

Iowa State University College of Education
and the
Department of Public Instruction
TEACHER SUPPLY AND DEMAND STUDY
1971-1982

May 10, 1983

Dear Superintendent:

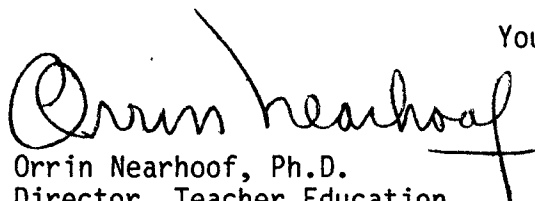
Enclosed is an "Updated Summary Report of the Teacher Supply and Demand Study for Iowa Public Schools 1971-1982." We thought you would be interested in Tables 2, 3, and 4 which compare the number of public school fall vacancies for the last eleven years.

Trends in the primary source of supply of teachers may be obtained by comparing the number of graduates reported in Table 5. Iowa Public School K-12 Enrollments and Projections are presented in Table 1.

This study has been a cooperative project carried out jointly by the State Department of Public Instruction and the College of Education at Iowa State University.

We especially wish to thank you for supplying the information requested on the questionnaires. The success of our surveys has been due to the excellent response and cooperation we have received from you and your staff. Your assistance has been deeply appreciated.

Yours sincerely,



Orrin Nearhoof, Ph.D.
Director, Teacher Education
and Certification
Department of Public Instruction
Grimes State Office Building
Des Moines, IA 50319



Trevor G. Howe, Ph.D.
Director, Education Placement
College of Education
E106 Quadrangle
Iowa State University
Ames, IA 50011

ON/TH/1a
enclosure

3-891

UPDATED SUMMARY REPORT of the TEACHER SUPPLY and DEMAND
for IOWA PUBLIC SCHOOLS

Dr. Trevor G. Howe

INTRODUCTION

Iowa is faced with many problems in education as a result of the current recession. The first indications appeared in March of 1980, when graduating seniors of teacher education programs in the state began to experience difficulty in finding employment. It has steadily worsened each year since then.

Layoffs in business and industry have raised unemployment rates to over 10% nationally. As unemployment rises in the business and industrial sector, the job market tightens in education as well. When this occurs, employed teachers are reluctant to make job changes. This eliminates the chain reaction that usually results in two or more vacancies from one person moving. The net result is fewer vacancies and more applicants for advertised positions.

The demand for teachers has been effected by several factors such as the state of the economy, declining school enrollments, staff reductions, tight budgets, reduced state aid and cutbacks in federal grants.

Declining enrollments have been most evident at the elementary level but they are now beginning to be felt in the junior and senior high schools. However, commencing in 1974, the birth rates have begun to increase slightly and this has resulted in higher kindergarten enrollments the last two years.

The first teacher vacancy study was designed in the spring of 1971 as a cooperative survey planned and carried out jointly by the College of Education

at Iowa State University and the State Department of Public Instruction. Every year since then two studies have been conducted, one in the spring and a second in the fall.

Purpose

The purpose of these studies was to investigate the problems and report the teacher supply and demand in Iowa's public schools.

METHODOLOGY

Teacher Demand

The target population consisted of Iowa's 440 public school districts who cooperated by supplying information to be used as baseline data. Local school districts were designated as the sampling unit. This report contains summary data from the fall surveys conducted over the past eleven years.

Teacher Supply

There are twenty-seven institutions in Iowa that have approved teacher education programs. These four-year colleges or universities recommend graduates for certification to the Department of Public Instruction. The recent bachelor degree graduate who has completed the preparation for a teaching certificate is the primary source of new teachers in Iowa, accounting for approximately 82% of the new hires.

A recent survey of the twenty-seven institutions was conducted to update information on the supply of beginning teachers (i.e., the number of students completing preparation for a bachelor's degree). All institutions cooperated by returning their completed questionnaires.

FINDINGS

Enrollments

Trends in Iowa public school enrollments in grades K-12 as well as projections may be seen by examination of Table 1. The actual public school enrollments are presented for the 1972-1973 school year through 1981-1982. Total enrollments have declined by 130,116 students in ten years. The projected enrollments are expected to drop an additional 31,444 students over the next five years. Obviously the implication is a reduction in the number of teaching positions at both the elementary and secondary levels over the next several years. However, current data indicate that teacher supply is decreasing more rapidly than student enrollment.

Teacher Demand

The fall vacancy studies were designed primarily to assess the demand for teachers, administrators and other school personnel by tabulating the new hires for the current year. Iowa's 440 school districts comprised the total sample surveyed.

Examination of Table 2 provides a summary of the estimated number of public school vacancies in Iowa in the fall of 1982. The school districts were stratified into seven categories based upon their total enrollments in grades K-12. Currently there are 29,074 elementary and secondary teachers employed in the 440 school districts in Iowa. Staff reductions accounted for 817 fewer positions in 1980-81 and 665 positions in 1981-82. The smaller schools experienced the greatest teacher turnover in proportion to the number of teachers employed when compared to the larger school districts. For example, there were 181 school districts with less than 500 students enrolled in

grades K-12. They employ 15.2% of the teachers, but reported 22.6% of the elementary vacancies and 33.7% of the secondary vacancies.

Teaching vacancies by subject area and level are reported for the past eleven years in Tables 3 and 4. Comparisons may be made by using the summary of new personnel hired to fill the public school teaching vacancies in Iowa for fall of 1972 through the fall of 1982. The full impact of the current recession was reflected by the reduction in hirings reported for the fall of 1981. Only 383 elementary vacancies were reported as compared to 628 a year earlier. The same drastic drop in vacancies was felt at the secondary level with 1,616 vacancies reported in the fall of 1980 and 955 vacancies in the fall of 1981.

As the vacancies for the last two years were compared, a slight increase was found in the hirings; in the fall of 1982 there were 474 elementary vacancies compared with 382 in the fall of 1981. This represents an increase of 92 positions. Comparing the same years using the data for secondary teachers, there were 1,007 vacancies in the fall of 1982 and 955 in 1981 resulting in a difference of 52 additional positions.

Subject areas with increased demand for teachers in 1982 were English/language arts, foreign language, mathematics, science and social studies. There were 144 additional elementary and secondary teacher vacancies in the fall of 1982 over 1981.

The number of administrative and service vacancies are reported in Table 4. Comparisons may be made for the years 1972-82.

Teacher Supply

A summary of the number of graduates from the twenty-seven teacher education institutions in Iowa completing preparation for a teaching certificate with a bachelor's degree by subject area for the years 1970-82 is presented in Table 5. In 1970, there were 2,100 elementary teacher education graduates certificated to teach as compared with 1,045 seniors who graduated in 1982, a drop of 50%. Similarly, there were 3,633 secondary teacher education graduates in 1970. This total has dropped each subsequent year to 1,271 graduates by 1982, a 65% decrease. The total supply of new elementary and secondary teachers in Iowa, as measured by the number of new teachers prepared, has declined 60% over the past 12 years.

SUMMARY

Critical factors of the study can best be summarized as follows:

(1) Factors such as the present recession, high national unemployment, the state of the economy, inflation, tight budgets and reduced federal aid all have contributed to a reduced demand for teachers.

(2) Declining school enrollments with accompanying staff reduction have had a devastating effect on many school districts.

(3) The supply of secondary teachers as measured by the number of bachelor degree graduates who have been certificated has been declining more rapidly than the demand.

(4) There are critical shortages of teachers in the following areas: industrial education, mathematics, science and special education. In the science area, there are shortages in general science, earth science, physics and chemistry. In the 12 year period from 1970 through 1982, there was a 68%

decline in the number of secondary school science teachers being trained and an 80% drop in mathematics teachers. This indicates the severity of the current teacher shortages. There were 269 science teachers prepared in 1970 and only 87 graduates in 1982. Science teacher vacancies have outnumbered graduates six of the last nine years.

During the same period, only 234 people were certified to teach mathematics in junior and senior high schools in 1970. By 1982 that number had dropped to 46. Mathematics teacher vacancies in Iowa schools have outnumbered mathematics-certified Iowa college graduates every year since 1973, five of those years by more than 100.

(5) Shortages of English/language arts teachers are occurring as reduced numbers of current graduates are available for employment.

(6) Long range consequences of continued critical shortages of teachers on the total educational system can be extremely serious. Many math and science courses are being taught by less qualified teachers with minimal preparation in these subjects. Many schools will be forced to drop some mathematics and science offerings because of staff shortages.

In conclusion, the prospects for an easy or immediate solution to the problem of recruiting qualified personnel for the subject areas with teacher shortages seems unlikely and will probably worsen in the next few years.

TABLE 1

Department of Public Instruction
Grimes State Office Building
Des Moines, Iowa 50319

Actual Enrollments for 1972-73 Thru 1981-82
Estimates for 1982-83 Thru 1986-87

Public School Enrollments - State														Ungraded Special Educ.*	GRAND TOTAL	
Year	K	1	2	3	4	5	6	7	8	9	10	11	12	TOTAL		
72-73	46220	44075	45339	48250	49903	51192	51736	52538	51770	49822	49921	48250	45899	634915	10474	645389
73-74	44592	42879	42156	44705	47744	49049	50572	52541	51854	52342	48658	47722	45249	620063	10632	630695
74-75	44635	41379	41123	41496	44364	46977	48893	51290	52190	52481	51140	46138	44326	606432	10649	617081
75-76	46235	42108	40218	40702	41570	44020	47136	49708	51104	53128	51699	49162	43616	600406	10409	610815
76-77	45118	43397	40814	39617	40494	41374	44546	47747	49653	51800	52012	49199	46126	591897	11699	603596
77-78	41139	42629	42032	40201	39328	40119	41467	44669	47665	50260	50808	49809	46311	576437	10676	587113
78-79	37954	39188	40699	41291	39837	38835	39744	41677	44332	48442	49488	48461	46701	556649	10894	567543
79-80	37759	35994	37442	40172	40860	39388	38681	40522	41475	45198	47134	46927	45635	537187	10012	547199
80-81	39202	35747	34492	36910	39867	40318	39068	39372	40263	42570	44179	45571	44726	522285	10398	532683
81-82	37551	37021	34154	33809	36272	39282	39707	39640	38597	41083	41659	42572	43452	504799	10157	514956
ESTIMATED ENROLLMENT																
82-83	39623	35358	35577	33643	33534	35842	39132	40233	39355	39238	40226	39841	40100	491702	9893	501595
83-84	40421	37309	33980	35046	33370	33136	35705	39650	39944	40009	38420	38470	37527	482987	9718	492705
84-85	41649	38061	35855	33472	34761	32975	33010	36178	39366	40608	39174	36743	36237	478089	9619	487708
85-86	43160	39217	36577	35319	33200	34349	32849	33448	35919	40020	39761	37465	34610	475894	9575	485469
86-87	41433	40640	37688	36030	35032	32807	34218	33284	33207	36515	39185	38026	35290	473355	9524	482879

All enrollments are as of the second Friday in September. The public school enrollment projections are based upon the trends observed in the number of students moving from grade to grade. This trend calculated as an average cohort survival ratio was used to estimate 1st through 12th grade enrollments. Kindergarten enrollments were estimated from actual births five years prior.

*Ungraded special education refers to those students who are not associated with a given grade level. This is not a count of the number of special education students in the state.

TABLE 2

SURVEY SUMMARY OF NEW PERSONNEL HIRED TO FILL THE PUBLIC SCHOOL VACANCIES IN IOWA
BY FALL OF 1982 STRATIFIED BY SCHOOL SIZE, DISTRICTS, AND LEVELS

Stratums By School Enrollment K-12	Districts	Total ^a Number Full-Time Equivalent Teachers Employed 1982-1983		Number of Personnel Hired To Fill Vacancies by Fall 1982									
		No.	%	Elementary		Secondary		Administrative		Service ^b		Total	
		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
200-499	181	4,421	15.2	107	22.6	339	33.7	48	46.6	16	19.8	477	29.6
500-749	106	4,208	14.5	80	16.9	168	16.7	22	21.4	8	9.9	269	16.7
750-999	48	2,501	8.6	57	12.0	82	8.1	9	8.7	9	11.1	158	9.8
1,000-1,499	37	2,784	9.6	43	9.1	106	10.5	7	6.8	9	11.1	163	10.1
1,500-1,999	28	2,755	9.5	39	8.2	69	6.8	6	5.8	4	4.9	118	7.3
2,000-2,999	16	2,146	7.4	34	7.2	62	6.2	2	2.0	2	2.5	94	5.9
3,000 & over	24	10,259	35.2	114	24.0	181	18.0	9	8.7	33	40.7	331	20.6
TOTAL	440	29,074	100.0	474	100.0	1,007	100.0	103	100.0	81	100.0	1,610	100.0

^aSource, Department of Public Instruction, school year 1982-1983

^bService area does not include special education and learning disabilities in the total (see Table 3).

TABLE 3

SUMMARY OF NEW PERSONNEL HIRED TO FILL PUBLIC SCHOOL TEACHING VACANCIES IN IOWA
 COMPARING FALL 1972 THROUGH FALL 1982 BY SUBJECT AREA AND LEVEL

Subject Area or Level	Number of Vacancies										
	Fall 1972	Fall 1973	Fall 1974	Fall 1975	Fall 1976	Fall 1977	Fall 1978	Fall 1979	Fall 1980	Fall 1981	Fall 1982
A. ELEMENTARY											
1. Classroom Teachers	1,371	1,562	1,237	1,135	1,093	890	834	754	628	382	474
B. SECONDARY											
1. Agriculture	59	73	65	61	79	61	66	65	64	52	48
2. Art	90	137	138	148	159	144	94	93	74	44	31
3. Business Education	111	143	110	96	125	89	135	127	91	62	47
4. Distributive Education	6	16	10	5	3	3	3	4	1	2	2
5. Driver Education	19	18	31	16	13	12	4	3	5	3	7
6. English Language Arts	395	412	404	351	436	341	443	397	335	162	187
7. Foreign Languages	112	121	101	92	63	73	30	30	24	13	39
8. Home Economics	130	147	140	141	172	120	109	101	76	55	45
9. Industrial Arts	117	148	132	129	145	115	122	94	100	48	49
10. Mathematics	196	214	217	189	221	185	189	165	177	102	110
11. Music	289	276	272	291	302	294	205	230	245	181	149
12. Health and Physical Ed.	188	157	195	178	222	196	169	169	148	97	86
13. Science	172	261	248	176	217	176	156	159	110	67	97
14. Social Studies	238	290	241	211	218	213	166	182	150	57	100
15. Other	44	35	109	47	23	25	15	11	16	10	10
Secondary Subtotal	2,166	2,448	2,413	2,131	2,398	2,047	1,906	1,830	1,616	955	1,007
TOTAL	3,537	4,010	3,650	3,266	3,491	2,937	2,740	2,584	2,244	1,337	1,481

TABLE 4

SUMMARY OF NEW PERSONNEL HIRED TO FILL PUBLIC SCHOOL ADMINISTRATIVE & SERVICE VACANCIES IN IOWA
COMPARING FALL 1972 THROUGH FALL 1982 BY SUBJECT AREA AND LEVEL

Title	Number of Vacancies										
	Fall 1972	Fall 1973	Fall 1974	Fall 1975	Fall 1976	Fall 1977	Fall 1978	Fall 1979	Fall 1980	Fall 1981	Fall 1982
C. ADMINISTRATIVE											
1. Elementary Principal	44	65	68	43	49	34	43	33	42	21	20
2. Secondary Principal	59	100	86	94	76	82	69	66	48	41	43
3. Superintendent	26	48	40	44	30	37	64	44	41	46	37
4. Administrative Assistant	15	35	11	32	34	23	7	17	3	1	3
Administrative Subtotal	144	248	205	213	189	176	183	160	134	109	103
D. SERVICE											
1. Elementary Guidance	6	9	13	10	18	13	27	15	14	7	9
2. Secondary Guidance	62	101	87	78	84	62	66	68	47	39	15
3. Librarian & Media Spec.	120	76	71	102	112	75	77	61	53	40	39
4. Reading	47	113	65	101	84	113	288	11	36	5	1
5. Special Education	97	179	149	368	246	399	462	234	237	292	118
6. Learning Disabilities	--	--	--	247	312	177	236	223	233	110	102
7. Other	16	41	41	83	66	39	107	15	26	19	18
Service Subtotal	348	519	426	989	922	878	1,263	627	646	512	302
TOTAL	492	767	631	1,202	1,111	1,054	1,446	787	780	621	405

TABLE 5

SUMMARY OF THE NUMBER OF GRADUATES FROM THE TWENTY-SEVEN TEACHER EDUCATION INSTITUTIONS IN IOWA
 COMPLETING PREPARATION FOR A TEACHING CERTIFICATE WITH A BACHELOR DEGREE BY SUBJECT AREA FOR THE YEARS 1970-1982.

Subject Area or Level	Number of Graduates by Year												
	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982
A. ELEMENTARY													
1. Nursery-Kindergarten										236	230	116	135
2. Classroom Teachers	2,100	1,997	2,296	2,281	1,722	1,562	1,426	1,357	1,433	908	842	1,033	910
ELEMENTARY SUBTOTAL	2,100	1,997	2,296	2,281	1,722	1,562	1,426	1,357	1,433	1,144	1,072	1,149	1,045
B. SECONDARY													
1. Agriculture	51	52	49	44	44	39	40	36	44	62	37	41	34
2. Art	217	206	214	216	220	196	190	144	153	113	112	86	71
3. Business Ed.	143	142	133	116	105	82	70	96	96	83	63	60	72
4. Distributive Ed.	15	15	15	4	7	8	6	6	10	8	8	4	0
5. English Lang. Arts													
English	523	498	515	341	327	273	222	193	186	139	131	142	105
Journalism	15	15	5	7	7	7	14	18	9	6	12	14	3
Speech/Dramatic Art	112	111	114	102	90	76	76	64	68	52	40	26	26
6. Foreign Language													
Combined	15	15	15	37	32	29	42	29	21	14	9	6	3
French	77	70	79	49	30	20	22	18	17	18	20	13	12
German	51	51	26	36	30	20	16	15	10	11	9	3	8
Latin	5	5	0	0	0	2	1	1	1	0	3	0	0
Spanish	107	95	59	62	45	44	38	50	33	25	18	13	16
7. Home Economics	197	187	203	187	157	128	109	151	149	110	92	83	99
8. Industrial Arts	90	90	86	96	88	73	79	53	68	65	74	63	40
9. Mathematics	234	218	228	207	166	95	104	75	60	46	49	38	46
10. Music	227	218	243	249	296	275	257	243	264	223	214	201	167
11. Phys. Ed./Health Ed.	533	504	550	566	590	503	525	468	461	380	354	408	353
12. Science													
Combined	57	56	29	24	60	61	77	71	56	42	49	35	18
Biology	137	129	107	119	84	77	66	66	61	52	36	59	41
Chemistry	17	15	19	17	16	13	11	16	13	7	5	8	6
Earth Science	0	0	0	0	7	4	12	6	7	2	3	1	2
General Science	43	40	16	34	7	7	7	14	5	12	5	16	15
Physical Science	0	0	0	0	9	14	7	11	8	0	0	6	3
Physics	15	15	19	18	9	9	7	6	5	2	2	3	2
13. Social Studies													
Combined	310	279	199	165	171	127	146	97	98	68	53	40	31
History, Geography	328	294	306	252	188	109	118	111	120	84	82	91	70
Econ., Soc., Psych.	94	81	94	98	91	73	71	58	45	26	24	25	17
14. Other Secondary Subjects	0	0	0	54	71	70	43	57	59	52	60	60	11
SECONDARY SUBTOTAL	3,633	3,401	3,323	3,100	2,947	2,434	2,376	2,173	2,127	1,702	1,564	1,545	1,271
FINAL TOTAL	5,733	5,398	5,619	5,381	4,669	3,996	3,802	3,530	3,560	2,846	2,636	2,694	2,316

SOURCE: Special acknowledgment to the members of the Iowa Association of Colleges for Teacher Education representing the twenty-seven institutions in Iowa.