the impact of misassignment of teachers in elementary and secondary schools. This estimate is based on the assumption that the number of teachers teaching full time in an assignment which is different from their major field of pre-

paration has decreased by 15 percent from the number estimated for 1972-73 and that new teachers are needed to allow the reassignment of 90 percent of misassigned teachers. With the improved adequacy of the supply of teachers this problem should be steadily decreasing. However, the estimate above is conservative because it does not include the number of new teachers needed to reassign the more than 100,000 teachers who are teaching at least half of their time in assignments outside their major field of preparation.

**Reinstatement of Financially Induced Program Cutbacks and Increased Provision of at Least Minimally Comprehensive School Programs**—At least 12,000 new teachers are needed to enlarge offerings in elementary and secondary schools. In some school systems these offerings have been severely curtailed as a result of financial cutbacks, and some school systems have not offered instruction in several subjects widely accepted as basic to a comprehensive program of public education. At least 1,000 teachers are needed to enlarge offerings at the elementary-school level to contribute to improvement of the quality of education in the 4,000 school system incidences of reporting the absence of elementary-school instruction in art, music, health, and/or physical education in 1973-74. At least 11,000 new teachers are needed at the secondary-school level to enlarge to the scope of school offerings in the 11,000 school system incidences reporting the absence of secondary-school offerings in art, music, health, physical education, home economics, industrial arts, driver education, and one or more work-study programs.

#### Actual Demand

The number of positions *which will be filled* by new teachers in fall 1974 is the sum of the positions created by enrollment-staff ratio trends and the positions opened by the separation of teachers employed last year; these are the first two components of the Quality Criterion Estimate summarized above. These two components provide an estimate that employment in teaching is virtually assured for 154,450 new teachers in fall 1974 (82,950 in elementary schools, 71,500 in secondary schools). These numbers would be increased if progress were expedited in the trends toward improved school staffing.

#### Demand for Beginning and for Re-entering Teachers

The preceding estimates have been directed to the demand for NEW teachers. A new teacher is a person entering or re-entering active status who was not employed as a full-time teacher during the

preceding school year. A beginning teacher is a person entering active employment as a full-time teacher for the first time. Therefore, the demand for NEW teachers is the sum of the demand for BEGINNING and the demand for RE-ENTERING teachers.

The "mix" of beginning and experienced re-entering teachers employed by local school systems may be influenced by factors such as the adequacy of the supply of beginning teachers, the extent of financial constraints which may make it necessary for the school system to choose the least expensive of the qualified applicants, characteristics of teachers continuing their employment, etc. As a result the demand for beginning versus re-entering teachers may not be estimated with a high degree of accuracy.

On the basis of estimates from studies of teacher turnover and characteristics of employed teachers it is projected that the number of positions which will be filled by unemployed experienced teachers in fall 1974 will be equal to 2.2 percent of the total number of elementary-school teachers and 2.1 percent of the total number of secondary-school teachers in 1973-74. These rates are lower than those used in previous studies in this series.

Application of these projected rates of re-entry to the total number of teachers in 1973-74 provides an estimate that 25,350 former elementary-school teachers and 20,700 former secondary-school teachers will re-enter active employment as teachers in fall 1974 following an interruption of at least one year.

#### Supply Compared with Demand for Teachers

Estimates in the preceding sections are summarized in Table 3 which shows that the supply of new teachers exceeds the number of positions open to them by 178,300 but is smaller by 466,500 than the number of positions which would need to be filled to raise the quality of school programs and services to minimum levels in fall 1974. The number of 1974 graduates estimated to be seeking positions is about twice (206.1 percent) the number of positions estimated to be open to them and is about one-third (32.4 percent) of the number of positions which would be open to them if the quality of school programs and services were raised to minimum levels in fall 1974.

Support for a conclusion that the supply is larger than the number of job openings for beginning teachers is given by information about the employment status of 1973 graduates completing preparation to enter teaching (Table 1, columns

9-12). Among those for whom follow-up information was reported 49.8 percent secured teaching positions (55.0 percent of those prepared for elementary, 44.6 percent for secondary, and 60.0 percent of those prepared for special education assignments). Institutions were asked to report the employment status on November 1, 1973, of all graduates which the institution had reported as having completing preparation to enter teaching in 1973. Reports were received from some institutions in every state except California, Maine, and Tennessee. Information was reported for less than half of the graduates completing preparation in the District of Columbia, Kentucky, and New Hampshire. Overall, follow-up information was reported for 77.8 percent of the 1973 graduates prepared to enter teaching.

*Supply and Demand by Assignment*—Estimates of the supply and the demand for beginning teachers by subject assignment are listed in Table 1, columns 5 and 6. The supply for a given assignment is estimated to be 83.3 percent of the graduates prepared for assignments at the elementary-school level, 69.2 percent of graduates prepared for assignments at the secondary-school level, and 76.2 percent of graduates prepared for assignments in special education. The demand for each assignment is estimated by apportioning the total demand for the level in which the assignment is classified on the basis of the percentage distribution of the number of beginning teachers among these assignments reported by 20 states last year.

The estimated supply of prospective teachers from the 1974 class to fill jobs open to beginning teachers in fall 1974 exceeds the demand in all assignment areas except trade-industrial-vocational-technical, elementary-school, music, and elementary-school physical and health education. Many of the graduates reported to have completed preparation to teach art, music, foreign language, or health and physical education at the secondary-school level probably are qualified to teach the subject at either the secondary- or elementary-school level. Also, information about the demand for new teachers in elementary-school assignments may not

be as accurate as data in other assignment areas as a result of differences among the states in types of school organization and record-keeping for elementary-school teachers. Therefore, the supply-demand condition of these elementary-school assignments may be evaluated most accurately through a review of the combined elementary- and secondary-school data.

The estimate of an undersupply of graduates prepared to enter positions in trade-industrial-vocational-technical positions in secondary schools is of questionable accuracy because (a) teachers entering these assignments may not normally come from the current graduating class (work-experience in the specific occupation or technology also may be required for these teachers), (b) the wide variety of specific types of occupations involved in this category makes it difficult to derive data of sufficient precision to be used to identify programs of teacher preparation which should be enlarged, and (c) a relatively small number of teachers are involved in this assignment area (the open positions may be filled by a small proportion of those graduates prepared for more than one assignment who have been listed as completing preparation for other assignments).

Among the assignment areas in which the supply-demand estimates are reasonably accurate the assignments in which the supply is least adequate include mathematics, natural and physical sciences, and distributive education. The relatively high proportion of graduates prepared to teach mathematics who entered teaching positions in 1973 supports a conclusion that mathematics is in shorter supply than other subjects. Relatively high proportions of graduates prepared to teach industrial arts, special education, and music secured employment in teaching positions in 1973 which may indicate that these subjects also may be in relatively shortest supply.

Subjects or assignments in which the supply most widely exceeds actual demand include social studies, men's physical and health education, art, foreign languages, and women's physical and health education.

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TABLE 1 - STATISTICS ABOUT THE SUPPLY OF AND DEMAND FOR BEGINNING TEACHERS IN PUBLIC SCHOOLS, 1974

Assignment area	Number completing preparation to teach				Estimated supply, 1974	Estimated demand, 1974	Beginning teachers			Status November 1, 1973, of 1973 graduates prepared to teach		
	1974		1973				Supply minus demand	Supply as percent of demand	Percent employed		In other gainful employment	Percent seeking teaching position
	2	3	4	5					6	7		
<b>ELEMENTARY</b>												
Regular instruction	111,502	120,917	-7.8	92,900	47,406	45,494	196.0	54.9	6.8	10.4		
Art	1,761	1,688	+4.3	1,467	1,267	200	115.8	47.4	8.7	12.1		
Foreign language	285	316	-9.8	237	230	7	103.0	67.6	2.9	4.0		
Music	1,550	1,540	+0.6	1,291	1,843	-552	70.0	69.0	6.2	2.8		
Phys. & health education	2,271	2,223	+2.2	1,892	2,016	-124	93.8	53.6	5.3	6.5		
Special education	11,492	10,804	+5.8	8,713	4,838	3,875	180.1	60.0	4.0	5.7		
Total Elementary	128,801	137,488	-6.3	106,500	57,600	48,900	184.9	55.0	6.8	10.3		
<b>SECONDARY</b>												
Agriculture	1,753	1,829	-4.2	1,213	711	502	170.6	51.4	16.3	0.7		
Art	8,986	8,970	+0.2	6,218	1,575	4,643	394.8	42.7	11.2	11.7		
Business education	8,753	9,514	-8.0	6,057	2,692	3,365	225.0	41.9	21.2	6.4		
Distributive education	854	856	-0.2	591	356	235	166.0	51.8	16.6	6.7		
English language arts (total)	(25,572)	(28,671)	(-10.8)	17,697	8,534	(9,163)	(207.4)	(43.1)	10.7	11.0		
English	20,546	23,598	-12.9	14,219	8,022	6,197	177.3	44.7	10.3	11.1		
Journalism	680	600	+13.3	471	85	386	554.1	39.2	12.2	9.2		
Speech & dramatic arts	4,346	4,473	-2.8	3,007	427	2,580	704.2	34.9	12.8	10.6		
Foreign languages (total)	(8,452)	(8,932)	(-5.4)	5,849	1,778	(4,071)	(329.0)	(39.8)	10.8	12.9		
French	3,284	3,538	-7.2	2,273	530	1,743	428.9	...	...	...		
German	928	995	-6.7	642	293	349	219.1	...	...	...		
Latin	147	177	-16.9	102	75	27	136.0	...	...	...		
Russian	82	106	-22.6	57	11	46	518.2	...	...	...		
Spanish	3,669	3,844	-4.6	2,539	841	1,698	301.9	...	...	...		
Other foreign language	342	272	+25.7	236	28	208	842.9	...	...	...		
Home economics	7,628	8,156	-6.5	5,279	2,692	2,587	196.1	47.6	13.7	8.2		
Industrial arts	5,847	5,809	+0.7	4,046	2,235	1,811	181.0	60.4	13.2	3.5		
Junior high school (general)	569	806	-29.4	...	...	...	...	57.2	7.5	4.3		
Mathematics	10,755	11,826	-9.1	7,443	5,283	2,160	140.9	58.3	10.0	6.1		
Music	9,106	8,319	+9.5	6,301	2,235	4,066	281.9	56.7	8.3	6.1		
Phys. & health education (total)	(24,952)	(25,016)	(-0.3)	17,269	4,674	(12,595)	(369.5)	(44.0)	12.4	11.7		
Phys. & health education - boys	14,472	14,484	+0.1	10,016	2,337	7,679	428.6	41.9	13.9	10.9		
Phys. & health education - girls	10,480	10,532	-0.5	7,253	2,337	4,916	310.4	46.8	10.5	12.8		
Nat. & phys. sciences (total)	(10,633)	(11,092)	(-4.1)	7,358	4,572	(2,786)	(160.9)	(53.0)	9.8	5.9		
Nat. & phys. sciences not specified	1,976	2,084	-5.2	...	...	...	...	54.5	9.8	6.8		
General science	1,293	1,367	-5.4	...	...	...	...	56.9	8.2	4.5		
Biology	5,603	5,673	-1.2	...	...	...	...	52.4	10.0	6.6		
Chemistry	1,123	1,260	-10.9	...	...	...	...	51.2	10.6	3.4		
Physics	638	708	-9.9	...	...	...	...	49.7	10.1	4.7		
Social sciences (total)	(29,651)	(32,136)	(-7.7)	20,519	5,182	(15,337)	(369.0)	(32.5)	14.4	12.7		
Subject not specified	13,708	15,482	-11.5	...	...	...	...	...	...	...		
Social studies (hist.-geog. etc.)	9,986	10,507	-5.0	...	...	...	...	...	...	...		
Economics, sociology, psychology	2,167	2,402	-9.8	...	...	...	...	...	...	...		
Other social studies	1,137	1,282	-11.3	787	2,032	-1,245	38.7	47.5	18.9	5.3		
Trade, industrial, vocational, tech.	1,760	1,636	+7.6	1,473	1,473	139	109.4	40.0	12.3	3.2		
Other secondary subjects	11,431	10,803	+5.8	8,711	4,776	3,935	182.4	60.0	4.0	5.7		
Special education	167,839	175,653	-4.4	116,950	50,800	66,150	230.2	44.6	12.5	9.6		
Total Secondary	296,640	313,141	-5.3	223,450	108,400	115,050	206.1	49.8	9.7	9.6		

**TABLE 2.—DEMAND FOR NEW TEACHERS BASED ON THE QUALITY CRITERION, 1974**

Source of demand	Estimated demand for new teachers		
	Elementary	Secondary	Total
1	2	3	4
Enrollment change and trends toward improved staffing . . . . .	4,600	9,400	14,000
Teacher turnover . . . . .	78,350	62,100	140,450
Replacement of teachers having sub- standard qualifications . . . . .	13,800	4,750	18,550
Reduction in number of overcrowded classes . . . . .	175,900	160,450	336,350
Enlarged numbers enrolled in special education . . . . .	101,500	101,500	203,000
Enlarged numbers enrolled in kinder- garten and nursery school . . . . .	15,000		15,000
Reduction in number of teachers who are misassigned . . . . .	35,200	24,700	59,900
Reinstatement of financially induced program cutbacks, and increased provision of at least minimally comprehensive school programs . . .	1,000	11,000	12,000
<b>Total . . . . .</b>	<b>425,350</b>	<b>373,900</b>	<b>799,250</b>

TABLE 3.—SUMMARY OF ESTIMATES OF THE SUPPLY AND DEMAND FOR PUBLIC-SCHOOL TEACHERS, FALL 1974

Level and category of personnel	Demand to achieve minimum quality (Quality Criterion Estimate)				Actual demand (Adjusted Trend Criterion Estimate)			
	1	2	3	4	5	6	7	8
	Supply	Demand	Supply minus de- mand	Supply as percent of demand	Demand	Supply minus de- mand	Supply as percent of demand	
<b>Elementary schools</b>								
Beginning teachers .....	106,500	352,350	-245,850	30.2	57,600	48,900	184.9	
Re-entering teachers .....	73,000	73,000	0	100.0	25,350	47,650	288.0	
New teachers (total) .....	179,500	425,350	-245,850	42.2	82,950	96,550	216.4	
<b>Secondary schools</b>								
Beginning teachers .....	116,950	337,600	-220,650	34.6	50,800	66,150	230.2	
Re-entering teachers .....	36,300	36,300	0	100.0	20,700	15,600	175.4	
New teachers (total) .....	153,250	373,900	-220,650	41.0	71,500	81,750	214.3	
<b>Total</b>								
Beginning teachers .....	223,450	689,950	-466,500	32.4	108,400	115,050	206.1	
Re-entering teachers .....	109,300	109,300	0	100.0	46,050	63,250	237.4	
New teachers (total) .....	332,750	799,250	-466,500	41.6	154,450	178,300	215.4	