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State of Iowa  
Board for Vocational Education  
Des Moines

F. E. MOORE, *Director*

# Occupational Trends in Iowa With Implications for Vocational Education

- I The Population of Iowa
- II Some Educational Trends
- III Occupational Trends

By  
P. G. FRASIER  
*Research Specialist*

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Bulletin No. 27  
Research Series 1  
February, 1938

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Board for Vocational Education  
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## FOREWORD

The Iowa vocational education act defines the work of the state board for vocational education and specifies that one of the important duties of the board is to "provide for making studies and investigations relating to prevocational and vocational training in agriculture, industrial and commercial subjects, and home economics." Likewise, the vocational rehabilitation act provides that the state board for vocational education is empowered and directed to "study and make investigations relating to the vocational rehabilitation of persons disabled in industry or otherwise and their return to civil employment and to formulate plans for the vocational rehabilitation of such persons."

The importance of research as a major factor in the development of adequate state programs of vocational education and vocational rehabilitation is fully recognized by the state board for vocational education. Therefore, in order that the further expansion of the work may be planned intelligently, the state board has recently increased its facilities for research activities. One of the immediate research services to be performed by the state board is the compilation and publication of important facts and data which will provide essential information for those charged with the responsibility of planning vocational training programs.

Among the important factors which must be considered in any long-time planning of vocational programs are those which involve population and occupational trends. This bulletin on "Occupational Trends in Iowa with Implications for Vocational Education," represents the first in a series of studies of the major social and economic factors which affect vocational education and vocational rehabilitation programs in Iowa. The material for this bulletin has been prepared by Mr. P. G. Frasier, research specialist for the state board for vocational education.

This bulletin should be of value to school superintendents, high school principals, vocational supervisors and teachers, vocational counselors, and others who are responsible for the planning and the development of vocational training programs designed to meet the needs of young and adult citizens.

F. E. MOORE, *Director*  
*Board for Vocational Education*



## PREFACE

If a program of vocational education in a community is to be basically sound, it must be founded on educational planning which takes into consideration occupational distribution and the changing occupational pattern in that community. Vocational training is primarily an economic service, and consequently the number of persons trained for employment in a given occupation must be based on the need for trained workers in that occupation in the community. It is evident that if a training program is established and there is no restriction on admission, an undesirable economic situation would undoubtedly develop. A random selection of occupations to be included in a training program might also result in neglect to train for occupations in which training is vitally needed.

The present series of studies were undertaken in an attempt to place before those persons interested in vocational education some of the underlying trends which are fundamental to educational planning and to indicate their implications for vocational education.

This first bulletin, which was prepared to present a general background of trends for the series of studies, deals with "The Population of Iowa," "Some Educational Trends," and "Occupational Trends." Other bulletins in the series which deal more specifically with occupation shifts are:

- II Changes in the Occupational Pattern of Iowa
- III Trends in the Production Occupations
- IV Trends in the Distributive Occupations
- V Trends in the Service Occupations

P. G. FRASIER,  
*Research Specialist.*



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# Occupational Trends in Iowa

## CHAPTER I

### THE POPULATION OF IOWA

#### Growth of Population

During the last half century the population of Iowa has grown much more slowly than the population of the United States as a whole. Iowa ranked tenth among the states in 1890 and nineteenth in 1930. In the forty-year period, 1890 to 1930, the population of the United States nearly doubled, while the population of Iowa increased 29.2 per cent.

During the decade 1890 to 1900 Iowa experienced a period of aggressive increase followed by a ten-year approximately stationary period. In the decade 1910 to 1920, the rate of increase was about one-half that of the United States, followed by a decade of very meager growth.

The size and rank of Iowa population and the per cent increase for each decade, 1890 to 1930 and for 1937, are shown in Table I.

TABLE I. Population of Iowa and Increases in Population in Iowa and the United States, 1890-1937<sup>1</sup>

Year	Iowa Population	Rank Among States	Period	Increase in Population		
				Over Previous Date		
				In Iowa		In U. S.
				Number	Per Cent	Per Cent
1937.....	2,539,000 <sup>2</sup>	--	1930-1937	68,061	2.7	5.2
1930.....	2,470,939	19	1920-1930	66,918	2.8	16.1
1920.....	2,404,021	16	1910-1920	179,250	8.1	14.9
1910.....	2,224,771	15	1900-1910	—7,082	—3	21.0
1900.....	2,231,853	10	1890-1900	319,556	16.7	20.7
Percentage of Increase, 1890 to 1930.....					29.2	95.0

<sup>1</sup>United States Statistical Abstract, 1931.

<sup>2</sup>Estimated population of the United States by six months' periods from January 1, 1930 to July 1, 1936, United States Bureau of the Census. Released January 21, 1937, Reg. No. 862. (Mimeographed)

#### Rural and Urban Population

The shift of population from rural to urban areas has progressed steadily in Iowa. In 1890, according to the United States Census, 78.8 per cent of the population lived in rural areas and only 21.2 per cent in urban areas. By 1930 the urban population had more than doubled, having increased from 405,764 in 1890 to 979,292 in 1930, while the total rural population showed a slight decrease for the same period. When urban population is segregated into urban and urban farm, and



rural population into rural non-farm and rural farm, the farm population constitutes 39.0 per cent or only about two-fifths of the total population. Iowa farm population has decreased from 40.9 per cent of the total population to 39.0 per cent in the last decade. The farm population in 1930 was almost identical with the urban population.

The trends in urban and rural population from 1890 to 1930 and in farm population for the last decade are shown in Table II and Figure 1.

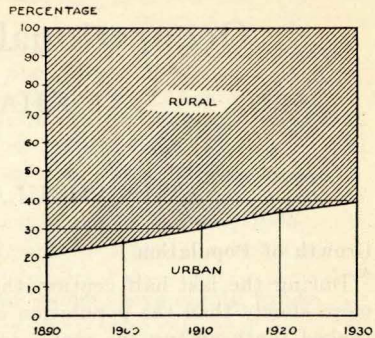


FIGURE 1. Percentage of Rural and Urban Population in Iowa.

TABLE II. Population of Iowa, Urban and Rural, and Farm Population Both Urban and Rural, and the Percentage Which Each Is of the Total Population, 1890-1930

Year	Popula- tion	Urban Population		Rural Population		Farm Population Urban and Rural	
	Number	Number	%	Number	%	Number	%
1930.....	2,470,989	979,292	39.6	1,491,647	60.4	978,954	39.0
1920.....	2,404,021	875,495	36.4	1,528,526	63.6	984,739	40.9
1910.....	2,224,771	680,054	30.6	1,544,717	69.4	-----	-----
1900.....	2,231,853	572,386	25.6	1,659,467	74.4	-----	-----
1890.....	1,912,297	405,784	21.2	1,506,533	78.8	-----	-----

### Growth of Centers of Population

The growth of centers of population in the state is shown by the increase in the number of cities and towns and their combined population. As can be seen in Table III, the number of cities and towns has grown from 684 in 1900 to 917 in 1930, and from 43.6 per cent to 58.6 per cent of the total population of the state.

Cities over 25,000 in population have grown in number from six to ten, and in population from 9.8 per cent to 22.2 per cent of the total population. The total population of this size city has grown 151.5 per cent in the last three decennial periods. Cities with a population of 4,000 to 8,000 have increased in number by eleven and in total population by 73.3 per cent. Cities and towns which have increased in numbers but retained about the same per cent of the total population are those presented in columns 2, 5, and 6. On the other hand, cities in the 2,500 to 4,000 group have decreased both in number and population. The number of towns in this group has decreased by seven and the population 19.4 per cent. Other rural territory has decreased by 18.9 per cent.

The general trend from 1900 to 1930 has been toward centers of population since the population of cities and towns has increased more rapidly than the population of the state as a whole.

TABLE III. Number and Population of Iowa Cities and Towns of Various Sizes and of Rural Territory in the Census Years 1900 and 1930, and the Population Increases in Each Group of Cities, 1910 and 1930

	Cities and Towns of Size						
	25,000 or Over	8,000 to 25,000	4,000 to 8,000	2,500 to 4,000	1,000 to 2,500	Under 1,000	Other Rural Territory
	1	2	3	4	5	6	7
1930							
Number.....	10	14	27	30	123	713	
Population.....	549,064	202,206	141,686	93,336	186,409	278,513	1,019,725
Per Cent of Total Population.....	22.2	8.0	5.8	3.8	7.5	11.2	41.2
1900							
Number.....	6	11	16	37	116	498	
Population.....	218,259	156,466	81,754	115,907	172,914	227,875	1,258,678
Per Cent of Total Population.....	9.8	7.0	3.6	5.2	7.7	10.2	56.4
Increase 1900-1930							
Population.....	330,805	45,741	59,932	-22,571	13,495	50,638	238,953
Per Cent.....	151.5	28.1	73.3	-19.4	7.7	22.2	18.9

### Composition of the Population

The foreign-born population has been a minor group in the total population of Iowa during the last four decades. In 1890 only about one-sixth of the population was foreign-born and this has been gradually reduced during the intervening years to 6.8 per cent in 1930. The percentage of native and foreign-born and those born in other states in the population of Iowa, 1890 to 1930, is presented in Table IV and Figure 2.

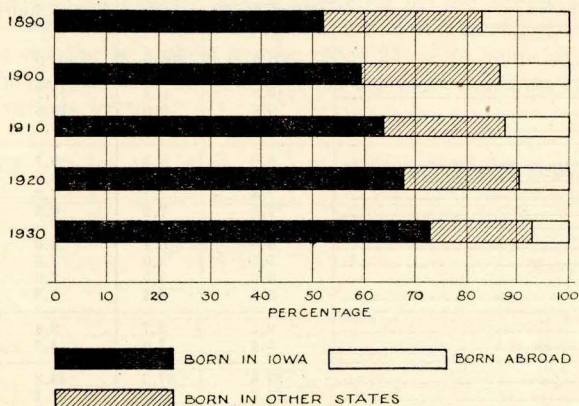


FIGURE 2. Percentage of Iowa Population Born in Iowa, Born in Other States, and Born Abroad, 1890 to 1930.



The figures presented in Table IV indicate that during this period of years 20 to 30 per cent of the total population of Iowa were born in states outside Iowa. The native-born population has increased from 52.3 per cent in 1890 to 72.8 per cent in 1930.

There is no racial problem in Iowa. The negro race comprised less than one per cent of the total population in 1930 and the majority of other racial groups are of northern European stock, easily assimilated.

**TABLE IV. Percentage of Native, Foreign-born, and Those Born in Other States in the Population of Iowa, 1890 to 1930**

Year	Per Cent of Population Born in		
	State	Other States	Foreign-born
1930.....	72.8	20.1	6.8
1920.....	67.6	22.6	9.4
1910.....	63.7	23.6	12.3
1900.....	59.1	26.9	13.7
1890.....	52.3	30.2	17.0

#### Age distribution of Population

The trend in the population of Iowa is toward a greater percentage of adults and a correspondingly smaller percentage in the younger age groups. In 1900, 44.2 per cent of the people of Iowa were under 20 years of age as compared to 37.2 per cent in 1930. The age group, 20 to 39 years, during the same period of time declined from 31.5 per cent to 29.7 per cent. The older age groups have rapidly increased. The 40

**TABLE V. Percentage Distribution of Population by Age Groups for Iowa and for the United States, 1930 and 1900**

Age Group	Percentage of Total Population			
	1930		1900	
	United States	Iowa	United States	Iowa
All ages.....	100.0	100.0	100.0	100.0
Under 5.....	9.3	8.9	12.1	11.8
5 to 9 years.....	10.3	9.8	11.7	11.5
10 to 14 years.....	9.8	9.5	10.6	10.7
15 to 19 years.....	9.4	9.0	9.9	10.2
20 to 24 years.....	8.9	8.1	9.7	9.5
25 to 29 years.....	8.0	7.3	8.6	8.3
30 to 34 years.....	7.4	7.1	7.3	7.3
35 to 39 years.....	7.5	7.2	6.5	6.4
40 to 44 years.....	6.5	6.4	5.6	5.5
45 to 49 years.....	5.7	5.9	4.5	4.5
50 to 54 years.....	4.9	5.9	3.9	3.7
55 to 59 years.....	3.8	4.4	2.9	3.1
60 to 64 years.....	3.1	3.7	2.4	2.5
Over 65 years.....	5.4	7.6	4.3	5.0
Under 20 years.....	38.8	37.2	44.3	44.2
20 to 39 years.....	31.8	29.7	32.1	31.5
40 to 59 years.....	20.9	22.6	16.9	16.8
Over 60 years.....	8.5	11.3	6.7	7.5



to 59 age group increased from 16.8 per cent to 22.6 per cent; and the percentage of those over 60 years of age has increased from 7.5 per cent to 11.3 per cent during the same period.

The percentage distribution of population by age groups for Iowa and the United States, 1900 and 1930, is shown in Table V and for Iowa in Figure 3.

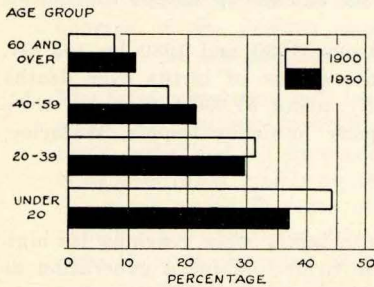


FIGURE 3. Percentage of Iowa Population in Various Age Groups, 1900 to 1930.

The figures presented in this table also reveal the fact that the percentage of children under five years of age in 1930 both in the United States and Iowa, was less than for each of the next three consecutive age groups. Quite the contrary was true in 1900 when those under five years of age constituted the largest percentage of the total population of any five-year age group. There were approximately 30,000 less children in Iowa under five years of age in 1930 than in 1920.

**Migration of Iowa Population<sup>1</sup>**

“During the decade 1920-1930 there were about 477,336 births and 249,494 deaths in Iowa. The state, consequently, had a natural increase through birth over death of 227,842. It is by this number that Iowa’s population would have been expected to increase during the decade. However, the actual increase was only 66,918. Clearly, more than 160,000 persons left Iowa during the ten years from 1920 to 1930.”

**Gain and Losses by Age Groups<sup>2</sup>**

“The vast majority of the emigrants from Iowa, about 145,000 of the 160,000 who left the state between 1920 and 1930, were between the ages of 20 and 49 years. About one-tenth of the people in this age group left Iowa during the decade; and within this group the percentage of persons leaving is highest among those 25 to 34 years of age, those who are in the prime of life. The following table indicates the percentages for various groups.”

TABLE VI. Emigration from Iowa by Sex and Age Groups, 1920-1930

Age Groups	Per Cent of Loss	
	Males	Females
20 - 24 years	11.0	8.8
25 - 29 years	14.6	13.2
30 - 34 years	13.7	15.5
35 - 39 years	10.4	10.7
40 - 44 years	9.6	8.0
45 - 49 years	9.3	9.2

<sup>1</sup>Iowa Planning Board, Second Report, April, 1935, p. 77.

<sup>2</sup>Ibid, p. 77.

"One gets even a more striking picture by examining these losses by age groups for the rural farm, rural non-farm separately, and the urban population. About 20 per cent of the male farm population and more than 30 per cent of the female farm population in the 20 to 24 age group emigrated from the farms between 1920 and 1930. In the 25 to 29 age group, 28 per cent in the male population and 29 per cent of the female population left the farms. Heavy losses took place also in the 30 to 34 age group and no gain in any age group except the oldest, 95 and over.

"The urban population increased between 1920 and 1930 by 103,797. Of this the actual increase through the excess of births over deaths was approximately 53,000. Consequently, about 51,000 newcomers were added to the urban population principally in Cedar Rapids, Waterloo, Iowa City and Ottumwa."

### Birth Rate

The birth rate in Iowa has declined constantly since reaching its high point of 20.7 in 1923, and will continue to decline for a generation at least. A high birth rate and a low death rate does not necessarily indicate a growing population. In 1923 when the Iowa birth rate reached its peak, 51,305 children were born, but the population increase during the decade was only 66,918.

Urban growth due to industrial development, the decreasing rural population, the decreasing number of foreign-born, and the decrease of female population of child-bearing age, are the most important factors in the lowering birth rate in Iowa.

TABLE VII. Birth Rate in Iowa, 1923-1934

1923	1929	1930	1931	1932	1933	1934
20.7	17.1	17.3	16.9	16.3	15.9	16.8

### The Future of Iowa Population<sup>1</sup>

"The stabilization of Iowa population will be completed during the last quarter of the present century (about 1980) if present tendencies are not disturbed. At that time the number of people in Iowa will be about 3,000,000 provided that in the meantime no changes occur in fertility and mortality rates, and there is no net population movement into or out of the state. When the Iowa population settles down to a stable age composition, a continuation of present fertility rates will approximately maintain a stationary population."

Certain conclusions from Karpinos' study are:

1. A birth rate of 17.0 is necessary at the existing age composition of the population to keep it stationary; namely, at a zero rate of

<sup>1</sup>Bernard Karpinos, "The Rate of True Natural Increase of Iowa Population," State University of Iowa, Thesis, 1932.



increase. The actual birth rate for Iowa in 1929 was reported as 17.1—only slightly above the zero rate.

2. If no changes in fertility rates occur, a birth rate of 15.54 will ultimately replace the birth rate of 17.1 (1929), a decrease of 1.6. If no changes in the mortality rates take place, a death rate of 15.56 will replace the present death rate of 10.4, an increase of 5.1.
3. The stabilization process will be approximately complete in the last quarter of the present century; about two generations will be required for the age composition to become constant.
4. The total population will increase ultimately to about 24 per cent above the 1930 level, providing no changes in fertility and mortality rates occur and no immigration takes place. This increase will be concentrated mainly in the age groups of 40 and above, while the group under 20 years of age is likely to decrease. When the population is stabilized, the number in this younger group will be reduced to 96 per cent of what it was in 1930. The number in the age group 20 to 39, on the other hand, will be 15 per cent larger; in the 40 to 59 group, 43 per cent larger; in the 60 to 79 group, will be about double; and the number in the 80 and above group, will be almost triple that in 1930.
5. Great changes in the age composition of the population will accompany the stabilization process. The young group under 20 will decline from 36.7 per cent of the total population 1930 to 29.0 per cent in the last quarter of the century. The 20 to 39 group will decline from 29.7 per cent in 1930 to 27.6. On the other hand, the proportions of the older age group will be substantially increased. In 1930, 21.7 per cent of the total population belonged to the 40 to 59 group, but when stabilized its percentage will have risen to 24.9. The 60 to 79 group, which constituted in 1930 ten per cent of the total population, will make up 16 per cent in the stable population. The 80 and above group will rise from one per cent in 1930 to almost two and one-half per cent when stabilized.

## SUMMARY

During the first three decades of the twentieth century the growth of population has been very slow compared with the United States as a whole.

The drift from rural to urban population has progressed steadily in Iowa.

There is a general trend in the state toward centers of population.

Farm population is becoming stabilized.

Urban population has reached a parity with farm population.

The foreign-born group is becoming smaller each decade.

There is no racial problem in Iowa.

The population is becoming more predominantly adult.



Population trends in Iowa indicate a much smaller school population in the future.

Migration of people in the younger age groups, especially of females of child-bearing ages, is doubly affecting the rate of population growth. There is a very definite downward trend in the birth rate in Iowa.

Trends in population growth point to a stabilized population of 3,000,000 in 1980.

#### **Implications for Vocational Education**

Several trends which have been brought out in this study have very definite implications for vocational education.

1. A slow growing or stabilized population will make possible long range educational planning and a unified program of vocational education.
2. The trend in population toward a greater percentage of adults relieves the necessity for school plant expansion.
3. The trend toward a greater percentage of adults in the population has a direct bearing on school finance. A larger percentage of adults are able, because of higher productiveness, to support the schools.
4. A lower percentage of persons of school age makes possible an expansion of school services to those in school.
5. A larger percentage of adults indicates a growing adult education problem.
6. Because of the small percentage of foreign-born and racial groups in the population, the problem of special education for these groups is practically eliminated.
7. The growth of urban population will increase the demand for certain types of vocational education.
8. The growth of centers of population will simplify the organization of vocational schools and classes.
9. The fact that 60.4 per cent of the population live in small towns or on the farm, makes difficult the problem of organization and administration of vocational education.

# Occupational Trends in Iowa

## CHAPTER II

### SOME EDUCATIONAL TRENDS IN IOWA

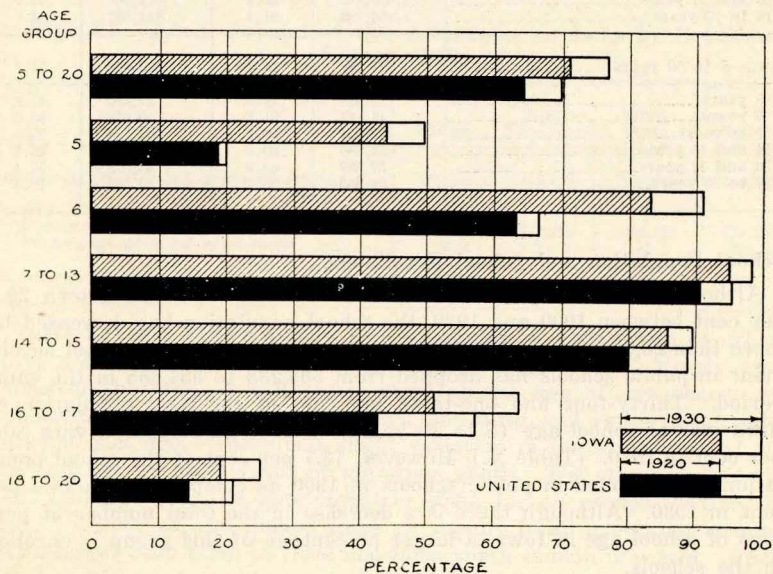
#### School Attendance in Iowa

Iowa ranks twelfth among the states in the percentage of young people 7 to 20 years of age who were attending school in 1930. Seventy-seven and seven-tenths per cent of the population of Iowa in this age

**TABLE VIII. Percentage of Persons 7 to 20 Years of Age Attending School in the United States and in Twelve States, 1930**

State	Per Cent	State	Per Cent
United States -----	69.9		
Utah -----	83.1	Nevada -----	79.4
Idaho -----	81.5	Wyoming -----	78.8
California -----	81.2	Kansas -----	78.6
Washington -----	80.9	Ohio -----	78.4
Oregon -----	80.5	South Dakota -----	77.8
Montana -----	79.8	Iowa -----	77.7

group were attending school as compared to 69.9 per cent for the United States as a whole. Georgia ranked lowest among the states with 64.6 per cent of this age group attending school.



**FIGURE 4. Percentage of Population in Various Age Groups Attending School in the United States and in Iowa, 1920 and 1930.**



### Age Distribution and School Attendance

The percentage of young people attending school as shown in Table IX and Figure 4, was larger in each of the age groups in 1920 and 1930 than in the corresponding age groups in the United States. The most extreme difference was in the five-year age group which for the United States was 20 per cent and for Iowa, 49.6 per cent.

Of the six-year age group, 66.3 per cent for the United States and 91.2 per cent for Iowa were attending school in 1930. Approximately 10 per cent of the persons in the 14 and 15 year group in Iowa were not in school, and about 36 per cent of the 15 and 16 year group were not enrolled.

In the decade 1920 to 1930 there was an increase of 5.5 per cent in the total school enrollment in Iowa; this gain is distributed to all of the age groups.

**TABLE IX. School Attendance for the Population 5 to 20 Years of Age in the United States and in Iowa, 1930 and 1920**

	1930		1920	
	Number Enrolled	% of Total Age Group	Number Enrolled	% of Total Age Group
United States—5 to 20 years.....	26,849,939	60.9	21,373,976	64.3
5 years.....	500,734	20.0	441,411	18.8
6 years.....	1,667,486	66.3	1,480,714	63.3
7-13 years.....	16,398,400	95.3	13,869,010	90.6
14 and 15 years.....	4,156,378	88.8	3,124,129	79.9
16 and 17 years.....	2,669,857	57.3	1,644,061	42.9
18 to 20 years.....	1,456,784	21.4	814,651	14.8
Iowa—5 to 20 years.....	571,228	76.7	515,616	71.2
5 years.....	23,632	49.6	21,480	43.9
6 years.....	43,117	91.2	40,058	83.0
7-13 years.....	330,351	98.3	309,744	95.0
14 and 15 years.....	83,686	89.8	74,732	85.8
16 and 17 years.....	57,889	63.9	45,078	51.4
18 to 20 years.....	32,553	25.1	24,524	19.4

### School Population and School Enrollment

Although the total population of the state of Iowa has grown 29.2 per cent between 1900 and 1930, the school population has decreased by more than 23,000 (767,870 in 1900 and 744,553 in 1930) and school enrollment in public schools has dropped from 566,233 to 554,655 in the same period. Thirty-four and one-tenth per cent of the total population of Iowa was of school age (5 to 20 years) in 1900 as compared with 30.1 per cent in 1930. (Table X.) However, 73.7 per cent of the school population was enrolled in public schools in 1900 as compared with 74.4 per cent in 1930. Although there is a decrease in the total number of persons of school age in Iowa, a larger percentage of this group is enrolled in the schools.

TABLE X. Public School Enrollment Trends in Iowa, 1900 to 1930

Year	Total Population	School Population	Per Cent	School Enrollment	Per Cent
1900.....	2,231,853	767,870	34.1	566,233	73.7
1910.....	2,224,771	675,222	30.3	510,661	75.6
1920.....	2,404,021	724,452	30.1	547,272	75.5
1930.....	2,470,939	744,553	30.1	554,655	74.4

## Percentage of 1930

1900.....	90.2	103.0	----	102.1	----
1910.....	90.0	90.6	----	92.0	----
1920.....	97.2	97.3	----	98.1	----
1930.....	100.0	100.0	----	100.0	----

<sup>1</sup>Per Cent School Population of Total Population.<sup>2</sup>Per Cent School Enrollment of School Population.

## School Attendance by Population Groups

In 1930 the school population 5 to 20 years of age numbered nearly three-fourths of a million. Table XI shows that 43.1 per cent of the total school enrollment was living on rural farms, 36.9 per cent in urban centers with a population in excess of 2,500, and the remaining 19.9 per cent in small towns and villages. A further analysis of school enrollment reveals the fact that a larger percentage of rural non-farm youth attended school than either the urban or rural farm youth. Seventy-nine and eight-tenths per cent of the rural non-farm youth were attending school in 1930 as compared with 78.8 per cent of urban, and 73.6 per cent of rural farm youth.

TABLE XI. School Population and Attendance in Iowa by Population Groups, 1930

	Urban	Rural Non-Farm	Rural Farm	Total
Number of persons 5-20 years of age.....	266,985	142,699	334,849	744,533
Persons attending school				
Number.....	210,712	113,928	246,588	571,228
Percentage of total attendance.....	36.9	19.9	43.1	100.0
Percentage of group attending school.....	78.8	79.8	73.6	76.7

Table XII and Figure 5 show the percentage of each group of urban, rural non-farm, and rural farm youth attending school. Nearly two-thirds of the urban youth enter school at the age of five years, and approximately two-fifths of the rural non-farm and rural farm youth enter at that age. There is a slight variation in the attendance of the six-year age group in favor of the urban youth. The attendance of the 7-13 year age group is approximately equal for all groups. After the age 16 is reached, attendance drops off rapidly in all population groups, but a larger proportion of rural non-farm youth remain in school. Rural farm youth enter school at a later age and discontinue their education at an earlier age than do either the urban or rural non-farm youth.



TABLE XII. Percentage of Population Attending School in Iowa, 1930

Ages	Urban	Rural Non-Farm	Rural Farm
5 years.....	65.2	43.1	40.3
6 years.....	93.5	91.2	89.4
7-13 years.....	98.4	98.4	98.3
14 and 15 years.....	95.6	93.4	83.8
16 and 17 years.....	70.1	74.9	54.2
18-20 years.....	28.7	31.8	18.9
Total.....	78.8	79.8	73.6

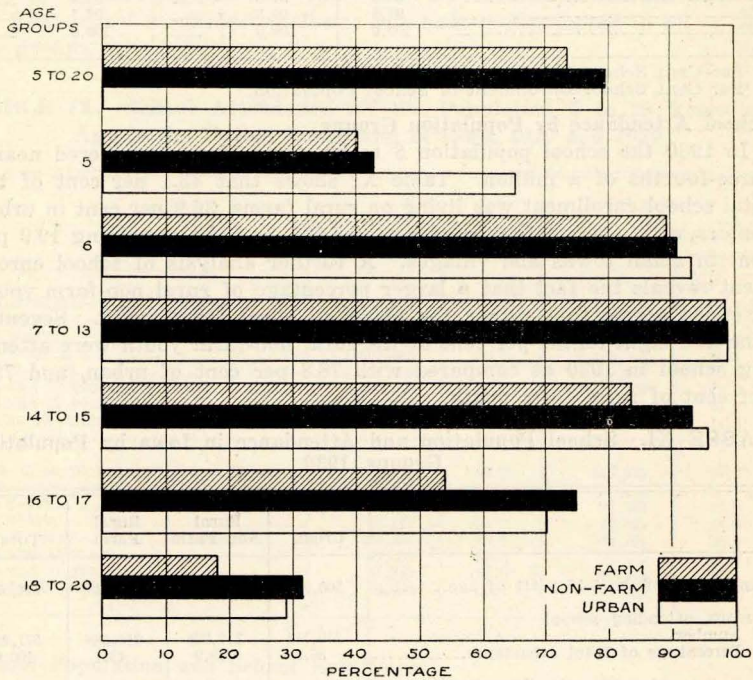


FIGURE 5. Percentage of Population Attending School by Population Groups, Iowa, 1930.

#### Distribution of School Enrollment by Types of Schools

During the school year 1935-36 (Table XIII) there were 538,003 pupils enrolled in 12,156 schools in 4,876 school corporations in Iowa. Approximately 75 per cent of the schools were one-room elementary schools, 12.0 per cent were two or more room elementary schools, and 3.7 per cent were kindergartens. Of the total number of schools, 6.5 per cent were regular high schools of four years or less; 0.7 per cent were separately organized senior high schools; 0.5 per cent were combined junior-senior high schools; and 1.3 per cent were separately organized junior high schools.

Of the total number of pupils enrolled in the schools of the state, 24.5 per cent were enrolled in one-room elementary schools; 40.5 per cent in two or more room elementary schools; 15.2 per cent in regular high schools of four years or less; 5.9 per cent in separately organized senior high schools; 3.3 per cent in junior-senior high schools; and 1.3 per cent in separately organized junior high schools.

**TABLE XIII. Number of Schools and Enrollment by Types of Schools in Iowa, 1935-1936**

Type of School	Number of Schools	Per Cent	Enrollment	Per Cent
Kindergarten.....	461	3.7	18,118	3.3
One-room Elementary.....	9,119	75.0	131,903	24.5
Two or More Room Elementary.....	1,461	12.0	218,356	40.5
Junior High School (Separate).....	164	1.3	35,979	6.6
Junior-Senior High Schools.....	63	0.5	17,752	3.3
Senior High School (Separate).....	93	0.7	31,756	5.9
Regular High Schools of four years or less.....	795	6.5	82,286	15.2
Ungraded Classes.....			1,853	0.3
Total.....	12,156	100.0*	538,003	100.0

#### Distribution of Enrollment in Iowa High Schools

During the school year 1935-36 (Table XIV) there were 943 high schools in Iowa. Of these high schools, 894 offered a four-year curriculum, five offered three years, 39 two years, and five only one year of work. More significant from the standpoint of the administration of vocational education is the enrollment in these schools. More than one-fourth of these schools had an enrollment of less than 40 pupils, and approximately two-thirds of the total number of schools enrolled 99 pupils or less. One-eighth of the total number of schools enrolled 100 to 199 pupils. The remaining 104 schools had enrollments as follows: 44 schools, 200 to 299; 27 schools, 300 to 399; 12 schools, 400 to 499; 13 schools, 500 to 599; six schools, 600 to 799; and 16 schools, over 1,000.



TABLE XIV. Enrollment and Number of Year's Work Above Eighth Grade, Iowa, 1935-1936

Enrollment	Number of Schools, and Years Above the Eighth Grade					
	One	Two	Three	Four	Total	Cumulative Total
1000 - Over				16	16	943
900 - 999				0	0	943
800 - 899				0	0	943
700 - 799				3	3	927
600 - 699				3	3	924
500 - 599				13	13	921
450 - 499				3	3	908
400 - 449				9	9	905
350 - 399				15	15	896
300 - 349				12	12	881
280 - 299				8	8	869
260 - 279				9	9	861
240 - 259				5	5	852
220 - 239				8	8	847
200 - 219				14	14	839
180 - 199				22	22	825
160 - 179				21	21	803
140 - 159				30	30	782
120 - 139				45	45	752
100 - 119				78	78	707
90 - 99				51	51	629
80 - 89				65	65	578
70 - 79				67	67	513
60 - 69				93	93	446
50 - 59				102	102	353
45 - 49				55	55	251
40 - 44				49	49	196
35 - 39		2	1	36	39	147
30 - 40		2		30	32	108
25 - 29			1	19	20	76
20 - 24	1	4	2	9	16	56
15 - 19		7		4	11	40
10 - 14		14		0	14	29
5 - 9	2	8	1		11	15
1 - 4	2	2			4	4
Total	5	39	5	894	943	

### Illiteracy

A low percentage of illiteracy is a matter of pride to any state. Iowa ranks first among the states in 1930 with only .8 per cent of her population over ten years of age classed as illiterate. Illiteracy has decreased .3 per cent during the last decade.

The negro population of Iowa showed the highest percentage of illiteracy, although in this group it decreased nearly three per cent from 1920 to 1930. The foreign-born white population showed the next highest percentage of illiteracy, and the native white population showed the lowest (four-tenths of one per cent) which is slightly higher than for three states shown in Table XV.

TABLE XV. Percentage of Illiteracy for the United States, Iowa, and Nine States Lowest in Illiteracy, 1920-1930

Divisions and States	* Per Cent Illiterates Among Persons Ten Years of Age and Over							
	All Classes		Native Whites		Foreign-Born		Negro	
	1930	1920	1930	1920	1930	1920	1930	1920
Iowa.....	.8	1.1	.4	.5	3.6	4.9	5.4	8.1
United States (Continental).....	4.3	6.0	1.5	2.0	9.9	13.1	16.3	22.9
Oregon.....	1.0	1.5	.3	.4	3.6	5.1	2.5	4.7
Washington.....	1.0	1.7	.3	.3	2.9	4.7	4.0	1.2
Idaho.....	1.1	1.5	.4	.3	4.0	6.5	4.2	5.4
South Dakota.....	1.2	1.7	.4	.4	3.7	4.7	2.2	5.2
Nebraska.....	1.2	1.4	.4	.4	6.0	6.4	3.9	4.8
Utah.....	1.2	1.9	.3	.3	3.6	6.3	3.2	4.6
Kansas.....	1.2	1.6	.5	.6	2.9	4.7	2.9	4.0

Elimination from the Schools of Iowa

Following the population trends in Iowa toward a larger percentage of adult population, the total school enrollment in the state has dropped

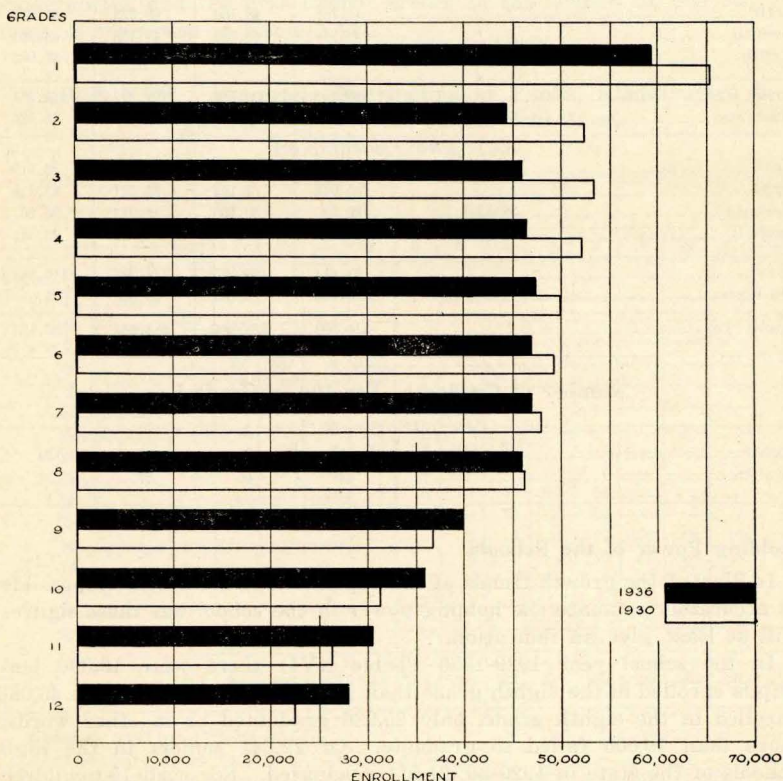


FIGURE 6. Enrollment in Iowa Schools, Showing Gain or Loss by Grades, 1930 and 1936.



from 533,823 pupils in 1929-30 to 516,602 in 1935-36, a loss of 17,221. During this period of time the high school enrollment has decreased 17,602, and grades one to eight have dropped in enrollment from 416,981 to 382,158, a total loss of 34,823. Data presented in Table XVI and Figure 6 indicate that this loss in enrollment is found in each of the first eight grades but is greatest in the lower grades. High school enrollment has increased in each grade and for each year during the period. The wave of low enrollment in the elementary school will eventually pass into the high school.

TABLE XVI. Enrollment in Iowa Public Schools, 1930-1936

Grades and Graduates	Children Enrolled in Iowa Schools			
	1935-1936	1933-1934	1931-1932	1929-1930
First.....	59,322	59,613	62,643	65,476
Second.....	44,277	47,930	51,414	52,442
Third.....	45,877	48,895	50,657	53,400
Fourth.....	46,300	49,459	50,815	52,297
Fifth.....	47,220	48,781	51,479	50,052
Sixth.....	46,788	48,169	49,222	49,224
Seventh.....	46,914	48,753	47,158	48,004
Eighth.....	45,750	48,189	46,454	46,086
Total.....	382,158	399,789	409,842	416,981
Graduates.....	38,960	40,286	38,089	35,926
Ninth.....	39,968	37,380	37,409	36,619
Tenth.....	35,943	34,144	32,521	31,315
Eleventh.....	30,520	30,130	28,912	26,267
Twelfth.....	28,013	26,941	25,380	22,641
Total.....	134,444	128,595	124,222	116,842
Graduates.....	26,136	25,100	23,538	21,011
Grand Total.....	516,602	528,384	534,064	533,823

Number of Graduates Per 100 in Grade I

Eighth.....	65	67	60	54
Twelfth.....	44	42	37	32

Holding Power of the Schools

In view of the growth trends of the population of Iowa, it is impossible to accurately estimate the holding power in the school but these figures will at least give an indication.

In the school year 1929-1930 (Table XVI) there were 19,390 less pupils enrolled in the eighth grade than in the first grade. Of the 46,086 enrolled in the eighth grade, only 35,926 graduated or in other words, more than 10,000 failed to graduate. Of 22,641 seniors in the high schools of the state in 1929-30, 21,011 graduated. For each 100 children enrolled in the first grade in 1929-30, 54 graduated from the eighth grade

and 32 from the high schools. Comparable figures for the school year 1935-1936 indicate that for each 100 enrolled in the first grade, 65 completed the eighth grade and 44 graduated from the high school. These figures would indicate an increased holding power of the elementary school of 11 per cent and of the high school 12 per cent. However, if these figures are adjusted in terms of population trends, the percentages would be considerably lower.

If a study is made of the underlined figures running diagonally across Table XVI starting with an enrollment of 65,476 in the first grade in 1929-1930, a more adequate understanding of deletions will be secured. This class, in the third grade in 1931-32, had decreased in enrollment to 50,657; then to 48,781 in 1933-34; and reached the seventh grade in 1935-36 with an enrollment of 46,914, a shortage of more than 18,000 pupils. If the sixth grade of 1929-30 with an enrollment of 49,224 is followed to the senior year, it is found that 26,136 graduated. These figures would indicate a lower holding power than 44 per cent.

#### Retardation and Acceleration of Pupils in One School in Iowa

A study of the retardation and acceleration of 4,513 pupils in the kindergarten and the first twelve grades in the schools of one city of Iowa, is presented in Table XVII.

**TABLE XVII. Age-grade Distribution of Pupils, Kindergarten to Twelfth Grade in the Public Schools of Burlington, Iowa, 1937**

Age	Grade												Total					
	Kdg.	1	2	3	4	5	6	7	8	9	10	11		12				
Under 5																		
5	88																	88
6	191	112																303
7	6	214	81															301
8		38	169	92														299
9		2	49	188	80	1												320
10			6	62	153	73												294
11			2	20	76	185	84											367
12			2	5	23	76	195	74	1									376
13					6	31	75	197	58	2								369
14						3	6	39	80	158	81							367
15							2	10	39	87	204	66	8					416
16								1	3	9	35	77	170	90	16			401
17									2	1	6	16	47	155	116			343
18										1	2	2	8	44	166			223
19												1	3	8	28			40
20														1	4			5
Total																1		1
	285	366	309	367	342	374	408	401	347	383	295	305	331					4,513

Normal Age for Grade—2,345.

Accelerated—1,095 one year, 28 two years.

Retarded—745 one year, 231 two years, 50 three years, 15 four years, 3 five years, 1 six years.



Of these 4,513 pupils, 2,345 or 51.9 per cent were in the normal grade for their age, 1,123 or 24.8 per cent were accelerated one or two years, 28 were accelerated two years, and 1,095 were accelerated one year. Retardation of from one to six years was found in 1,045 cases or 23.1 per cent of the total number studied. Approximately two-thirds of the retarded cases, 745, were retarded one year, 231 were retarded two years, 50 three years, 15 four years, 3 five years, and 1 six years.

Data were not obtained from 82 pupils in the tenth, eleventh, and twelfth grades, but a complete coverage was made of all pupils below the tenth grade.

### Reasons for Leaving School

In Starrak's<sup>1</sup> study of 1,147 out-of-school rural youth between the ages of 15 and 25 inclusive, it was found that 640 or 55.8 per cent had graduated from high school and two had completed the years of high school offered in their community. Of the 505 who discontinued their education before graduation from high school, 216 or 42.7 per cent quit because of economic reasons, 212 or 41.9 per cent quit because of lack of interest in, dislike for, failure to pass, or trouble in school. Parental objection to further schooling accounts for 7.5 per cent, and ill health for 5.3 per cent of the discontinuance of schooling.

### School Subjects Liked and Disliked

Starrak's<sup>2</sup> study also indicates that more pupils like than dislike home economics, industrial arts, agriculture, music, commercial subjects, and athletics; and that more pupils dislike than like mathematics, English, history, Latin, and "teacher."

### Some Educational Implications

Although less than eight per cent of the gainful workers ten years of age and over in Iowa find employment in the professional fields, education in Iowa as well as in other states has been pointed directly at preparation for entrance into the professions. This unbalanced training condition is indicated in Table XVIII which shows that in the United States there is one person in law training for every 3.8 lawyers, one medical student for every 7.0 physicians and surgeons, and one dental student for every 8.7 dentists now gainfully employed. In Iowa there is in training one doctor for every six physicians, one lawyer for every 8.1 lawyers, and one dentist for every 8.4 dentists in the state.

In the agricultural and trade and industrial fields only a small beginning has been made in training programs. If the numbers trained in agriculture colleges for purely non-farm agricultural pursuits are eliminated from consideration, then there is being trained in the United States one prospective farmer for every 81.9 persons gainfully employed in agriculture, and in Iowa one trainee for every 88.4 persons employed in agriculture.

<sup>1</sup>J. A. Starrak, "A Survey of Out-of-school Rural Youth in Iowa," Iowa State Planning Board, Table VIII.

<sup>2</sup>Ibid, Table XV.

TABLE XVIII. The Ratio of the Number in Training to the Total Number Employed in Certain Gainful Occupations in the United States and in Iowa, 1930<sup>1</sup>

Occupations and Divisions	Total No. Gainfully Employed	Number Schools Reporting	Total Number in Training	Ratio Trainees to Employees
<b>Clergymen</b>				
United States.....	148,848	159	13,045	11.4
Iowa.....	3,686	3	123	29.9
<b>Dentists</b>				
United States.....	71,055	39	8,162	8.7
Iowa.....	1,708	1	201	8.4
<b>Lawyers</b>				
United States.....	160,605	135	41,426	3.8
Iowa.....	2,634	2	323	8.1
<b>Physicians</b>				
United States.....	153,803	73	21,964	7.0
Iowa.....	3,115	1	515	6.0
<b>Agriculture</b>				
United States.....	10,471,998	---	127,849	81.9
Iowa.....	303,881	---	3,436	88.4
<b>Trades and Industries</b>				
United States.....	23,782,617	---	198,634	119.7
Iowa.....	309,842	---	2,214	139.9
<b>Homemakers</b>				
United States.....	28,405,294	---	77,289	306.7
Iowa.....	603,820	---	1,066	597.8

<sup>1</sup>Compiled from U. S. Statistical Abstract, 1930.

The determination of the training ratio in the trade and industrial field is a more complicated matter. By "trade and industrial" pursuit, as defined in Vocational Education Bulletin Number 1<sup>2</sup>, is meant: "(1) Any occupation which directly functions in the designing, producing, processing, assembling, maintaining, servicing, or repairing of any manufactured product; and (2) Any public or other service trades or occupations which are not classified as agricultural, commercial, professional, or homemaking."

Practically all occupations listed in the United States Census reports under the headings "Forestry and Fishing" (with the exception of certain phases of forestry), "Extraction of Minerals," "Manufacturing and Mechanical Pursuits," "Transportation and Communication," "Public Service," and "Domestic and Personal Service," (including only those phases of domestic service where workers are employed for wages), may be regarded as trade and industrial pursuits.

Using this definition as a basis for determining the number of workers in trade and industry and counting the trainees of federally subsidized vocational schools and classes and apprentices, there is being trained one trade and industrial worker to replace 119.7 workers in these pursuits in the United States, and one trainee for every 139.9 workers in Iowa. Evening school pupils are not counted as trainees because the

<sup>2</sup>"Statement of Policies for the Administration of Vocational Education," United States Department of the Interior, Office of Education, February, 1937.



work in the evening schools is primarily trade extension rather than trade preparatory.

To determine the number of homemakers in the United States and Iowa, figures were taken from the federal census which in 1930 included a specific study of these workers. There were 28,405,294 such workers in the United States and 603,820 in Iowa.

The number of trainees in homemaking was taken from the federal report for vocational education for 1930 and includes only those in preparatory training in public day school classes. When the number of trainees prepared for entrance in the occupation is compared with the number of workers in the occupation, there is found to be one person in training for 396.7 workers in the occupation in the United States and one for every 597.8 such workers in Iowa.

It is evident that up to 1930, at least, tradition played a more important part in shaping our philosophy of education than did the vocational needs of our people. However, since 1930 there has been a pronounced trend, even among academic educators, toward an education which is more practical and basically useful to the individual in making, not only a life, but also a living.

## SUMMARY

Iowa ranks twelfth among the states in the percentage of those of school age (7 to 20 years) attending school.

In the last four decades the school population has decreased, but the percentage of school enrollments has increased.

Seventy-nine and eight-tenths per cent of the rural non-farm youth 5 to 20 years of age were attending school in 1930 as compared with 78.8 per cent of urban, and 73.6 per cent of rural farm youth.

School attendance drops off rapidly after the age of 16 years is reached.

Approximately two-thirds of the four-year high schools in Iowa have an enrollment of less than 99 pupils.

Nearly 63 per cent of the entire school population in the state was found in rural areas.

Elementary school enrollments show a consistently downward trend, while enrollment in the high schools are increasing.

There has been an upward trend in the percentage of graduates from the eighth and twelfth grades.

Eliminations from school commence with the sixth grade and become pronounced above the eighth grade.

The chief reasons for leaving school are economic necessity and dissatisfaction with the school.

The retardation of 25 per cent of the pupils, one to six years, presents a financial and an educational problem.

The program of training for occupations in Iowa is very unbalanced and not at all in accordance with occupational distribution in the state.

### Implications for Vocational Education

1. More than 173,000 youth between the ages of 5 and 20 years were not enrolled in school in 1930. The majority of this group are of ages 16 years and over, this would indicate the need for a vocational training program for out-of-school youth. Although this group is of evening school age, few are enrolled in evening schools in Iowa.
2. The distribution of 60.4 per cent of the population in small towns and on the farm and the fact that nearly 66 per cent of the high schools have an enrollment of less than 99 pupils, indicate the need for an extension of the organization of vocational education to include more diversified programs and possibly the services of itinerant teachers.
3. Since a larger percentage of all of the children of all of the people are enrolled in school for a longer period, the need for a pronounced trend away from purely academic courses in high schools is apparent.
4. The inclusion of vocational training courses in the high school program should reduce retardation and eliminations by its appeal through usefulness to the interests of the pupil.
5. If more attention in preparatory training is given to occupational distribution in the community, a more satisfactory outcome of education would be secured.



# Occupational Trends in Iowa

## CHAPTER III

### OCCUPATIONAL TRENDS

#### Occupational Distribution

Iowa is predominantly an agricultural state with more than one-third of the total number of gainful workers in agricultural pursuits. An increasingly larger percentage of all gainful workers in the state find employment in other occupations. The recent movement in the decentralization of large industries will bring a much broader opportunity for employment in manufacturing and mechanical pursuits and in related occupations.

**TABLE XIX. Gainful Workers 10 Years of Age and Over by General Divisions of Occupations and by Sex for the United States and for Iowa, 1930**

(Per Cent not shown when less than 0.1)

Divisions of Occupations	Per Cent Distribution					
	United States			Iowa		
	Total	Male	Female	Total	Male	Female
Agriculture.....	21.4	25.1	8.5	36.2	43.2	4.2
Forestry and Fishing.....	.5	.7	-----	0.1	0.1	-----
Extraction of Minerals.....	2.0	2.6	-----	0.9	1.2	-----
Manufacturing and Mechanical Pursuits.....	28.9	32.1	17.5	19.0	21.1	9.1
Transportation and Communication.....	7.9	9.4	2.6	8.4	9.5	3.4
Trade.....	12.5	13.4	9.0	12.9	13.2	11.5
Public Service (N. E. C.).....	1.8	2.2	0.2	1.3	1.5	0.3
Professional Service.....	6.7	4.5	14.2	7.5	3.9	24.0
Domestic and Personal Service.....	10.1	4.7	29.6	8.0	3.2	30.2
Clerical Occupations.....	8.2	5.4	18.5	5.6	3.0	17.4

(N. E. C.)—Not elsewhere classified.

Table XIX indicates that there is a larger percentage of men occupied in agriculture, transportation and communication, and in trades in Iowa than in the United States; and similarly a larger percentage of women find employment in trade, transportation and communication, professional service, and domestic and personal service.

On the other hand, a smaller percentage of gainful workers are occupied in forestry and fishing, extraction of minerals, public service, domestic and personal service and clerical occupations. The general distribution of the working population by sex in the ten major occupational divisions in 1930 is shown in Table XIX for the United States and for Iowa, and in Figure 7 for Iowa.

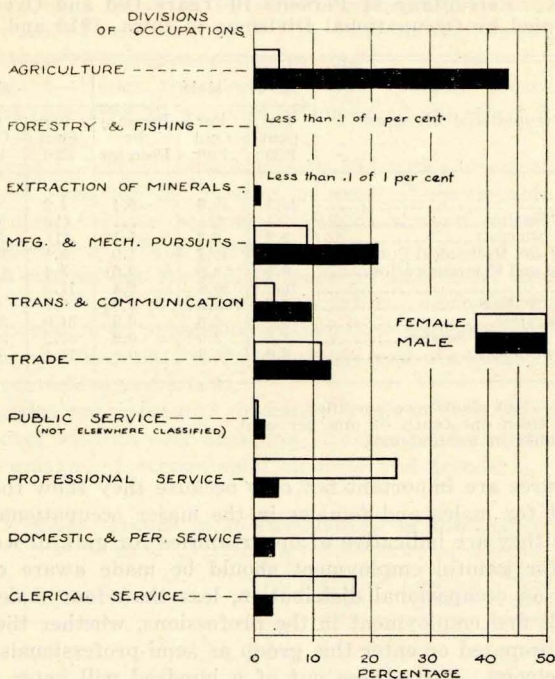


FIGURE 7. Occupational distribution of Male and Female Gainful Workers by Occupational Divisions, Iowa, 1930.

**Sex and Occupations**

Table XX indicates changes in occupational distribution of gainful workers by sex in the major occupational divisions for 1910 and 1930. During the twenty-year period there has been a gradual falling off in the percentage of males employed in agriculture and in the extraction of minerals. A smaller percentage of the females are employed in agriculture, manufacturing and mechanical pursuits, and domestic and personal service. All other occupational divisions show a gain in the percentage of both male and female employment. The greatest gain for males is shown in trade, and for females in the clerical occupations. The greatest loss of males is in agriculture, and females in manufacturing and mechanical pursuits.



TABLE XX. Percentage of Persons 10 Years Old and Over Gainfully Occupied by Occupational Divisions in Iowa, 1910 and 1930

General Occupational Divisions	Male			Female		
	Per Cent 1930	Per Cent 1910	Increase or Decrease	Per Cent 1930	Per Cent 1910	Increase or Decrease
Agriculture.....	43.2	49.6	-6.4	4.2	7.3	-2.9
Forestry and Fishing.....	.1	(2)	---	(1)	(2)	---
Extraction of Minerals.....	1.2	2.3	-1.1	(1)	(1)	---
Manufacturing and Mechanical Pursuits.....	21.1	19.2	1.9	9.1	18.6	-9.5
Transportation and Communication.....	9.5	8.9	0.6	3.4	2.4	1.0
Trade.....	13.2	10.8	2.4	11.5	7.7	3.8
Public Service (N. E. S.).....	1.5	.9	0.6	0.3	.4	.1
Professional Service.....	3.9	3.0	0.9	24.0	21.9	2.1
Domestic and Personal Service.....	3.2	3.0	0.2	30.2	33.5	-3.3
Clerical Occupations.....	3.0	2.2	0.8	17.4	8.2	9.2

(N. E. S.)—Not elsewhere specified.

(1)—Less than one-tenth of one per cent.

(2)—Included in agriculture.

These figures are important not only because they show the trends in employment for males and females in the major occupational divisions, but because they are indicative of opportunities for gainful work. Youth preparing for gainful employment should be made aware of the fact that, based on occupational distribution, less than four males out of a hundred will find employment in the professions, whether they are professionally prepared or enter this group as semi-professionals or attendants and helpers. Forty-three out of a hundred will enter agriculture as a vocation, and 21 will find employment in manufacturing and mechanical pursuits. Sixteen will enter commercial employment, 13 in trade and three in clerical positions. Ten will enter the transportation and communication group for employment.

Of the females, 24 out of a hundred will find employment in the professional group, but 16 will enter as teachers, and four of the hundred will be semi-professionals or helpers. The best opportunity for gainful employment is in the domestic and personal service occupations, 30 out of each hundred being so employed. Employment opportunities will be available for 29 in commerce, 17 in clerical pursuits and 12 in trade occupations. Nine will be employed in manufacturing and mechanical pursuits, four in transportation and communication, and a smaller number in each of the other occupational divisions.

#### Trends in Specific Occupations

A detailed study of growth trends in 26 selected occupations in six occupational divisions is presented in Table XXI. The ratio represents the quotient of the number employed in an occupation in 1910 divided by the number of employees in the same occupation in 1930. The headings at the top of the four columns at the right are defined, for use in this study, as follows:

(1) Normal—Under this heading were placed those occupations whose increase in per cent was approximately proportional to the rate of increase of persons 10 years of age and over in population. Since the



population of Iowa increased 14 per cent during the twenty-year period, the growth ratio based on 1910 is 1.14. All occupations with increases of 1.1 to 1.19 were included in this group.

(2) Constant—Under this heading were grouped those occupations that had not decreased 10 per cent or increased enough to keep up with population growth.

(3) Aggressive—Those occupations in which the increase in the number employed exceeded the rate of increase of employable population.

(4) Regressive—Those occupations which showed a decrease in the number employed in excess of 10 per cent.

Of the 26 occupations studied, 12 made an aggressive growth of from 10 per cent to 140 per cent; three occupations made increases approximately proportional to population growth; the numbers employed in five occupations remained practically constant; and six occupations showed a decided regressive movement.

These figures are presented primarily to show that vocational education must deal with an ever-changing situation, and therefore educators must be cognizant of occupational changes and trends.

TABLE XXI. Trends in 26 Occupations in Iowa, 1910 to 1930

Occupation	Regressive (Ratio)	Constant (Ratio)	Normal (Ratio)	Aggressive (Ratio)
Farm laborers	.8			
Bakers				1.7
Blacksmiths	.4	1.0		
Boilermakers				
Brick and stone masons	.5			
Carpenters	.7			
Compositors, linotypers, and typesetters				1.2
Machinists and millwrights				1.3
Molders and foundries (iron)		1.0		
Painters and glaziers			1.1	
Plasterers			1.1	
Plumbers, gas and steam fitters				1.3
Clerks in stores		.9		
Commercial travellers			1.1	
Salesmen and saleswomen				2.0
Clergymen		1.0		
Dentists				1.4
Lawyers, judges, and justices		1.0		
Physicians and surgeons	.7			
Teachers				1.2
Barbers, hairdressers, and manicurists				1.5
Servants (domestic)	.7			
Waiters and waitresses				1.9
Bookkeepers, cashiers, and accountants				1.7
Clerks (except in stores)				2.4
Stenographers and typists				2.0

(Ratio of Population Over 10 Years of Age, 1930 to 1910 was 1.14.)

Age and Occupation

A study of figures presented in Table XXII and Figure 8 indicates that a smaller percentage of persons over ten years of age, both male



and female, are found in gainful occupations in Iowa than in the United States.

A group in the population whose employment showed a slight increase from 1880 to 1910 and has consistently decreased since that time, is its 10 to 15 year age group. Previous to 1880 when the population was largely rural, many boys and girls were enumerated as gainfully employed in agriculture. During the period of the next 30 years juvenile employment was stimulated by the entrance of children into industry. The agitation against child labor and the passage of compulsory school attendance laws have done much to decrease the percentage of children under 16 years of age in gainful employment.

A small percentage of boys and girls between the ages 10 and 18 years are employed. The percentage of girls is much smaller than the percentage of boys, and girls enter employment about two years later than boys. After the age 15 years for boys and 17 years for girls, employment increases rapidly. The largest percentage of females are employed in the 18 to 29 year age group with the maximum, 38.3 per cent, in the 20 to 24 year age group. The largest percentage of males are employed in the 20 to 60 year age group with the maximum, 97.8 per cent, falling in the 35 to 39 year age group.

A further analysis of employed children 10 to 15 years of age is made later in the study.

TABLE XXII. Percentage Distribution of Male and Female Workers by Age Groups, Iowa and United States, 1930

	United States		Iowa	
	Male	Female	Male	Female
All over 10 years.....	76.2	22.0	73.5	16.5
10 to 13.....	3.3	1.5	1.2	0.1
14.....	9.2	4.0	6.0	0.9
15.....	16.3	7.6	14.4	2.5
16.....	32.7	17.0	28.6	7.5
17.....	49.9	27.5	43.0	14.9
18 and 19.....	70.7	40.5	66.1	33.4
20 to 24.....	89.9	42.4	88.4	38.3
25 to 29.....	97.0	31.0	96.9	24.8
30 to 34.....	97.6	24.4	97.7	18.0
35 to 39.....	97.7	23.1	97.8	16.9
40 to 44.....	97.6	21.9	97.4	16.4
45 to 49.....	97.2	21.0	96.8	16.1
50 to 54.....	95.7	19.7	94.6	15.6
55 to 59.....	93.0	17.3	90.4	14.1
60 to 64.....	86.8	14.7	82.3	11.5
65 to 69.....	75.7	11.4	68.2	8.7
70 to 74.....	57.5	7.6	48.6	5.6
75 and over.....	32.3	4.0	23.3	2.4
Unknown.....	59.9	31.8	65.9	26.3

More than 21,000 children 16 and 17 years of age in Iowa were listed in the United States Census of 1930 as being gainfully employed—this constitutes nearly one-fourth of the total number in these age groups. In the light of present unemployment of adult workers, it would seem desirable to raise the compulsory school age to 18 years.

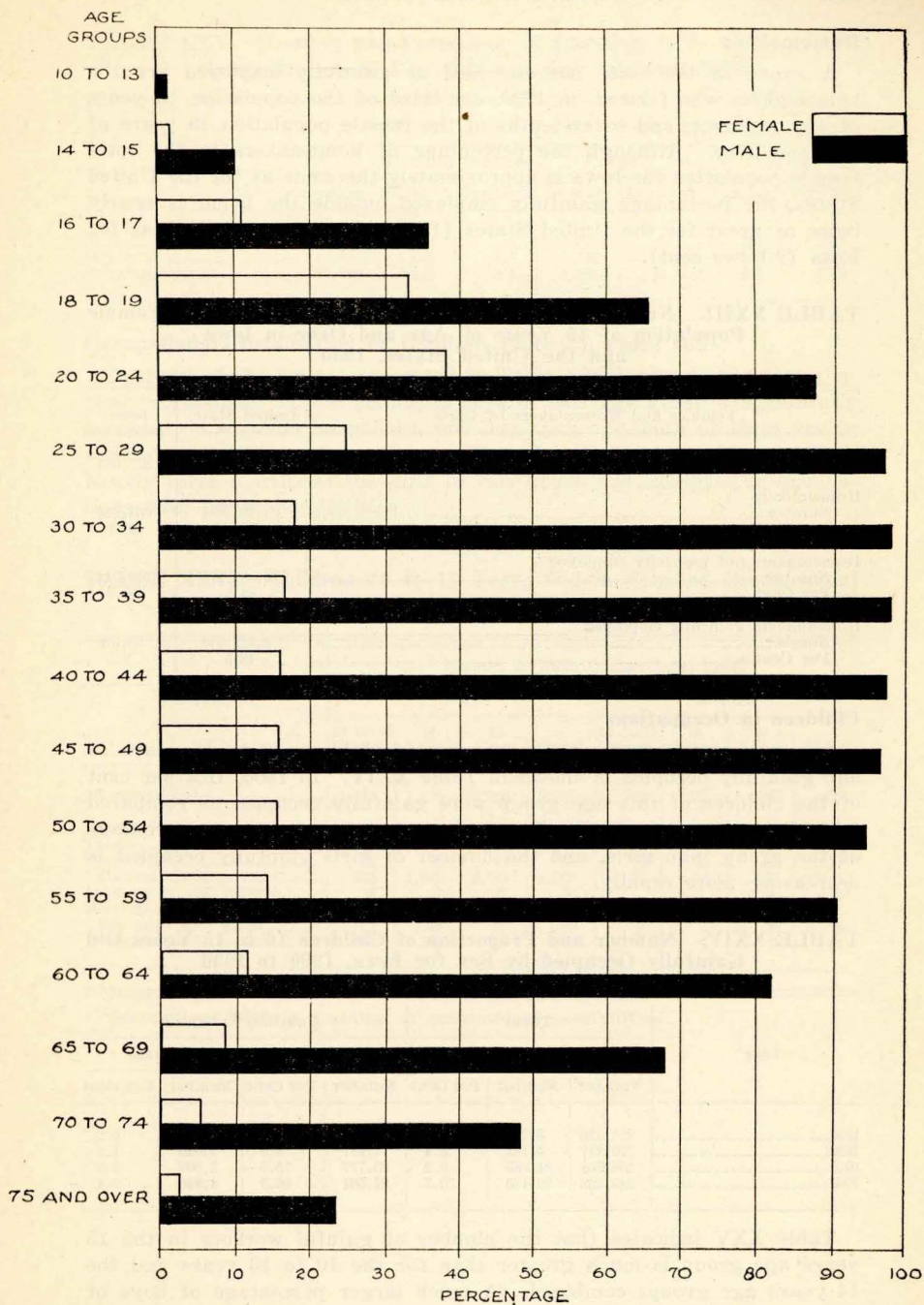


FIGURE 8. Comparison of Gainful Workers by Age Groups for Males and Females, Iowa, 1930.



### Homemakers

A group in the state not classified as gainfully employed are the homemakers who formed, in 1930, one-third of the population 15 years of age and over, and seven-tenths of the female population 15 years of age and over. Although the percentage of homemakers in the total female population for Iowa is approximately the same as for the United States, the percentage gainfully employed outside the home is nearly twice as great for the United States (18.5 per cent) as a whole as for Iowa (9.1 per cent).

**TABLE XXIII. Number and Percentage of Homemakers in the Female Population of 15 Years of Age and Over in Iowa and the United States, 1930**

Females and Homemakers by Class	United States	Iowa
Females.....	42,837,630	872,053
Homemakers		
Number.....	28,405,294	603,820
Per Cent.....	70.1	69.2
Homemakers not gainfully employed		
Number.....	24,481,778	548,744
Per Cent.....	81.5	90.9
Homemakers gainfully employed		
Number.....	3,923,516	55,516
Per Cent.....	18.5	9.1

### Children in Occupations

An encouraging trend in the number of children 10 to 15 years of age gainfully occupied is shown in Table XXIV. In 1900, 10.3 per cent of the children of this age group were gainfully occupied as compared with 2.4 per cent in 1930. Boys constitute a much larger percentage of the group than girls, and the number of girls gainfully occupied is decreasing more rapidly.

**TABLE XXIV. Number and Proportion of Children 10 to 15 Years Old Gainfully Occupied by Sex for Iowa, 1900 to 1930**

Year	Total			Gainfully Occupied			
	Total Number	Gainfully Occupied		Male		Female	
		Number	Per Cent	Number	Per Cent	Number	Per Cent
1930.....	281,116	6,741	2.4	5,852	4.1	889	0.6
1920.....	270,217	9,121	3.4	77,481	5.5	1,640	1.2
1910.....	256,708	24,385	9.2	20,777	15.5	3,608	2.7
1900.....	286,363	29,410	10.3	24,564	16.9	4,846	3.4

Table XXV indicates that the number of gainful workers in the 15 years age group is much greater than for the 10 to 13 years and the 14 years age groups combined. A much larger percentage of boys of these ages are gainfully employed than of girls of the same ages.

**TABLE XXV. Number and Proportion of Children 10 to 15 Years Old Gainfully Occupied by Sex and Age for Iowa, 1930**

Age	Total			Gainfully Occupied			
	Total Number	Gainfully Occupied		Male		Female	
		Number	Per Cent	Number	Per Cent	Number	Per Cent
10 to 13 years.....	187,938	1,231	.7	1,127	1.2	104	0.1
14 years.....	47,882	1,662	3.5	1,440	6.0	222	0.9
15 years.....	45,269	3,848	8.5	3,285	14.4	563	2.5

**Occupational Distribution of Children 10 to 15 Years Old**

A study of the figures presented in Table XXVI reveals the fact that nearly four-fifths of the employed boys of this age group are gainfully occupied on common labor jobs, and less than one-tenth of them are in occupations which offer opportunities for training and promotion. Nearly three-fourths of the girls of this group are employed in occupations with future possibilities.

**TABLE XXVI. Children 10 to 15 Years Old in Selected Occupational Levels by Sex and Age for Iowa, 1930**

Occupation	Number in Each Occupational Level							
	Male				Female			
	10 to 13 Years	14 Years	15 Years	Total	10 to 13 Years	14 Years	15 Years	Total
All occupations.....	1,111	1,429	3,240	5,780	103	217	555	875
Apprentices.....	6	8	23	37			2	2
Trade <sup>1</sup> .....	85	110	251	446	52	169	430	651
Operatives.....	7	16	57	80	3	12	42	57
Laborers.....	575	1,049	2,644	4,268	38	34	71	143
Attendants and helpers.....	18	17	21	56			4	5
Messenger, errand and office boys and girls.....	7	16	67	80	2	1	3	5
Other trades <sup>2</sup> .....	413	213	187	813	8	1	3	12

<sup>1</sup>Occupations with training and promotion possibilities.

<sup>2</sup>Occupations without training or promotional possibilities.



## SUMMARY

Although Iowa is predominantly an agricultural state, there is a pronounced shift to other occupational fields.

There has been a marked increase in the number of women employed in commercial pursuits.

Gainful employment of males in manufacturing and mechanical pursuits and in trade has shown considerable increase since 1910.

A decreasing percentage of boys and girls between the ages of 10 to 15 years are gainfully employed.

A considerable number of children of compulsory school age are gainfully employed in Iowa.

The major opportunities for employment of females are found in domestic and personal service, commerce and the professions.

The major opportunities for employment of males are found in agriculture, manufacturing and mechanical pursuits and commerce.

Homemakers constitute the largest group of gainful workers in Iowa.

The majority of children 10 to 15 years of age are employed in occupations where little or no opportunity for training or promotion is offered.

Occupational trends and occupational distribution are vital factors in vocational guidance and training.

Nearly 25 per cent of the total number of children 16 and 17 years of age were listed as gainfully employed by the 1930 census.

### Implications for Vocational Education

1. From the standpoint of numbers alone it would seem that educational service through vocational training should be provided for homemakers, workers in agriculture, employees in trades and industry and in commerce.

2. There is a need for a more strict enforcement of the compulsory attendance and child labor laws. (More than 6,000 children under 16 years of age were in gainful employment in Iowa in 1930.)

3. The type of employment of young workers indicates the need for a broader program of preparatory training in Iowa.

4. An upgrading program to assure promotion, or a retraining program for another occupation is needed for men 50 years of age and over.

5. In the light of the unemployment of adult workers, the compulsory school age should be raised to 18 years and a functioning program of vocational education developed to suit the needs of the group.

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