DEPARTMENT OF THE INTERIOR
BUREAU OF EDUCATION

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EDUCATIONAL CONDITIONS IN ARIZONA

REPORT OF A SURVEY BY THE UNITED STATES BUREAU OF EDUCATION

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DEPARTMENT OF THE INTERIOR,
BUREAU OF EDUCATION,
Washington, October 10, 1917.

SIR: I am transmitting herewith report of a survey of the schools of the State of Arizona, made under my direction at the request of the State Department of Education of Arizona, as set forth in the preface to the report. I recommend that this report be published as a bulletin of the Bureau of Education, for distribution among school officers and citizens of the State of Arizona and among students of education throughout the country.

Respectfully submitted.

P. P. CLAXTON,
Commissioner.

The SECRETARY OF THE INTERIOR.

PREFACE.

At a meeting of the Arizona School Officials' Association held in April, 1915, a resolution was passed instructing the president of the association to appoint a committee to arrange for an educational survey of the State. President Rufus B. von KleinSmid, of the State university, was then president of the association. In accordance with these instructions he appointed a committee composed of the following: A. O. Neal, professor of school administration at the State university, chairman; I Colodny, editor of the Arizona Teacher; Supts. G. C. Cornelius, of Winslow; W. P. Bland, of Globe; and C. F. Philbrook of Bisbee; H. H. Foster, assistant professor of philosophy and education, of the State university; and C. O. Case, State superintendent of public instruction. The committee, through its chairman and secretary, corresponded with the Commissioner of Education, requesting that the Bureau of Education make the survey. In December, 1915, the State superintendent of public instruction, on behalf of the State department of education, officially requested the Bureau of Education to undertake the work. Arrangements were completed and the actual survey begun in the fall of 1916.

The Commissioner of Education assigned to this work Mr. A. C. Monahan, specialist in rural school administration, under whose direction most of the work was done and the report prepared; Mr. J. C. Muerman, specialist in rural education; Mrs. Katherine M. Cook, specialist in rural education; Mr. W. S. Deffenbaugh, specialist in school administration, and Dr. F. B. Dresslar, specialist in school sanitation and hygiene. These five members of the bureau staff spent in the State time equivalent to that of one person for approximately 30 weeks. They visited schools in 12 of the 14 counties, and in 22 of the 24 cities employing city superintendents. Visits of from 20 minutes to an hour were made to about 200 city school-teachers, and at least 100 visits of the same length were made to rural school-teachers. In addition a large number of visits were made to other schools for the purpose of investigating general conditions—the location of buildings, sites, grounds, equipment, etc. The equivalent of two weeks' time was spent by one member of the staff in the office of the State department of education making a thorough examination of its records and reports, financial accounts, and general methods of conducting business.

In addition to this work, J. C. Muerman, representing the bureau, spent several weeks in Arizona the previous year in visiting schools in three counties.

The survey of the two State normal schools was made by Mr. H. W. Foght, of the bureau staff, who spent three weeks at Flagstaff and Tempe. Visits were made also to both normal schools by at least two other members of the bureau staff. The survey of the State

university was made by Dr. Samuel P. Capen, specialist in higher education of the bureau, assisted by President Livingston Farrand, of the University of Colorado.

Several months were spent by members of the survey staff in studying official reports of State and county school officers, records of the State treasurer, State board of control, county treasurers, and other State and local officials. Questionnaires were sent to all teachers in the State for personal data relative to their education, training, experience, salary, etc. Returns were received from approximately 81 per cent. Approximately the same proportion of returns was received from a questionnaire sent to officials concerning the condition of school buildings. Several hundred photographs of school buildings were taken by members of the bureau staff or collected from the school authorities.

Much information was obtained from returns received from a general letter sent to over 500 prominent persons in the State engaged in various occupations. Their names were taken from the State directory. They were asked to express their opinions relative to the strength and weaknesses of the schools. A large number responded, and their opinions were given due consideration in the preparation of the report. All teachers and superintendents in the State were also invited to express their opinions frankly and freely, with the assurance that whatever they might submit would be treated impersonally. A large amount of very valuable information was obtained from them.

In addition to the above, valuable information was obtained from State Supt. C. O. Case, who extended to the members of the bureau staff every possible courtesy and assistance in the survey; also from President Rufus B. von KleinSmid, of the State university; A. O. Neal, then State inspector of high schools for the university; H. H. Foster, assistant professor of philosophy and education; I. Colodny; and other members of the university faculty.

Ex-State Supt. Robert L. Long, who was living in Washington during the fall of 1916 and winter of 1917 while the report was undergoing preparation, was called into frequent consultation and gave valuable suggestions.

The part of this report included in Chapter II, sections 1 to 3, inclusive, was completed early in January, 1917. Mimeograph copies were made of it and also of the bureau's recommendations given on pages 158 to 163, inclusive. These copies were sent to all State officers, including members of the State legislature, to all school superintendents and boards of education, and to others interested in educational work. Copies were sent also to all of the prominent newspapers of the State. This was done at the request of the committee, so that the information would be available for the State legislature.

EDUCATIONAL CONDITIONS IN ARIZONA.

Chapter I.

THE STATE OF ARIZONA AND ITS EDUCATIONAL SYSTEM.

Section 1.—THE STATE OF ARIZONA.

Arizona was organized as a Territory in 1863 and became a State February 14, 1912. It is fifth in size among the States of the Union and forty-sixth in population. It has an area of 113,810 square miles, or approximately 72,838,000 acres. In 1910, according to the Federal census, 1.7 per cent of the total area was in farms, but only four-tenths of 1 per cent was in improved farm land. There has been a marked increase in both since that time. In 1910, 320,000 acres were irrigated, but projects were under way which were capable of furnishing water for 950,000 acres. Most of them are now completed. Farming, in the irrigated valleys, and stockraising are important industries. The State is rich in minerals, especially copper. Mining is the most important industry. The altitude varies from 250 feet above sea level in the southwest to from 4,000 to 8,000 feet on the high plateau in the north, with mountain peaks over 12,000 feet in height. The climate is varied. In the southwest it is semitropical, with mild, warm winters and long hot summers. The rainfall is from 1 to 10 inches. This portion raises citrus, figs, oranges, nuts, and other products peculiar to semitropical regions. In the north the winters are severe and the summers cool and pleasant; cattle and sheep raising being the principal industry. Large areas in this section are included in the National Forest Reserve.

(A) POPULATION.

The State is sparsely settled. The population, however, is increasing very rapidly; the percentage of increase from 1900 to 1910 was three times as large as that for the United States as a whole, and was exceeded by only five other States in the Union. The school population increased approximately 22.5 per cent from 1910 to 1916. It is probable that the total population increased in about the same ratio.

TABLE 1.—*Increase in population.*

Year.	Population.	Per cent increase.	Per cent of increase for United States.	Per cent of population.			
				Urban.[1]		Rural.	
				United States.	Arizona.	United States.	Arizona.
1870	9,658						
1880	40,440	318.7	30.1	29.5	17.3	70.5	82.7
1890	[2] 88,243	118.2	25.5	36.1	9.4	63.9	90.6
1900	[3] 122,931	39.3	20.7	40.5	15.9	59.5	84.1
1910	[4] 204,354	66.2	21.0	46.3	31.0	53.7	69.0

[1] Population in cities and other incorporated places of 2,500 or over.
[2] 34 per cent are Indians.
[3] 21.5 per cent are Indians.
[4] 14.3 per cent are Indians.

In 1910 there were nine cities having a population of 2,500 or over. Only two of them—Phoenix and Tucson—had over 10,000 inhabitants. There were in addition 13 incorporated cities and towns of less than 2,500 having a total population of 16,406. There were also 36 towns and villages not incorporated, with a population of 13,361, or 6.5 per cent of the total. These cities, towns, and villages contained 46 per cent of the total population of the State in 1910, and 54 per cent lived in the open country. The bulk of the open-country population is in the Salt River Valley, near Phoenix, on the dry farms of Cochise County, and in the Yuma Valley.

The large per cent of population in small cities and in towns and villages, and the fact that most of the open-country population is in a few restricted areas, make it easier to maintain schools for all the children than it is in some other new States in which the population is spread more evenly over large areas.

(B) RACIAL COMPOSITION OF THE POPULATION.

Arizona is populated largely by persons who have migrated from other States and countries. Only 24 per cent of the white population were born in the State. Of the total population 40 per cent are native whites of native parentage,[1] 21 per cent native whites of foreign or mixed parentage, 23 per cent foreign-born whites, and 14 per cent Indians. There is a slightly higher percentage of native whites of native parentage in the urban than in the rural population. Of the foreign born nearly 63 per cent are Mexican; 7.5 per cent English; 19 per cent German, Austrian, Italian, and Irish in almost equal portion; and 11 per cent are from all other countries. Of the total white stock of foreign origin, 57.4 per cent are Mexican.[2] The high percentage has probably been increased in the last five years by

[1] By "native" is meant born in the United States.
[2] These data are from the 1910 census.

the unsettled conditions in Mexico and the intense activity in copper mining in Arizona. The demand for laborers in the mines and smelters has brought into the State a large number of Mexicans, whose tendency is to segregate more or less into colonies and continue to follow their own customs and speak their own language. Arizona has a unique and difficult problem in providing for the Americanization of these Mexicans and for the education of their children.

(C) SCHOOL ATTENDANCE AND ILLITERACY.

The percentage of illiteracy as compared with the United States as a whole is very high. This, as well as the fact that it is far higher in rural than in urban communities, is shown in the accompanying table. That this condition is not entirely due to a lack of schools in Arizona or to the character of the work done by the schools is indicated by the fact that the rate among foreigners (31.5 per cent) is far higher than among natives. However, the percentage of illiteracy among persons between 10 and 20 years (18) is four times as high as for the United States as a whole and indicates that Arizona schools are not reaching all children as they should.

TABLE 2.—*Illiterates 10 years of age and over.*

	Total.	Urban.	Rural.	United States.
Total	20.9	9.9	26.1	7.7
Native whites	4.2	2.6	5.1	3.0
Of native parentage	2.3	1.0	2.9	3.7
Of foreign or mixed parentage	8.4	5.5	10.3	1.1
Foreign-born	31.5	22.4	36.7	12.7

Illiterates 10 to 20 years of age: For Arizona, 18 per cent; United States, 4.5 per cent.

TABLE 3.—*Percentages of children of specified ages in Arizona reported as enrolled in school in 1910.*

Ages.[1]	United States.	Arizona.		
		All children.	Urban children.	Rural children.
	Per cent.	*Per cent.*	*Per cent.*	*Per cent.*
6–9	73.5	56.2	.....	.....
10–14	88.2	77.6	.....	.....
15–17	81.4	67.2	76.9	63.4
18–20	51.2	50.9	.....	.....
15–20	15.2	13.0	.....	.....
6–20	32.9	30.8	30.0	310.
	62.0	53.4	.....	.....

[1] Inclusive.

The figures given in Table 3 show that the per cent of children of all school ages enrolled in school in 1910 was much smaller in Arizona than in the country as a whole. It was less than for any other State in the mountain group. The high rate of illiteracy and the low rate of school attendance are due chiefly to the presence of the large Mexican population, native and foreign-born. The adaptation of the schools to the needs of these people, both children and adults, and inducing them to take advantage of the opportunities offered, constitute a very important and difficult part of the problem of education in Arizona. Up to the present time few night schools and no vocational schools have been established.

(D) INDUSTRIES.

Arizona is very rich in mineral deposits, particularly in copper, gold, and silver. Mining is therefore the most important industry. Over 18,000 persons, equal to nearly 25 per cent of the adult males in the State, were engaged in the mining industries in 1910, while only about 7,000 were engaged in manufacturing. The value of the output of minerals even of copper alone is far in excess of that of any other industry. The manufacturing and mining industries are closely related. The smelting and refining of copper is the largest single manufacturing industry in the State and reported 81.7 per cent of the total value of manufactured products in 1909. It is also the most important from the standpoint of the number of persons employed. Railroad construction and repair shops are second in importance.

Agriculture is the most stable of the important industries, since those engaged in it are most apt to establish permanent homes. In 1910 but 1.7 per cent of the entire area was in farms, of which 52.5 per cent were irrigated. Only 9.3 per cent of the total number of farms were operated by tenants and but 12 per cent were mortgaged. The farm population therefore is made up largely of owners, the average value of whose farms is $8,142. It is socially and economically of a relatively high class, able to pay for educational advantages and to use them freely. This is probably not equally true of the portion of the population engaged in mining, which is less settled and includes a higher percentage of foreigners.

Since 1910 large tracts of land have been brought under irrigation and cultivation, particularly under the Salt River and Laguna projects. The value of farm products and the number of people engaged in agriculture have materially increased. Cotton and citrus fruits are being raised successfully under these projects, and continued growth of the agricultural industries may be expected. The industrial situation as it is, and probably will continue to be for the

immediate future, indicates that people will not be concentrated in large cities to any great extent but will be grouped in small towns and villages and on the farms. Stockraising will doubtless continue an important industry, and some of the schools in the regions devoted to it must be small and isolated.

Section 2.—HISTORY OF EDUCATION IN ARIZONA.[1]

(Digest from *Establishment of the Arizona School System*, by Samuel Pressly McCrea, A. M.)

The very early educational history of Arizona is marked only by the establishment of mission schools, about the year 1687, for the purpose of teaching both religion and secular knowledge. After the abandonment of the missions in 1828, and up to the time of the Gadsden purchase in 1853, ignorance and savagery held sway. Not until the Territory had established a capital and a legislative body did the subject of education again receive attention. The early Territorial history is marked by the prolonged struggle between the Indians and hardy pioneers, and there were few serious attempts at permanent settlement.

The educational history of the Territory forms five rather distinct periods of progress, the first beginning with the organization of the Territory in 1864.

(A) FIRST PERIOD, 1864–1869.

A few private schools were established during this period, but the time had not yet arrived for public schools. The period was marked by continued fighting with the Apaches, in which the settlers were almost without military aid, since the United States forces were engaged in the Civil War. Mining and freighting were the only industries pursued by the whites, but farming was done by the Pima and Maricopa Indians on the rich lands of their reservations on the Gila River and near the old town of Tucson. The first governor in his first message to the assembly which met in September, 1864, expressed the belief that an effort should be made to establish common and high schools and a university, and that part of the funds raised by taxation should be devoted to schools. The joint committee on education of the two houses considered the matter carefully and reported that the limited population and the unsettled condition of the Territory did not justify the cost of a school system. However, they approved the governor's suggestion that $250 be granted the San Xavier Mission School "as a fitting compliment to the first school in Arizona," and they added the recommendation

[1] A more complete history of education in Arizona is published in a bulletin of the Bureau of Education for 1918.

that $250 be granted the county-seat towns of the four counties and $500 to Tucson, provided that these towns raise an equal amount before the State money became available. These provisions were enacted into law, but the towns failed to take advantage of them. The assembly also adopted a law which provided for founding a university and for creating a university and common-school fund to be derived from the proceeds of public-land sales.

Further legislation enacted during the period provided that boards of supervisors could establish schools in settlements of 100 people upon petition and could levy a tax of not more than one-half of 1 per cent upon the district for their support. The administration of this law rested upon the board of supervisors and the county superintendent, who was to be elected by the people, but whose compensation should be fixed by the board of supervisors. Nothing was accomplished by these laws, although a school conducted at Tucson for six months in 1869 has been classed by some authorities as a public school. Fifty-five Mexican boys were enrolled.

(B) THE SECOND PERIOD, 1869–1877.

This period is of marked educational significance. The Hon. Anson P. Safford was confirmed as governor in April, 1869, and served throughout the period. He devoted his energies to an attempt to solve the educational problem for Arizona and is known as the "father of the public school system." Under his leadership an effective law was adopted; revenues were accumulated for schools; books and teachers were found; buildings were leased or built; and schools set in operation in every community of any size. During this period Gen. Crook succeeded in subduing the Apaches and trained them in the peaceful art of farming. Railroads came nearer, and immigration began in earnest. Agriculture and stock raising became profitable, the population more stable, and better industrial conditions led to greater willingness to provide revenue for schools. The two chief communities built commodious school buildings by popular subscription. Gov. Safford, by personal influence and the promise of high salaries and long terms, induced trained teachers to come into the Territory to fill the positions.

Gov. Safford's educational policies.—Gov. Safford, like the preceding governors, was ex officio superintendent of schools. He believed education was second in importance only to the all-absorbing Indian question. Through his influence and untiring efforts the school laws of 1871, 1873, and 1875 were enacted. The law of 1871 placed much power in the hands of the governor as ex officio superintendent of of public instruction and provided a Territorial and county tax and an ex officio board of education. It also provided for a uniform series

of textbooks. The State superintendent was empowered by the law to appoint probate judges who were ex officio county superintendents and had general control of school affairs in the counties. The governor received $500 as superintendent of public instruction for actual traveling expenses while consulting with school officers and lecturing on education.

After the adjournment of the assembly the governor entered upon a wonderful educational crusade. The first year was devoted to arousing interest and collecting funds for school purposes. The first school was established under the new law in Tucson in March, 1871. It enrolled 138 boys, most of whom were Mexicans. Gov. Safford donated the books. So great was the interest aroused in education by the governor's campaign, assisted by the probate judges whom he selected with a view to helping in this work, that before the assembly of 1873 convened, sentiment had grown very strong and members came to the assembly generally instructed to do everything in their power to strengthen the school system. The law of 1878, however, did not follow out the governor's suggestions entirely, and while resulting in increased Territorial and county taxation, repealed the section which provided for the apportionment of Territorial money on attendance basis and made no provision for the traveling expenses of the ex officio State superintendent during the biennium.

During 1873 Gov. Safford succeeded in bringing the first experienced teachers into the Territory. Two women came at his invitation from California, and after a dangerous journey across the plains they opened school in Tucson. The governor also brought Moses Sherman, a trained teacher from Vermont, to act as principal of the public school in Prescott. Schools were also maintained in Safford, Florence, Ehrenberg, Yuman, and Phoenix. During this year also the first statistical report was made to the United States Commissioner of Education.

With the convening of the legislature in 1875 Gov. Safford prepared to urge the enactment of a new law to remedy the defects which during his four years of administration of the schools he had found most serious. His most important recommendations concerned the enactment of laws for compulsory attendance, for uniform textbooks, and for the distribution of funds on an attendance basis. All of these were effected, and the $1,000 expense fund of the State superintendent for the biennium was restored.

General conditions influencing educational growth.—The remaining years of the period of Gov. Safford's administration were characterized by rapid increase in population and wealth and consequent growth of schools. The discovery of rich mines brought many prospectors with their families. Stockmen brought in large herds of

sheep and cattle; important stage lines, transportation and telegraph lines connected the Territory with California on the west and with New Mexico on the east. The population increased from 10,000 to 30,000 in the two years preceding 1876. Farming received a strong impetus because of the establishment of Mormon colonies and the introduction of irrigation. The population began to lose its nomadic character and to take on steady and settled habits. The people seemed more and more willing to spend money for the education of their children.

The ninth assembly and Gov. Safford's term closed an era in the history of the Territory. The capital, after being 10 years in Tucson, was removed to Prescott, owing largely to the rapid growth of the northern part of the Territory. The number of Americans was constantly increasing, and 1877 practically marks the end of Mexican representatives in the assembly. At the close of this period the governor could point to a score of teachers employed and as many schoolrooms erected by voluntary contributions of the people. Since 1871 more than $120,000 had been raised for school purposes and the Territory was free from debt. Through the public schools Gov. Safford began the work of making good Americans out of some very unpromising material.

In April, 1877, J. P. Hoyt became acting governor. Gov. Hoyt's interests were elsewhere than in the schools, and his report, made to the Commissioner of Education in 1877, shows marked deterioration in many particulars.

(C) THIRD PERIOD, 1878–1884.

In the beginning of the third period the educational work was delegated to a superintendent of public instruction. The office was held during this period by the two pioneer principals—Sherman, of Prescott, and Horton, of Tucson. Conditions became constantly more and more favorable to settled life for the people. Immigration was increasing, and the majority of the inhabitants were beginning to think of Arizona as a permanent home. Industrial conditions had never been so promising. Rich mines were found, and large bodies of land were brought into cultivation. Great railroads crossed the Territory through the north and south, and new towns sprang into existence. The markets furnished for Arizona products by these roads assured the permanent prosperity of the Territory.

The progress of education during the period closely paralleled the material development of the Territory. In June, 1878, John C. Fremont was confirmed as governor of Arizona. He had neither time nor inclination to continue the work of an educational leader

so ably begun by Gov. Safford, and delegated his duties as ex officio superintendent to M. H. Sherman, principal of the Prescott schools.

Law of 1879.—The necessity for more school revenue was made apparent by the short term of school held during 1878, and the assembly in 1879 enacted a new school law. The board of supervisors were required to levy a school tax of not less than 50 cents nor more than 80 cents on each $100 of taxable property. The position of State superintendent of public instruction was created and the governor was authorized to appoint a temporary superintendent, but the office became elective in 1880. No educational qualifications were required; the salary was $1,000, which was double that paid the Territorial auditor or treasurer. The law also provided for the issue of certificates without examination to qualified teachers from other States; in this way it was hoped a greater number of trained teachers would be secured. The office of probate judge was made elective in 1880 and thereafter. For the additional ex officio duties of the county superintendent the judges received a compensation of $250, but no change of duties was required; these remained largely clerical. The assembly visited Prof. Sherman's school, and immediately after the council confirmed his appointment as superintendent of public instruction.

During 1879 and 1880 Phoenix and Prescott improved their school buildings, bringing up the total cost of school buildings in these towns to nearly $50,000. The shortness of the terms in many schools interfered with their usefulness. The terms seldom exceeded 100 days, were as low as 40 in the country schools, and varied from 150 to 200 days in the towns. The superintendent reports that lack of funds in the rural districts and too frequent changes of teachers and of county superintendents were the greatest obstacles in the way of progress of the public schools. Toward the close of 1880 Mr. Sherman was elected by the people for another term as State superintendent of public instruction.

The legislature of 1881.—When the assembly met in 1881 the message of the governor was silent on the question of education. During the session the salaries of the ex officio county superintendents were raised in amounts varying from $250 to $1,000. That of the State superintendent was advanced to $2,000.

Many States were benefiting by land endowments for their universities, and Arizona was anxious to share in the bounty. The legislature therefore called on Congress to grant four townships of land to Arizona for the endowment of a Territorial university. Supt. Sherman's most notable service to education was his selection of the two townships donated by the Congress of the United States; some very valuable timber lands were located.

In 1881 the Territorial board of education adopted uniform textbooks. The laws upon the subject appear not to have been enforced. This facilitated the work of the teachers and added to the progress of the pupils. Arizona apparently has always been committed to the plan of uniform textbooks for the State. It is still in operation. In the fall of 1882, before the completion of his third term, Supt. Sherman retired and was placed in command of the Territorial militia to suppress the Apaches, who were making renewed outbreaks. Principal W. B. Horton, of the Tucson public schools, was elected superintendent of public instruction and gave to the conduct of the office all of his time and energy.

School law of 1883.—At the legislative session of 1883 the school law of 1879 was amended through the efforts of Supt. Horton. Among the important additions were those relating to teachers' institutes, the extension to women of the right to vote for school trustees, the creation of new districts on petition of five taxpayers, a plan for providing school libraries, a provision that textbooks should not be adopted without due advertising for bids, the creation of a Territorial school fund from escheated estate lands or profits of lands or tenements held as escheats, and the increase of the county funds by fines, forfeitures, and gambling licenses. Another important feature was the allowance of $500 to the State superintendent for traveling expenses and a provision requiring him to visit each county in the Territory for the purpose of examining schools and consulting with school officials.

Supt. Horton's administration.—Under Supt. Horton the first complete reports were made to the United States Bureau of Education. From 1884 progress was rapid. More children were enrolled, attendance was increased, more and better qualified teachers were employed, the buildings were improved, and the schools were liberally supported. So many teachers were attracted by higher salaries and the opportunities of a new country that the standard of scholarship required for certification was raised throughout the Territory. There was a growing disposition on the part of trustees to secure well-qualified teachers and to build attractive and comfortable school buildings.

Supt. Horton was very active in visiting and inspecting the schools of Arizona. He recommended that competent county superintendents be employed full time. He advocated the payment of expenses of teachers to attend institutes, which so far had not been held because of the difficulty of overcoming distances and expense. He was far-sighted in school interests beyond the appreciation of the people. Their earnestness and zeal, however, impressed him deeply and induced him to devote himself tirelessly to his work.

(D) FOURTH PERIOD, 1885–1888.

By 1885 the school system of Arizona was ready to begin development along broader lines. There were nearly 10,000 children in the Territory, of whom about one-third were in regular attendance. There were now in Arizona 123 schools, with 143 teachers, and school property valued at $153,000. With this equipment and the experience derived from 14 years' efforts to found schools, it seemed that the time had come to mold the school law into more permanent form and to add to the school system higher institutions of learning. The Territory was not lacking in financial ability to take a step forward in education, and it had a population of nearly 50,000. Besides the two great railroads binding it to the East and West, a branch road linked it to the Gulf of California. Mining, farming, and stock raising were all making great progress, and the Territory enjoyed a degree of prosperity far greater than that of the country as a whole. Under such conditions the assembly convened in 1885. In work for education, no other assembly bears comparison with it except that of 1881, which brought the school system into existence and gave it definite form.

The governor's message.—Gov. Tritle, in his final message, joined in the recommendations of the retiring superintendent for (1) the separation of the office of county superintendent from that of probate judge; (2) limiting the power of school trustees, and their selection at a separate election; and (3) an improvement in the manner of levying county school taxes by boards of supervisors. The governor asserted that the question of the disposition of the school and university lands was of prime importance. He set forth the location of the 72 sections of university lands made in 1882, pointed out losses sustained by the entry of settlers through failure of the General Land Office to notify the local land offices of selections made, and the necessity of replacing these before available lands were taken up or denuded of their timber. He recommended the designation of the superintendent of public instruction as university land agent, and asked an appropriation to cover the expenses of inspecting public lands and taking such steps as would be found necessary for their preservation. He was undecided as to the propriety of creating a university and left the matter to the assembly. He asked that Congress be memorialized to permit the Territory to sell its school lands. To most of these recommendations regarding the public lands the assembly readily responded.

The assembly of 1885.—During the session of 1885 the school law was again subjected to revision. It was not possible to effect the separation of the office of county superintendent from that of probate judge, but that officer was required to visit each school in his

county once a year, and the compensation was fixed at from $300 to $600; an allowance was made in addition for postage and expressage. Separate elections were required for school trustees and their powers were somewhat curtailed. The estimate of the county superintendent was made the basis of the county school tax, and the maximum was fixed at 75 cents on each $100. This idea is one of the excellent policies urged by the early State school officials and it still survives in Arizona.

In order to raise the standard of scholarship among teachers and to attract superior teachers, a Territorial board of examiners was created to supervise the several county boards in the issuance of certificates. Credentials upon which certificates were issued and the branches upon which teachers were examined were definitely fixed by law. Such matters had been left too largely to local boards of examiners in the past. The Territorial school tax was reduced from 80 cents to 3 cents on each $100. It was felt that the counties should bear more of the school burdens and that district taxes might be utilized to lengthen the term. The idea of large taxing units is another school policy advocated early in the State's history which still survives. The old provisions against sectarian teaching were reenacted, and instruction in citizenship was required. During the session the governor by special message denied the right of the legislative body to provide for the election of the State superintendent of public instruction, but as no court decision had been made on the matter the governor solved the difficulty by appointing Robert L. Long superintendent of public instruction for the term of two years, a position to which he had been chosen by a vote of the people of the Territory. The council confirmed the appointment, and the assembly amended the law to meet the governor's views.

Though the new school law was of great value, the acts creating the university and the normal school were of equal importance. These institutions were not created as the result of a popular demand alone, but were rather of a legislative combination. The Prescott people were anxious to retain the capital, and Phoenix and Tucson also wanted it. To satisfy all parties it was agreed that Prescott retain the capital, that Tucson become the seat of the university, and that Tempe, near Phoenix, be chosen as the location of the normal school.

In framing the law creating a normal school, the legislators were evidently in doubt as to the exact nature of the institution. It had features of a normal school and of an agricultural college. The offer by the Tempe people of a site was accepted and the assembly provided that the section of school land lying within the limits of the town, "the best in the Territory," should be set aside "to be used as a farm for said normal school." Five thousand dollars was ap-

propriated for a building, and $3,500 for the support of the school during the years 1885 and 1886. An annual tax of 2½ cents on $100 of assessed valuation provided for maintenance in the future. The school was also endowed with 20 sections of school land belonging to the State of Arizona, selected from unappropriated land in the Salt River Valley. The building was completed and school opened in February, 1886, with 33 pupils in attendance.

The work of Supt. Long.—The new State superintendent of public instruction, Robert Long, had been principal of public schools in Phoenix and served as probate judge and county superintendent in Gila County. The county superintendents and the new territorial board of examiners were appointed by the State superintendent, and through them and the Territorial board of education Supt. Long was able to accomplish much for the schools. The rules for certification were radically changed and higher standards were imposed. No Territorial diplomas were granted during Supt. Long's term and many old ones were revoked. A uniform course of study was prepared and adopted for the Territory. The elementary course covered a period of seven years, the advanced course a period of two years for the schools in the large towns, which were making an effort to begin high-school work. This arrangement for including advanced grades still survives in Arizona in 1916. No changes were made in textbooks except by the addition of several books on physiology, to meet the congressional requirements for teaching the evil effects of alcohol and narcotics. During 1885 and 1886, 21 new districts were organized and 31 schoolhouses were built, and there were many more school libraries. But the school term was shortened nearly 20 days. The quality of teachers was very much improved. The number of teachers holding first-grade certificates in 1886 was 61 more than were needed in grammar schools. About half of the primary schools were in charge of scholarly teachers.

The new provisions for revenue were not as successful as had been expected. Some boards of supervisors disregarded the county superintendent's estimate and made the minimum levy; in other cases the superintendents failed to make the estimate or made an erroneous one. To prevent the recurrence of this condition, Supt. Long recommended that the minimum county tax be increased by 10 cents on each $100. However, the money during these years was carefully expended, and instruction was provided for 1,100 additional pupils. Supt. Long visited each county one or more times during each year of his administration.

Administration of Supt. Strauss.—At the close of one term Mr. Long retired, and Charles M. Strauss was appointed superintendent of public instruction in 1877. Mr. Strauss was not a teacher, as all

the former superintendents had been, but he was a man of ability and took interest in his duties.

The new school law of 1887.—A general revision of all the laws was recommended by the governor. The assembly agreed and the governor appointed a commission of the ablest lawyers in the Territory for this work. In the main the school law of 1885 was reenacted with some good and a few objectionable changes. One of the best provisions was for the election of but one of the district trustees each year, and a term of three years, giving some continuity to the board of trustees. All efforts to provide supervision, either by the Territory or by counties, were abandoned. An attempt was made to abolish the office of State superintendent of public instruction, and the compromise by which it was retained, stripped of all office and travel allowance, cut off every possibility of effective supervision. By the provisions of this law ex officio county superintendents were no longer required to visit schools, and their compensation was fixed at $400 per year. A maximum salary for teachers was fixed at $125 per month for those holding first grade and $90 for those holding second grade certificates. The effect of these laws was to give State and county superintendents consideration as clerical officers only.

After the adjournment of the legislature in 1887 the new board of education, none of whom were teachers, proceeded to amend the rules and regulations for the government of the schools, not always for the best. A rule practically abolishing corporal punishment was adopted, and the course of study was dropped from the requirements. Not until 1899 was another prepared.

In July of this year (1887) the first train reached Phoenix over a branch of the Southern Pacific Railroad. This opened up the center of the Territory to settlement at a rate never before possible. The next assembly removed the capital to that place, where it is likely to be permanently located. In 1887 also the first class graduated from the Territorial normal school at Tempe. The school has since made a large place for itself in the educational work of the Territory. It has been liberally supported and its funds have been carefully expended. The standards have been raised, a commodious building erected, and its popularity and usefulness increased.

(E) FIFTH PERIOD—1889 TO STATEHOOD (1912).

From the close of the preceding period to the admission of Arizona as a State the educational system underwent a gradual evolution. The reports of the superintendents in some instances advocated reforms which were in advance of administrative practice in Arizona and many other States. For example, the State superintendent in

his report of 1894–95 recommends the requirement of educational qualifications for county school superintendents and the consolidation of small school districts when feasible. He mentions with regret the inability of school directors to keep accurate accounts, and deplores their general unfitness properly to conduct the duties of their offices. To remedy this and to increase the efficiency of the schools he advocates a more centralized county school system. This was many years in advance of the general agitation for the county unit system which later swept over the country.

State department.—During this period also the offices of State superintendent of public instruction and county superintendent of schools gained in educational opportunity and ability to assume responsibility which, though legally given, had hitherto remained dormant. In this evolution there were frequent backward steps. In 1901 the salary of the State superintendent was raised from $1,200 per year, from which the State superintendent paid office rent, to $1,800, and again in 1907 to $2,000, with office room furnished at the capitol building. The law, however, did not require visits to the public schools in the different counties but "communication by mail" with the county superintendents; no traveling allowance was provided. In September of 1899 a course of study for all the public schools in the State was prepared, and 1,500 copies were distributed among the schools. Mr. Robert L. Long, whose first successful administration as State superintendent has been discussed, again assumed the office and served from 1906 to 1909.

The following gives the names, manner of selection, and terms of the several State superintendents. It will be noted that Mr. Long was superintendent three different times and served altogether 10 years.

State superintendents of education.

Name.	Appointed or elected.	Term.
M. H. Sherman	Appointed by governor	1879–1881
M. H. Sherman	Elected by popular vote	1881–1883
W. B. Horton	do	1883–1885
Robt. L. Long	do	1885–1887
Chas. M. Strauss	Appointed by governor	1887–1889
Geo. W. Cheyney	do	1889–1893
F. J. Netherton	do	1893–1895
T. E. Dalton	do	1895–1897
A. P. Shewman	do	1897–1899
Robt. L. Long	do	1899–1903
N. G. Layton	do	1903–1905
Robt. L. Long	do	1905–1909
Kirke T. Moore	do	1909–1912
C. O. Case	Elected by popular vote	1912 to date.

The county.—In the meantime county-school systems were assuming more definite shape. In March, 1897, the legislature provided for the separation of the office of county superintendent of schools in counties of the first class (those with property valuation of at

least $3,000,000). Under the provisions of this act four counties—Maricopa, Yavapai, Pima, and Cochise—elected county superintendents for a period of two years at an annual salary of $1,000. These county superintendents at first paid their own traveling expenses, and one State superintendent reports that these expenses were so heavy as to leave but $250 annual salary for the county superintendent; later an allowance of $150 for traveling was provided by the legislature, and in 1907 the maximum was raised to $250. County superintendents were required to visit each school in the county at least twice a year. Ten dollars was deducted from the salary for each school not so visited. In 1909 the salary of the probate judge and ex officio school superintendent in counties of the second class was fixed at $1,200, in addition to legal fees. In counties of the third, fourth, fifth, and sixth classes this officer was allowed a salary of $300 as county school superintendent, and in addition thereto, as probate judge, he received fees and such salary as might be fixed by the board of supervisors, not less than $300 nor more than $600. (Ch. 19, Session Acts of 1909, p. 40.) These provisions remained in effect until statehood, when the office of county superintendent was made independent in all counties, and salaries were raised.

The present system of apportionment evolved during this period. There was a continued tendency to increase the burden of support assumed by the State and county. The interests of small districts, though not so well cared for as under the law passed in 1912, received constantly growing consideration, though the amount varied at different times throughout the period.

General conditions.—A new normal school, known as the Northern Arizona Normal School, was established at Flagstaff in 1899. The rapid growth of this and other higher institutions of learning, both in numbers and effectiveness, is treated elsewhere in this report. With statehood in 1912 a revised school law, substantially the same as at present and embodying the principles later outlined in this section, was passed by the legislature. The growth of educational ideals and provisions for accomplishing them is treated at length in the various sections of this report.

Section 3.—THE EDUCATIONAL SYSTEM.

The constitution of Arizona provides that the State shall establish and maintain a system of public schools which shall be free to all children in the State. The general conduct and supervision of the schools shall be vested in a State board of education, a State superintendent of public instruction, county superintendents, and governing boards of such State institutions as shall be provided by law.

(A) STATE BOARDS.

The State board of education is composed of the following: The governor, the superintendent of public instruction, the president of the university, and the principals of the normal schools, as ex-officio members; and a city superintendent of schools, the principal of a high school, and a county superintendent of schools to be appointed by the governor. The members serve without pay, but are allowed necessary expenses. The State superintendent is secretary and calls the meetings of the board. The powers of the board are limited, and its duties general and unimportant aside from prescribing and enforcing the use of a uniform series of textbooks and course of study for the common schools of the State.

There is a State board of examiners, composed of the superintendent of public instruction and two competent persons appointed by him. This board examines candidates and grants all certificates except life certificates. Those certificates are issued by the State board of education on the recommendation of the board of examiners.

There is also a State board in charge of each of the two State normal schools, and there is a board of regents of the State university.

(B) STATE AND COUNTY SCHOOL OFFICERS.

The State superintendent.—The State superintendent of public instruction is elected biennially at the general election. No qualifications are prescribed. His duties are defined by law and are of a general nature. Among them may be mentioned the "supervision of all public schools of the State," the apportionment of the State fund among the counties, preparation of a biennial report, distribution of the school law, preparation and distribution of blank forms for school boards. The superintendent has an office in the capitol and has a deputy and two clerks. The salary is $3,000 per year. The State superintendent is ex officio a member of the governing board of all the institutions for higher education in the State, and a member of the State board of examiners. He receives $300 additional salary for services on this board.

County superintendent.—In each county there is a county superintendent of schools, who has general supervision over the schools of the county outside of cities with special superintendents, and keeps the financial accounts for all districts. The amount of money supplied by the county is fixed by the county superintendent and the county board of supervisors, based on the budgets of the boards of trustees of the several districts. The county superintendent apportions the funds. In matters of a strictly educational nature the county superintendent has not sufficient authority to formulate a policy for the county system. His powers and duties, like those of the State superintendent, are general and relatively unimportant.

In addition to the duties mentioned, he presides over teachers' institutes, conducts examinations in accordance with the regulations of the State board, distributes forms and reports, provides for and collects reports from trustees, makes annual reports to the State superintendent, and visits each school in the county twice a year. He may appoint a teacher and provide for the conduct of a school if the trustees fail to do so, and may require repairs to the amount of $200 when needed and when the trustees fail to provide the same. The county superintendents are elected biennially at the general election. Salaries range from $900 to $2,400. All but three have clerks or deputies.

(C) THE SCHOOL DISTRICTS.

The district is the unit for school administration in Arizona. It is directed by three trustees, one of whom is elected each year. The term of office is three years. This board has complete management and control of the schools in the district, provides buildings, furniture, equipment, and supplies; selects and employs teachers, census marshals, and truant officers; calls district meetings on its own initiative or on petition of 15 per cent of the electors, for the purpose of voting bonds, locating or changing location of schoolhouses, and deciding upon questions of transportation of pupils. The board of trustees is required to make reports annually or whenever required by the State or county superintendent of schools. Districts may be consolidated upon a majority vote of the people in the districts concerned. Common-school districts lapse when fewer than eight pupils of school age attend school for three months during any school year and the county superintendent so recommends to the board of supervisors. There are 455 school districts in the State, 490 school buildings, and 1,546 teachers (see Tables 4 and 5).

TABLE 4.—*Arizona public schools, 1915–16.*[1]

Counties.	Area in square miles.	Population 6 to 21.	Districts.	School buildings.	Teachers employed.	Children enrolled.	Total expenditure for maintenance.
Apache	11,379	1,197	19	10	35	1,039	$32,956
Cochise	6,170	12,101	87	90	316	9,545	287,537
Coconino	18,238	1,287	13	17	34	1,155	65,298
Gila	4,663	4,426	27	37	120	4,050	123,120
Graham	[2] 4,508	3,171	33	43	80	2,773	64,312
Greenlee	[2] 2,000	4,242	18	26	94	3,488	107,089
Maricopa	8,891	13,735	51	65	345	10,473	348,045
Mohave	13,390	1,109	21	21	24	813	24,401
Navajo	10,300	2,522	24	24	65	1,786	71,933
Pima	9,505	6,371	31	30	129	4,967	122,887
Pinal	5,380	2,614	36	37	74	2,509	70,309
Santa Cruz	1,229	2,957	23	25	57	1,696	38,077
Yavapai	8,150	3,697	46	40	116	2,784	112,397
Yuma	9,987	2,084	26	25	57	1,884	47,174
Total	113,810	61,633	455	490	1,546	49,051	1,515,576

[1] From report of the State superintendent and of the county superintendents.
[2] Estimated. Graham previous to 1911 included Greenlee, and its area was 6,508 square miles.

TABLE 5.—*School districts and teachers in Arizona, rural and urban.*

Counties.	Number of elementary school districts with—						Number of high school districts with—				
	1 teacher.	2 teachers.	3 teachers.	4 teachers.	5 teachers.	6 or more.	2 teachers.	3 teachers.	4 teachers.	5 teachers.	6 or more.
Apache	12	2	2	2	1						
Cochise	67	6	2	6	2	4	1				
Coconino	10	1				2					4
Gila	17	5			1	4					
Graham	21	5	3			4					2
Greenlee	13	1		1		3					1
Maricopa	19	8	7	3	4	10			1		2
Mohave	18	2			1					1	3
Navajo	15	4	1	1	1	2					1
Pima	23	3	2	1		2					
Pinal	30	2			1	3					1
Santa Cruz	20	1		1		1					1
Yavapai	35	4	3	1		3		2			1
Yuma	21	3	1			1					1
Total	321	47	21	16	11	39	1	2	1	1	17

Number of elementary-school districts, 455; high-school districts 23; number of elementary-school teachers, 1,347; high-school teachers, 199.

(D) MEANS OF SUPPORT.

Schools of the State are supported by a State fund, county taxes, and local district taxes. The State fund consists of an annual special legislative appropriation of $500,000, augmented by the income from school lands and the interest on a permanent fund obtained from the sale of school lands. The total State fund for apportionment for 1915–16 was $522,357. This is apportioned to the counties by the State superintendent four times a year on the basis of the number of children between 6 and 21 years of age. Before apportionment an amount is deducted sufficient to pay for textbooks, teachers' pensions, expenses of the State boards and the State department of education. In 1915 the apportionment was about $8.80 per capita.

The county fund is raised through a tax on all the taxable property of the county. The amount to be raised is estimated by the county superintendent, who considers in his estimates the money needed by the districts as certified to him by the boards of trustees. The total, including the county tax and the State apportionment, must be enough to allow at least $35 for each child in average daily attendance during the best six months of the preceding school year. To this, 10 per cent is added to cover possible increase in attendance. The whole amount is then submitted to the board of supervisors, who make a levy large enough to raise the sum needed. The board also levies any additional amount, determined by the district, for special purposes or for improved service. Districts vote bonds for buildings and permanent improvements. No district employing one teacher receives less than $850 nor more than $1,000 from the county and State.

Fines and forfeitures are included with the general county fund from taxation.

(E) GENERAL PROVISIONS.

The law provides a minimum school term of eight months. The State furnishes textbooks free to all children and provides an annual retirement fund of $600 for teachers who have served 25 years or more, 15 of which must have been in the State. The money for this purpose is taken from the regular State fund before apportionment. The matter of distribution of the pension fund is in charge of the State board of education.

(F) HIGH SCHOOLS.

The law provides for three classes of high schools—district, union, and county union. The district high schools are governed by the regular district boards and supported by special district tax. Union high-school districts are formed by the combination of two or more common-school districts for high-school purposes. They are managed by high-school boards of five members each, three of whom must be residents of the district in which the high school is located. Union high schools are supported by special tax on the union territory. County high schools are established and controlled in the same way as union high schools except that the territory includes the whole county. The State gives a bonus to high schools maintaining vocational departments to the extent of reimbursing them for expenditures made for that purpose up to $2,500. Nineteen high schools, including the preparatory departments of the two normal schools, received this assistance in 1914–15.

(G) HIGHER EDUCATION.

The State maintains three institutions for higher education:

(1) The University of Arizona, at Tucson, which includes a college of liberal arts, the State college of agriculture, a department of education, and a school for the deaf. The enrollment in the fall of 1916 was about 350, of whom 72 were enrolled in the department of education. The university is managed by a board of regents composed of the governor, the State superintendent of public instruction, ex officio, and eight members appointed by the governor.

(2) The Arizona Normal School, located at Tempe, which had an enrollment of 422 in November, 1916. It offers for the professional training of teachers a five-year course based on the completion of the elementary school and a two-year course based on high-school graduation.

(3) The Northern Arizona Normal School, at Flagstaff, which offers similar courses, had a total enrollment of 320 in November, 1916. Each normal school board is composed of the State superin-

tendent of public instruction, ex officio, and two resident members appointed by the governor.

(H) EDUCATION OF EXCEPTIONAL CHILDREN.

The State maintains for the care and education of delinquents the State Industrial School, at Fort Grant. Both boys and girls are provided for in this institution, which is under the management of the board of control of the State penitentiary and insane hospital.

The legislature appropriates $5,000 annually for the care of persons deaf, dumb, or blind, who are of sound mind, and whose parents are unable to provide for their education. The State board of education is authorized to contract with a State having an institution for the education of the blind for the care of blind Arizona children properly certified by the census marshals and the county superintendents. The rate must not exceed $350 a year per capita.

The law provides that the University of Arizona shall admit to the School for the Deaf properly certified applicants afflicted with either deafness or dumbness, and provide for their education, board, and lodging. A school is maintained for these children on the campus of the university. The maximum amount allowed the university is $250 a year per capita.

(I) PRIVATE SCHOOLS.

There are in Arizona 13 private colleges, academies, and parochial schools, in which approximately 92 teachers are employed and 2,400 pupils are enrolled. Nine of these are Catholic institutions, and are located at the following places: Bisbee, Flagstaff, Nogales, and Prescott; three at Phoenix, and two at Tucson. There are three Mormon academies, which are located at Thatcher, Snowflake, and St. Johns. Besides these there is the Evans School for Boys, located at Mesa, which offers two years of college preparatory work. The mission school at San Xavier, now used exclusively for the education of Indians, is the oldest educational institution in the State. School is still conducted in the old building constructed in 1692.

TABLE 6.—*Private schools in Arizona.*

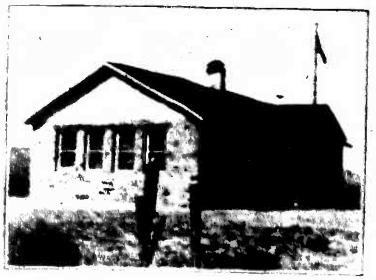
Schools.	Location.	Teachers.	Enrollment.	Denomination.
Marists College	Tucson	5	75	Catholic.
St. Joseph's Academy and School	do	17	450	Do.
Loretto Academy and School	Bisbee	9	200	Do.
Loretto Academy and School	Flagstaff	5	120	Do.
Sacred Heart Academy and School	Nogales	6	275	Do.
St. Joseph's Academy and School	Prescott	10	146	Do.
Convent Sisters Precious Blood	Phoenix	16	288	Do.
St. Mary's Parish	do	6	256	Do.
St. Anthony's Parish	do	6	160	Do.
Gila Academy	Thatcher	8	201	Mormon.
Snowflake Academy	Snowflake	7	118	Do.
St. John's Academy	St. Johns	6	113	Do.
Evans School	Mesa			

(J) INDIAN SCHOOLS.

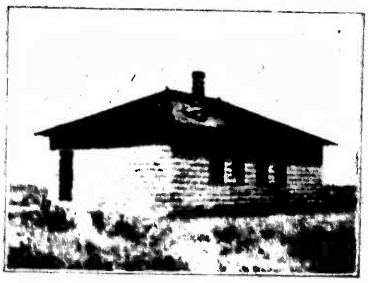
For the education of the Indians there are 16 Government superintendencies, containing 63 day and boarding schools. Of the total number, 10 are mission schools; 5 maintained by the Catholic, 2 by the Presbyterian, 2 by the Evangelical Lutheran, and 1 by the Christian Church. The total enrollment of all Indian schools in the State is 5,076; the average enrollment, 4,669; and the average daily attendance, 4,152. Data in detail are given in Table 7.

TABLE 7.—*Government and mission schools for Indians.*

Superintendencies.	Schools.	Total enrollment.	Average enrollment.	Average attendance.
Camp Verde	2	63	54	47
Colorado River	2	308	277	261
Fort Apache	6	382	358	329
Havasupai	1	27	26	22
Kaibab	1	17	15	12
Leupp	2	91	90	80
Moqui	6	371	320	298
Navajo	8	844	758	628
Phoenix	1	780	761	708
Pima	14	843	778	696
Rice Station	1	233	216	200
Salt River	3	147	129	99
San Carlos	3	219	183	165
San Xavier	9	410	385	307
Truxton Canyon	1	100	97	96
Western Navajo	3	239	213	204
Total	63	5,076	4,669	4,152

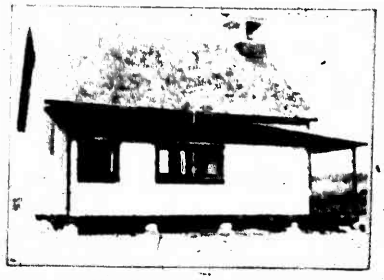


A. A TWO-ROOM BUILDING IN YAVAPAI COUNTY.



B. A CONCRETE BLOCK BUILDING IN COCHISE COUNTY.

C. A FRAME STRUCTURE AT CHLORIDE, MOHAVE COUNTY.



D. CLEAR CREEK SCHOOL, YAVAPAI COUNTY.

E. YUCCA SCHOOL, MOHAVE COUNTY.

F. GOLCONDA SCHOOL, MOHAVE COUNTY.

SOME ARIZONA RURAL SCHOOLS.

A. [illegible] AT [illegible]

B. AGRICULTURAL CLASS BREAKING GROUND AT SAFFORD.

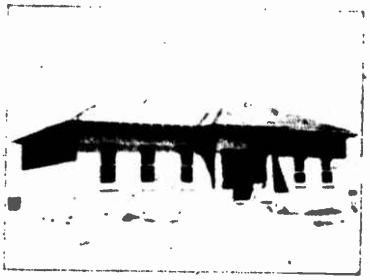
A. [illegible] SCHOOL, NO. 18.

B.

C. SAN PEDRO, N. [illegible] SCHOOL, CAMERON COUNTY.

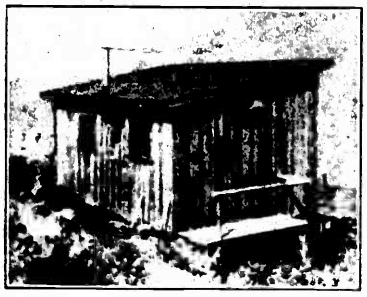
D. [illegible] COUNTY.

E. TEXAS NO. 2.



F. A [illegible] BUILDING, [illegible] COUNTY.

RECENTLY CONSTRUCTED SCHOOLHOUSES.



A. A COTTAGE IN A MINING CAMP.

B. A TYPICAL ADOBE STRUCTURE.

C. SUITED TO THE CLIMATE.

D. HALF WOOD, HALF CANVAS.

E. BY THE SIDE OF AN IRRIGATION DITCH.

F. THICK ADOBE WALLS DEFY THE HEAT.

TEACHERS' DWELLINGS IN RURAL DISTRICT.

Chapter II.

STATUS OF ELEMENTARY AND SECONDARY EDUCATION.

The purpose of this chapter is to point out for the guidance of school officials the strong points in the school system which should be continued, and also to set forth the weaknesses which need correction and revision. In many ways the schools of Arizona rank high, comparing favorably with those of States most advanced in education. The expenditure for public education in comparison with the wealth of the State, and the expenditure per school child, are about the average for Western States. The method of raising funds for school support has proved excellent. The unit of support is large, and the small school is provided with at least $850 for maintenance each year. Suitable new buildings are being erected at a rapid rate to replace the pioneer buildings. The percentage of teachers who are professionally trained is larger than in a majority of the States, and the salaries paid are higher than those paid in any other, with possibly two or three exceptions. The State seems alive with the desire for the best in education. In all of these respects an excellent beginning has been made and progress may be expected by the continuation and enlargement of these policies. On the other hand, there are weaknesses pointed out in this and succeeding chapters due largely to the fact that the State lacks the cooperation of educational agencies and the definite constructive leadership which comes as a result of a centralized administrative system. Such a system and the cooperation and leadership which eventuate from it are essential not only that the best results may be obtained in specific instances, but they are especially necessary for that State-wide progress which is the concern of the Commonwealth considered as a whole rather than as separate individual communities.

Section 1.—STATE ADMINISTRATION.

Arizona is organized for school management on the district basis, each school district maintaining the kind of school it wishes, with little interference from the county or State. Progress depends on

local sentiment and initiative. It has been rapid, but not uniform. Adjacent to districts with schools of the best type are other districts with very poor schools. County superintendents have influence in school improvement, but their influence comes from ability to persuade rather than from legal authority. The State itself assumes little leadership. It has given its State department of education neither the authority nor the means to make it possible for it to determine educational policies and to enforce their execution. It should have a State department organized to give definite and continued State leadership, under which State-wide progress may result. It should recognize that education is a function of the State, and that it is its business to see that approximately equal educational opportunities are given to the children in all of its parts. Before Arizona can provide the necessary centralized State organization, several constitutional amendments are required. The committee recommends that immediate efforts be made to obtain:

(1) A constitutional amendment abolishing the present ex officio State board of education. In its place there should be a board of seven persons especially fitted for the work, selected and appointed by the governor with the approval of the State senate.

(2) A constitutional amendment to convert the office of the State superintendent of public instruction from a political elective one to an appointive one, to be filled only by a person especially fitted and equipped for educational work.

(3) Legislation conferring on the State board of education and the State superintendent of public instruction enlarged and clearly defined functions and power to perform them.

In addition to a centralized State department of education there is need of centralizing local administration into larger units, preferably the county as the county is now the unit of support in school affairs. The committee recommends for local administration:

(1) County boards of education charged with the general management of the schools of the county, particularly with the disbursements of the county school funds, fixing district boundaries, and the appointment of the county superintendents, assistants, and teachers.

(2) The retention of the local trustees as custodians of the school property, with the duties of attending to repairs, upkeep, and minor supplies, and acting as the immediate overseers of the schools. They should represent the district before the county board, recommending supplies, equipment, and teachers desired.

(A) STATE BOARD OF EDUCATION.

The State constitution now prescribes that the State board of education shall be composed of the governor, the superintendent of public instruction, the president of the State university, and the principals of the State normal schools as ex officio members, and of a city superintendent of schools, a principal of a high school, and a county superintendent of schools, all three appointed by the governor.

The board has no legal authority to assume definite responsibility for the State's educational system. Its principal functions are:

To supervise the apportionment of the State school funds; to adopt regulations governing State aid to high schools; to prescribe the course of study for common schools and determine the qualifications of graduates from high schools and entrance to normal schools; to administer the free textbook and teachers' pension laws; to issue life certificates to teachers; to have charge of the education of the deaf and the blind.

The principal objections to the composition of the present board are:

(1) It is not continuous; five of its eight members are either political officers elected by the people or members appointed by a political officer and their terms expire with any change in State administration.

(2) The board is composed, with the exception of the governor, entirely of men in educational work. This shows a wrong conception of the functions of such a board. A board of educational experts is not required. The State superintendent is supposed to be the educational expert. One of the principal functions of the State board is to secure such an expert for the State superintendency and then to give to him the support, advice, and assistance so badly needed of persons from occupations other than education.

(3) The members are required to serve on the board regardless of their personal fitness and regardless of whether or not they have time for the work. The governor of the State has so many other duties that he has little time for those of the State board of education, and he will have less time as the population of the State increases. The same is true of the presidents of the State university and State normal schools.

(4) The governor appoints three members of the board, although himself a member of it, which may give him undue influence. The creator can hardly sit in council with his creatures on equal terms.

Several States have tried Arizona's present plan of a board composed of persons in educational work serving ex officio. The plan has not as a rule proved satisfactory. An evidence of this is the action of the State of California, which in 1911 abandoned the ex officio board made up of educational officers, and provided for an appointive board, no member of which "shall during his term of office hold any salaried education position."

The committee recommends a board of seven members composed of men and women of affairs, scholarship, and business ability, appointed from various parts of the State by the governor, with the approval of the senate, and that the term of office be at least eight years with not more than two terms expiring in any biennium. In this way a continuity of service and freedom from political inter-

ference may be secured to the members. The board may or may not include persons engaged in educational work; the majority, however, should be in other occupations. Certainly none should be employees in institutions under the charge of the board. The members should serve without pay, but should receive their actual traveling and other expenses in attending board meetings and perhaps a reasonable per diem. A certain number of fixed meetings should be held each year and provision made for special meetings on the call of the governor, the State superintendent, or a majority of the members. The State superintendent should not be a member of the board, but should be its secretary and executive officer.

The powers and duties of the State board of education should be clearly defined by law. It should have power and it should be its duty—

(1) To have general charge of the educational interests of the State and determine educational policies, particularly in organization and administration, as to the general scope of the public-school system.

(2) To appoint and fix the salary of the State superintendent of public instruction, and upon his recommendation to appoint all assistants and employees of the State department of education and fix their salaries.

(3) To assist the State superintendent of public instruction in the duties conferred upon him by the constitution and laws.

(4) To have general oversight of vocational and other special schools or departments of schools receiving special State aid and Federal or other financial aid given through the State, whether the schools are established and controlled by the State or by local authorities.

(5) To control and manage the two State normal schools now in existence and all other teacher-training schools that may be established, replacing the present local boards of control.

(6) To control and manage the State Industrial School and such State institutions for the education of orphans, the deaf, blind, feeble-minded, and other special classes as may be established, and to exercise general oversight of similar institutions receiving special State aid established by local communities and under immediate local control.

(7) To apportion the State school funds to the counties and to enforce State laws and regulations by withholding funds from counties in which schools are not maintained in accordance with the State laws.

(8) To have final approval of a State course of study prepared by the State department of education and fix standards for graduation from high schools.

(9) To have final approval of the charters of all higher education institutions that may be established in the State, and to determine standards on which collegiate degrees may be conferred, under such regulations as may be fixed by law.

(10) To select or provide for the selection and purchase of textbooks for use in the elementary and high schools.

(11) To exercise the functions, powers, and duties now conferred upon the State board of examiners, transferring the work to the State department of education, granting certificates upon the recommendation of the State superintendent.

(12) To determine under general regulations fixed by law the kinds of teaching certificates to be issued and the requirements for each.

(13) To maintain a State teachers' employment bureau as a division of the State department of education, which would serve to assist local authorities in securing qualified teachers.

The committee does not believe that the board should attempt to handle the details of the work of the State school organization; these should be left to the State department. It should confine its attention to the larger features of administrative problems. All of its decisions should be carried out through the State superintendent. It is expected, of course, that the presidents of the State educational institutions would continue as the immediate executive heads of their respective institutions.

Probably the most important function of the State board is the selection of a properly qualified and suitable State superintendent of public instruction who shall be its executive officer and upon whom it shall depend for advice and for the execution of its policies. The second in importance is the determination of the educational and business policies of the school system, and the inspection of the results obtained by their executive officer.

The principal function of the board is legislative, the execution of its legislation being left to its executive officer, the board then examining the results of its policies and the work of its executive officers by inspecting the results obtained.[1]

(B) STATE SUPERINTENDENT.

The powers and duties of the State superintendent of public instruction, other than the execution of the orders of the State board of education, should be definitely fixed by legislation. There should be employed in the State department a sufficient number of field agents to keep it in touch with schools in all parts of the State. At least two should be employed as early as possible. They should serve as inspectors of secondary schools, vocational schools, and special schools receiving State aid, and as advisers and assistants to the State superintendent in the performance of his legal duties. In addition there should be employed in the State department, working under the direction of the State superintendent, a State school architect, an expert statistician, a chief of a division of certification, one person in charge of textbook distribution, and necessary clerical assistants.

The State superintendent should have power and it should be his duty—

(1) To supervise all educational work supported in whole or in part by the State and report thereon to the State board of education.

(2) To visit different parts of the State in the interest of education and to collect and diffuse information about school affairs.

(3) To prepare, publish, and distribute matter for the promotion of public-school work.

[1] Denver survey.

(4) To collect reports from county and city superintendents and from private institutions, and to prepare and publish biennially a complete report on the status of education in the State, containing the various statistics reported.

(5) To prepare blank forms for use by county superintendents in collecting data, forms for the use of county treasurers in keeping account of school receipts and expenditures, registration blanks and card reports for use in all schools in the State, and all other forms necessary for the use of school officers.

(6) To compile and publish the school laws of the State.

(7) To interpret school laws and to aid school officers and teachers in all matters relative to the conduct of the schools.

(8) To prepare the courses of study for the public schools to be presented to the State board for final action, and to approve the courses of study in all special schools before they receive State aid.

(9) To examine textbooks and recommend to the State board books to be purchased by the board for use in the public schools of the State, and to manage the work connected with the distribution of the State textbooks to the several school districts.

(10) To enforce State laws and regulations by withholding from any county, pending the action of the State board of education, a portion of the State fund from counties disregarding them.

(11) To hold an annual convention of county and city superintendents and of county and city boards of education.

(12) To prepare, or have prepared, questions for examinations for teachers' certificates; to issue State certificates ordered by the State board of education.

(13) To prepare or have prepared and published plans and specifications for school buildings.

(14) To perform such duties as may be prescribed by law, and as executive officer of the State board to perform such other duties as the board may direct.

The State superintendent of public instruction should be selected and appointed by the State board of education in a manner similar to the method of selection and appointment of city superintendents by city boards of education and college presidents by college boards of trustees. Selection should be based upon particular fitness for the position to be filled, regardless of political affiliations or of residence within or without the State. The first appointment should be for a specified term, sufficiently long to insure the most efficient service; reappointment might be for a specified term or for an indefinite term, the State board having power to remove the incumbent from office for inefficiency or malfeasance. A State officer so appointed, able to count on continuous tenure during good service, would become the actual head of the State system, first in responsibility and opportunity and would be in a position to develop the educational work of the State to the highest point of efficiency.

The chief school officers of 15 States no longer are elective political officers, and determined efforts are making in many other States to change from the elective to the appointive method, so that persons of the best ability may be chosen. A study of the length of terms served by the State superintendents in the United States shows that the terms of elected superintendents are almost universally shorter than the terms served by superintendents appointed.

It is noteworthy also that in the States in which the superintendents are elected, as a rule, low salaries are paid; in the other States they are much higher and compare very favorably with those paid to presidents of State universities and to superintendents of schools in cities employing professional officers. If Arizona adopts the appointive method it should provide an adequate salary, at least as great as that paid to the president of the State university. In the following States with appointive superintendents, chief school officers are selected and appointed because of their professional training, educational experience, and fitness for the position. Their salaries are as follows: New York, $10,000; New Jersey, $10,000; Massachusetts, $6,500; Vermont, $5,000; Pennsylvania, $5,000; Rhode Island, $5,000; Minnesota, $4,500; Ohio, $4,000; Maine, $4,000; New Hampshire, $4,000. Among the elected superintendents one receives $7,500, three $5,000, and three $4,000. Eighteen States pay the same salary as Arizona ($3,000 a year) and eight States pay less.

Arizona has tried both methods of securing a State superintendent—appointment and popular election. The appointments were made, however, by the governor and not by the kind of State board of education herein recommended. Appointment by the governor has been satisfactory in a few States, but unsatisfactory in others; and two States since 1913 have changed from this method of appointment to appointment by a board. Dissatisfaction has come from the action of State governors who have insisted upon regarding the State superintendency as a partisan political office, to be used in paying election obligations.

(C) CERTIFICATION OF TEACHERS.

The State board of education, when reorganized as recommended, should take over the functions now performed by the State board of examiners, and that board should be abolished. It is now composed of the State superintendent and two persons appointed by him, each of whom is paid an annual salary of $300 and necessary expenses. It prepares examination papers which are forwarded to the county school superintendents for use in the quarterly examinations. The papers are returned to the board and examined and rated by it. The board issues three grades of certificates:

Second grade: Valid two years, nonrenewable, obtained by examination in geography, history and civics, physiology, hygiene, orthography, penmanship, composition, reading, methods of teaching, grammar, arithmetic, and the school laws of Arizona.

First grade: Valid four years, renewable, obtained by examination in above subjects and in algebra and elementary physics. This grade of certificate is granted also on credentials (1) to graduates of any

State or other public normal schools whose standards are equivalent to those of the Arizona State normals and are accredited by the State board of education; (2) to graduates of accredited universities and colleges; (3) to holders of life certificates or equivalent credentials issued by other States.

Primary: Valid four years, renewable, obtained by graduates of schools accredited by the State board of education when such graduates have made special preparation to teach in primary grades.

Life certificates and special certificates are issued by the State board of education on the recommendation of the board of examiners.

Life certificate: Obtained by holders of first-grade certificates after 15 years' successful teaching experience (10 of which must have been in Arizona) who have passed an examination prescribed by the board in psychology, pedagogy, and school management.

Special certificate: Issued to teachers of special subjects on credentials or examination.

The entire system of awarding teachers' certificates should be revised. All certificates should be issued by the State department of education under regulations of the State board of education. The kinds of certificates and requirements for each should be fixed by the State board under general State legislation. No State legislature should attempt to fix standards in a matter of this sort, except to require a definite amount of education both general and professional as a prerequisite for teaching in the State. It is recommended that the legislature give the reorganized State board of education full control of certification, with a proviso that all new teachers employed shall have general education not less than the equivalent of a four-year standard high-school course and a given amount of professional work in education. This professional education should consist of classroom instruction in a recognized institution for training teachers. One year after the passage of the act a minimum of six weeks of such professional education should be required, and each succeeding year gradually increasing amounts until by 1924 the amount required should be equivalent to that obtained in a two-year normal-school course. This means a total of six years of secondary and professional education beyond completion of the eighth grade. Similar legislation in other States has been successful in raising the educational qualifications of the teaching force. As is evident from data given elsewhere relative to the present teaching force, those engaged in the State of Arizona at the present time stand relatively high in proportion to many other States. This, however, should not defer action on the part of the State in reaching as early as possible what should be regarded as a minimum provision.

The diplomas of the State normal schools should be recognized as teaching certificates valid for two years and renewable by the State

board of education on presentation of evidence of satisfactory teaching and of the completion of the minimum amount of professional reading determined by the State board of education.

As time goes on certificates should be issued almost wholly on credentials of education or of education and successful teaching experience, as the examination method as usually conducted is unreliable. If some certificates must continue to be granted through the examination method, questions could be prepared as at present in the State superintendent's office, the examination conducted by the county superintendents, and the answers returned to the State office for grading. The department should have funds available to employ persons, if necessary, for short periods to assist in examining the papers.

Arizona is at present issuing many certificates on credentials of education or of education and teaching experience. It is also accepting life certificates issued in other States. The list of institutions, however, from which graduation is accepted as of equal standard with graduation from the State institutions of Arizona, includes many of very much lower grade. It is evident that the list was prepared without much real information as to the standards of the institutions listed. It should be completely revised.

If the certification of teachers is placed in the State department of education, there should be created a division to give its entire time to the work. This would require the services of one person continuously, with provision for employing extra help for one or two weeks immediately following the examinations. In connection with the division there should be established a teachers' employment bureau. Such bureaus are conducted successfully in several States, notably in Massachusetts and Minnesota. The records required for certification and those for employment agencies are practically identical. In this agency teachers from Arizona and from other States desiring positions in Arizona might register. The agency should have on file also lists of persons available for institutes, teachers' conventions, directors' associations, parent-teacher associations, and similar organizations. A small fee should be charged teachers for certification and for registering for positions. This would make the division practically self-supporting.

(D) CONTROL OF NORMAL AND SPECIAL SCHOOLS.

Normal schools.—The two State normal schools are now under the control and management of separate boards; the Tempe board consists of the State superintendent of public instruction and two citizens of the town of Tempe; the Flagstaff board consists of the State superintendent and two citizens of Flagstaff. The fact that the

boards are composed of local persons probably explains why so many people throughout the State seem to feel that the normal schools are primarily local and not State institutions. The committee believes that they should be under a single board with members from various parts of the State. When the State board of education is reorganized as recommended it should have control of these schools. It must be recognized that the normal schools are a definite part of the State public school system, since they are the professional institutions training teachers for the other schools in the system. The board at the head of the public school system must have the control and management of the institutions training the teachers, if the best results are to be obtained.

In business management a gain will result from placing the two existing schools under a single board. This is apparent to most thinking people. It would also eliminate the rivalries of the institutions before the State legislature in their endeavor to secure appropriations.

Special State institutions.—The State Industrial School for delinquent boys and girls is primarily an educational, not a penal, institution; it should therefore be under the management of the reorganized State board of education instead of under the board of control of the State penitentiary and State insane hospital. Also all other special State institutions primarily educational, as established, should be placed under the State board of education; this would include State schools for the blind, deaf, mentally defective, etc. The present plan of sending blind and deaf children to institutions in other States and paying their expenses is the most practical one while the number is small. Sooner or later, however, the State will find it necessary to provide other means for their care and education.

For those who are mentally defective, the State has immediate need of an institution of its own. No provision for this class is now made. Many are attending public schools, where their presence is a serious hindrance to the progress of the other children and of comparatively little value to themselves. A special form of education is necessary. For the majority this can be given in special classes in the local school systems; for many, however, it can be given only in a separate institution. An institution is needed for segregation of those beyond a certain degree of defectiveness as well as for their education. There are many more defective children in the State than is generally supposed. The number is not definitely known but should be determined by careful investigations by competent persons. An approximation can be made from the results of an inquiry made of the superintendents or principal teachers of all school districts. Reports were received from 216 rural and 13 city

districts. There are 427 rural and 24 city districts in the State. From the reports it would appear that there are:

265 obviously mentally defective children attending school.
292 probably mentally defective children attending school.
77 mentally defective under 21 years of age not attending school.
52 families with more than one child mentally defective.

Figures by counties are given in an accompanying table:

TABLE 8.—*"Obviously" and "probably" mental defectives as reported by school districts.*

Defectives.	Apache County.	Cochise County.	Coconino County.	Gila County.	Graham County.	Greenlee County.	Maricopa County.	Mohave County.	Navajo County.	Pima County.	Pinal County.	Santa Cruz County.	Yavapai County.	Yuma County.	Total.
Total number of school districts	19	86	16	28	33	17	68	71	22	32	36	24	42	27	455
Number of *rural* districts reporting	8	47	5	11	18	11	24	8	14	10	14	8	26	12	216
Children obviously defective attending school (American)	1	11	1	7	10	1	28	0	5	0	0	5	10	1	80
Children obviously defective attending school (Mexican)	0	16	0	0	0	2	6	1	0	5	7	19	5	1	62
Children probably defective attending school (American)	1	12	1	9	18	3	24	0	9	0	4	2	13	0	96
Children probably defective attending school (Mexican)	2	21	0	1	4	1	9	2	2	5	5	5	4	0	61
Children probably defective not attending school (American)	1	7	0	0	1	1	11	0	1	0	1	2	2	0	27
Children probably defective not attending school (Mexican)	0	5	0	0	2	1	0	0	0	0	4	1	0	1	14
Number of *city* districts reporting	0	1	2	0	1	1	4	1	1	0	0	1	1	0	13
Children obviously defective attending school (American)	0	0	11	0	13	5	22	1	5	0	0	1	0	0	58
Children obviously defective attending school (Mexican)	0	0	7	0	0	16	17	0	19	0	0	6	0	0	65
Children probably defective attending school (American)	0	0	7	0	2	4	41	2	4	0	0	0	1	0	61
Children probably defective attending school (Mexican)	0	0	12	0	2	25	26	0	7	0	0	0	2	0	74
Children probably defective not attending school (American)	0	0	5	0	2	3	2	0	1	0	0	0	0	0	13
Children probably defective not attending school (Mexican)	0	0	6	0	0	3	5	0	9	0	0	0	0	0	23

(E) RECORDS AND REPORTS.

The committee recommends that the whole system of making forms, collecting, transcribing, and summarizing data be revised. For this purpose an educational statistician, trained and experienced in school accounting, in the collection and dissemination of data and reports concerning school work in all its phases, should be employed in the State department of education.

The people are informed of the status of education within the State and have a basis for comparing their own with other State systems, through reports on educational conditions, attendance data, financial statements, and other statistical material concerned with the manage-

ment and educational efficiency of the schools. Through them, also, school officials and interested citizens may compare district, city, and county systems within the State. It is important, therefore, that information of this nature, usually found in county and State annual reports, be complete, accurate, and easily interpreted and have sufficient definiteness and uniformity to warrant making intelligent comparisons.

The records kept in the State department of education—financial accounts, minutes of the different boards, and others of a similar nature—are well kept and the books are in excellent condition. The annual reports of the State superintendent to the governor and of the county superintendents to the State superintendent are not in good condition and do not serve the purpose for which they are or should be compiled.

(1) Much of the data called for on county superintendent reports is not clearly designated; consequently the meaning is misunderstood, and uniform information is not obtained. For example, one item calls for the "number of schools" in each district. The instructions preceding the form explain that this is intended to mean the number of *teachers;* the meaning, however, is variously interpreted by the district clerks or county superintendents, and the data given may refer to number of buildings, number of class-rooms, or number of teachers. It rarely agrees with the two other items found later in the report, one calling for "number of teachers employed" and one for the names of the teachers employed. In another item the condition and supply of furniture and equipment must be characterized as "poor, well, middling." This is so indefinite that the interpretation is entirely a matter of personal opinion, depending largely on the previous experience of the teacher.

(2) The same reports are inaccurate as to data given and summaries made. Items which should agree do not. There is often a wide discrepancy between the sum of balance and receipts, on the one hand, and expenditures and balance on the other. Other errors occur in the financial accounts. The county superintendents apparently copy statistics from the reports of teachers and district clerks without correction; the State department in turn transcribes these and additional errors made by county superintendents. It is obvious that tabulations and summaries made in this way are of little value.

(3) Some of the data now collected are of little import and may well be dropped from the records. For example, the classification of schools as grammar, primary, and advanced is not significant in itself and is not understood by the teachers. The data obtained therefore are not uniform. It is also probable that the inclusion of "advanced grades" as an item promulgates the idea and promotes the practice of adding one or two years of high-school work in small schools poorly

equipped for it and detracts from the efficiency of the elementary grades.

(4) The reports as submitted are incomplete; many county superintendents do not report on all items; this is particularly noticeable in reports of teachers' qualifications.

(5) A great many items of particular importance are entirely omitted. Elsewhere in this report suggestions are given in regard to additional data which should be included on attendance; also concerning educational investigations and measurements concerned with classroom work. If the recommendations herein submitted are followed in regard to the purchase of supplies, management of textbooks, and other matters treated elsewhere, the number of items now contained in the reports should be increased materially.

(F) BUILDINGS AND EQUIPMENT.

The committee is of the opinion that legislation should be enacted requiring the plans of all school buildings to be erected in the State to be submitted first to the State department of education for approval. The department should employ a school architect (part time if full time is found not necessary) to approve such plans when found satisfactory, and also to be available for school authorities anywhere in the State to prepare plans and specifications at the fees ordinarily charged for such work. The architect should be paid a fixed salary, and fees collected should be turned into the State treasury. The State department also should have plans and specifications for school buildings and outhouses prepared for loan to districts whenever desired. The majority of country districts would then not need to employ an architect. If a building of a special type was desired different from any of those in the publication of the State department, the plan should be sent to the department for approval. The State department should also have a building code prepared for the convenience of school authorities and of architects employed by school boards to prepare plans for buildings.

Many new school buildings are under construction at the present time and many others will be required in the next few years on account of the rapid growth in school attendance and also because pioneer buildings still in use are no longer serviceable and must soon be replaced. Many of the city school buildings now in use were found to be old and poorly lighted and to fall far short of any acceptable minimum standard. Many new buildings have been erected in the past few years. Some of them are poorly planned for the best results in school management. Many of them are poorly lighted, because the buildings have not been located in such a way as to get the greatest possible number of classrooms with east or

west light. Not a few are incorrectly lighted simply because fundamental requirements were not followed. In others proper systems of ventilation are not provided. Considerable money could have been saved in the erection of several school buildings if school architects had been employed. More suitable buildings would have resulted if the plans had been corrected by a competent person who had made a special study of school buildings and had had experience in school management.

An inspection of a large number of country buildings in nine counties and information furnished by teachers relating to those of 213 districts, or 55 per cent of all rural districts in the State, indicate that in the next few years many new buildings will have to be built. Judging from many of those already erected which were visited and inspected, the need of a State architect to approve plans of rural buildings is even greater than for city buildings. General conditions of rural buildings, grounds, and equipment are given in Table 9.

TABLE 9.—*Report of rural school building survey.*

(Only schools with three or fewer teachers included.)

	Number.	Per cent.
Total number of rural school buildings in State	390	100
Total number of reports received	213	55
Number with one teacher	149	70
Number with two teachers	35	16
Number with three teachers	29	14
Number of school buildings built since 1905 and reported new	128	60
Number built before 1905 and reported old	85	40
Material in buildings:		
Brick or cement	47	22
Adobe	48	22
Frame	116	56
General condition of buildings:		
Good	95	45
Fair	81	38
Poor	28	13
Number not reporting this item	9	4
Lighting:		
Side or rear lighting (good)	52	24
Insufficient or cross lighting (unsatisfactory)	161	76
Heating:		
Steam or furnace	11	5
Unjacketed stove	185	87
Jacketed stove	17	8
Ventilation:		
Windows only means supplied	202	95
Special provision	11	5
Kind of desks:		
Single	137	65
Double	30	14
Double and single reported	33	15
No desks furnished	13	6
Adjustable	34	16
Buildings equipped with—		
Charts	178	83
None	26	10
Dictionaries	187	88
None	15	.....
Supplementary books	137	63
None	28	.....
Curtains	135	63
None	65	30
Pictures	58	27
Sanitary fountains	43	.....
Individual cups	53	.....
No provision	108	.....
Number not reporting this item	5	.....

[1] This and following per cents refer only to the number reporting.

TABLE 9.—*Report of rural school building survey*—Continued.

	Number.	Per cent.
Buildings employing janitor:		
Janitor employed	126	60
Teacher acts as janitor	80	38
Buildings reporting—		
Assembly rooms	10	
Workrooms	37	
Rest or cloak rooms	12	
Fence:	58	
Yards with fence	70	
No fence	143	
Irrigation:		
Yards irrigated	34	
Yards dry or not reported	168	
Trees:		
Yards with trees	104	
Yards with no trees	98	
Playground equipment:		
Number having equipment	66	32
Number not reporting any equipment	135	68
Toilets:		
One only	24	12
Two	176	88
Condition of toilets:		
Good	96	50
Fair	59	30
Poor	38	20
Water source:		
Well	128	60
Carried from home, springs, or river by pupils	65	31
Number not reporting this item	20	9

The problem of obtaining satisfactory school grounds in Arizona, especially in rural districts, is not easily solved, because of the difficulty of selecting proper locations in relation to population, accessibility, water supply, and other considerations. It is evident that in determining the present locations little forethought was used and that no plans were made for anything beyond the mere site of the building. The need of playgrounds or of shade trees or shrubbery was not taken into consideration. There seems to be more or less common feeling in rural communities that country children have little need of playgrounds. This is a mistaken idea; playgrounds with simple equipment are a necessity, not a luxury.

Securing a suitable location is made more difficult because of the necessity of considering water supply. Approximately 60 per cent of the schools now have water on the school grounds. In one-third of the schools water is carried in buckets, or the children bring their own supply in canteens. The water supply also affects health and cleanliness. Sanitary fountains should be supplied where possible. Individual drinking cups, if kept clean and free from dust and germs, may be satisfactory if the water is kept in covered jars. In many of the schools visited individual cups were used, but the water was seldom kept in covered vessels. Not only should drinking water be available at all times, but water should be furnished for washing and for cleaning the schoolhouse, so that it may be as clean and wholesome as in the best homes. One schoolhouse was visited

which had no water supply nearer than 2 miles, but was scrubbed at least every two weeks; another schoolhouse with a good well within 50 feet of the building was never scrubbed, the teacher said. The water supply in several schools was taken from irrigation ditches and railroad tanks; in such cases the water should be filtered and sterilized before used.

Buildings.—Of the school buildings reported, 60 per cent have been built in the past 10 years. Many of these, in spite of their newness, are in unsatisfactory condition. At least one-half of these new buildings are unsatisfactory in lighting, having windows on three or in many cases on four sides. In a State where the sun is as bright as it is in Arizona, window shades are necessary. More than one-third of the schools report no window shades. Practically none of them are heated by jacketed stoves or furnaces, and only a very few have special means of ventilation.

The shifting population of Arizona makes it impractical in many places to build permanent buildings of desirable type. In such cases it is believed that temporary, movable buildings should be provided. These might be purchased by the county boards of education and rented to the districts at a reasonable rental. The present law allows State and county school funds to be used for renting school buildings, although it can not be used for erecting new buildings.

Equipment.—The reports and personal inspection indicate that the majority of the rural schools in the State have little useful equipment. In many cases school boards with good intentions have expended considerable funds for equipment, but the equipment is of little practical use. In one district a costly globe was found suspended from the ceiling, but the books not in use were standing in a packing box and the teacher had no desk or chair. The textbooks furnished by the State should be well cared for. Relatively few bookcases for their care were found. This is probably the reason why the loss of books reported elsewhere is so great.

Outbuildings.—Data relative to the conditions of toilets are given above. The reports and personal inspection show that comparatively little attention has been given to their condition. It is unusual to find pits kept clean or disinfected or any attempt made to screen out the flies. A very large number of those visited contained writings and markings of a more or less obscene nature.

(G) TEXTBOOKS.

The present system of handling textbooks furnished by the State seems unnecessarily wasteful. Districts order and obtain more books than they need, and no systematic way for returning those unused is

now provided. The books are poorly cared for, large numbers are lost or destroyed because proper precautions are not taken for their care and delivery. At present the State department has no means of preventing this waste. There should be in the State office one person who could devote his entire time to the direction of the care and delivery of textbooks. The saving in cost of books would be much more than his salary. Requisitions by the county districts should be made through county superintendents, who should have power to revise them in order that only necessary books be included. District clerks should be bonded and held responsible for the care and delivery of the books to the school, which delivery in many cases can be made directly from the publishers. Each county superintendent should have on hand a supply for emergencies. The cost of books furnished to each county by the State should be deducted from the State fund apportioned to each county. Careful investigation should be made of the advantages of handling the State books through a State depository to determine whether the method should be continued or whether the books should be purchased directly from the publishers by the State department, the State department itself acting as depository. If after investigation the depository is retained, the representative of the State department in charge of books should have office room in the depository building and have immediate oversight of the shipment and return of books.

The free textbook system of Arizona has been in operation for three full school years. In 1913–14, the first year, 368,866 books were distributed by the State department, at a cost of $2.42 per child enrolled and $3.62 per child in average daily attendance. Sales and fines during the first year amounted to a trifle over 1 per cent of the cost. Additional books purchased the second year cost 63 cents per child enrolled and 96 cents per child in daily attendance. The cost the second year should have been very small.

Exact figures of the number of textbooks lost and worn out each year could not be obtained. Nine counties reported at the end of the year 20,487 "worn out, destroyed, or consumed," and 1,229 sold. The five counties not reporting received nearly one-half of the total number distributed. The total loss, therefore, was approximately 10 per cent the first year. It varied in the nine counties reporting from one-half of 1 per cent in one to 25 per cent in another. The loss in 1915–16 was nearly the same as for 1913–14, the number sold, however, was more than twice as great. That the loss was not greater than in 1913–14 indicates better management, since books had been in use longer.

The rules and regulations of the State board of education for handling the textbooks are adequate. The difficulty lies in the inadequacy of the State superintendent's office force, and also in that

the county superintendents and local trustees are not so careful as they should be. If each county were required to pay for books used and the clerks of the local boards were bonded and held responsible for loss of books, the loss would be much less. County superintendents should be required to collect books furnished to schools in excess of needs. Their offices would then constitute exchanges somewhat similar to that already in operation in Yavapai County. If the State would furnish substantial paper covers for all books and require that they be used, further economy would result.

Adoptions.—When the board of education is reorganized as recommended, it will be necessary to arrange for the preliminary selection of textbooks by some other agency. Probably the best plan will be for the State board to appoint a special textbook committee to consist of the State superintendent and 8 or 10 teachers, supervisors, and superintendents who have practical knowledge of books and the needs of schools. To this committee should be submitted for examination textbooks and publishers' briefs. This committee should make its recommendations entirely on the merits of the books, without reference to prices. Its recommendations should be considered final, and the State board should adopt books recommended by it. The price of books should play little or no part in the final selection. The cost of textbooks is less than 2 per cent of the total cost of schools. A difference of 10 per cent in the costs of two lists of books would amount, therefore, to only two-tenths of 1 per cent in the cost of schooling. In our American schools, and especially in those taught by untrained and inexperienced teachers, the textbook determines in very large measure the course of study, its contents, and the method of teaching, and the value of results. Few teachers correct mistakes in textbooks either as to matter or method of arrangement and presentation. Therefore, the quality of books and their fitness for use in the schools and not differences in price are of prime importance.

Section 2.—COUNTY AND DISTRICT ADMINISTRATION.

The county is now the unit of school support in Arizona. In order to insure that funds may be used wisely and that equal opportunities for education may be furnished to children in all parts of the county, there should be in each county a county board of education charged with the general management of the schools of the county. The county superintendent should be appointed by the board and should serve as its executive officer.

To change the method of selection of county superintendents will require a constitutional amendment. If legislation providing for it be passed in 1917,[1] the constitutional amendment may be voted upon

[1] Sections 1 to 3, inclusive, of this chapter were distributed in Arizona in January, 1917. No action on this matter was taken by the legislature. If action is taken in 1919 the full law would become effective January, 1923.

in the regular election in November, 1918. If adopted it will become effective January 1, 1921, at the expiration of the terms for which superintendents are elected in the 1918 election. Whether this constitutional amendment is passed or not, the county may be adopted as a unit of administration at the begining of the school year following favorable action by the legislature. Arizona is now organized for management on what is known as the district basis. The districts in many cases are still large. It will be found to be much easier to consolidate the counties into single districts now than it will be later, after the large districts are divided into many small districts. The county system of administration is in operation in 17 States. It has been successful wherever tried, and no State which has tried it has returned to the district system.

The following county system is recommended for Arizona: In each county a board of education, charged with the general control of all schools of the county except those in city districts employing superintendents devoting their entire time to administration and supervision; the county board to be composed of five persons elected at large from the entire county for terms of at least six years, not more than one-third of the terms expiring in any biennium and not more than one member of the board being a resident of a city district; no person employed in the public schools of the county should be a member; the board to appoint the county superintendent, who should be its executive officer. Estimates made by the county superintendent of the amount of money needed for the support of the schools should be submitted to the county board for approval and for transmission to the county commissioners to be included in the tax levy. The county board should have charge of the expenditure of county school funds among the several districts and should set apart an equitable portion for city districts not under its general charge. All expenditures of county and State school funds in the territory under its charge should be made with its approval.

Local school districts should remain as at present, the county board having power to consolidate and divide and to change district boundaries at its discretion. Local trustees should be elected as at present to act as custodians of school buildings, attend to repairs and upkeep, and to have immediate oversight of the schools. They should act under the direction of the county board, observing instructions transmitted through the superintendent, and as agents and representatives of their districts should make recommendations to the county board relative to supplies and equipment needed and teachers to be employed. The local districts should provide school buildings and permanent improvements, and for such purposes should be allowed to tax themselves or to issue bonds as at present. They should be permitted to employ special teachers in addition to those employed

by the county if they desire to do so and are willing to meet the necessary expenses.

The county boards should have power to fix the salaries of county superintendents, determine the number of assistants to be employed, fix their salaries, and employ them upon the recommendation of the superintendents. They should determine the number of schools to be maintained, approve their location, employ teachers upon the recommendation of county superintendents and the local trustees, and purchase through the county superintendents all supplies to be used in instruction in their several counties.

In general administration and supervision city school systems employing superintendents should be independent of county boards and county superintendents, but they should be required to report to them all required statistics and to show that they are complying with all State school laws before any part of the State and county funds is apportioned to them.

(A) THE COUNTY SUPERINTENDENT.

All that has been said in regard to making the office of State superintendent appointive applies equally as well to the office of county superintendent. The superiority of the appointive plan is generally recognized. In 23 States the county or other rural superintendents are now appointed officers; in 25 they are still elected political officers. A recent study made by the Bureau of Education relative to the education, training, experience, and length of time of service of county superintendent shows that the time of service in States where they are appointed is much longer than in the States where they are elected, and that men and women with more general education and teaching experience are selected.

In Arizona the office of county superintendent is handicapped as in other States in which superintendents are elected by the people. The tenure and method of selection do not appeal to many competent and desirable persons trained for educational work who might otherwise be available. Selection depends on the exigencies of a political election, and political expediency must govern more or less the action of superintendents so selected. The term of office—two years—is too short for constructive plans to be carried out, and as there is always the possibility of defeat at the end of the two-year term, there is little incentive to formulate far-reaching policies, and no opportunity to carry them out consistently and consecutively. The biennial election and the primary election preceding it consume several months of the superintendent's time and occur at his busiest season, when the schools are opening. Continuity of service also is a political accident. While some of the superintendents in office at the time of the survey

had served several years, more than half were serving their first term. On January 1, 1917, five new county superintendents assumed office. At every election some of the best-equipped superintendents are lost to the work, and even if their successors are equally well equipped educationally, time is lost while they are getting acquainted with their work and with the teachers and becoming acquainted with the machinery of the office.

Tenure.—The length of service in Arizona is given below. On or before the year 1881, of the 14 counties of the State 10 were organized. Since this date there have been elected 123 different persons to serve as county superintendents of schools, the majority being probate judges serving ex officio.[1] This includes those elected in 1916 to serve till January 1, 1919. Of the total number, 58, or 47 per cent, were reelected for the second term.

TABLE 10.—*Number of persons serving as county superintendent since 1881, including those now in office.*

Counties.	County organized.	Different county superintendents since 1881.	Number reelected for second term.	Proportion reelected.	Average term of county superintendent.	Maximum number of years served by one superintendent.
				Per cent.		
Apache	1879	13	4	33.3	2.92	8
Cochise	1881	13	5	37.7	2.92	.....
Coconino	1891	5	3	60.0	5.60	12
Gila	1881	12	6	50.0	3.17	.....
Graham	1881	10	5	50.0	3.80	8
Greenlee	1911	2	1	50.0	4.00	.....
Maricopa	1871	8	6	75.0	4.75	[1] 12
Mohave	1863	10	6	60.0	3.[illegible]	8
Navajo	1895	4	3	75.0	6.0[illegible]	10
Pima	1863	8	3	37.5	4.75	8
Pinal	1875	11	5	45.4	3.63	14
Santa Cruz	1899	6	3	50.0	3.33	8
Yavapai	1863	9	4	44.4	4.22	.....
Yuma	1863	12	4	33.3	3.17	8
						10
						8
Total	.....	123	58	.....	3.74	.....

[1] Was out 6 years; reelected.

Salary.—The average salary of the county superintendants in Arizona is $1,607. This is higher than in many of the elective States, but is lower than the importance of the position deserves. In two counties reporting to the bureau the annual salary is $900, in one $1,000, in one $1,200, in one $1,400, in three $1,500, in one $1,800, in three $2,000, and in two $2,400. The highest paid to a

[1] In the original school laws of the Territory of Arizona the probate judge was ex officio county school superintendent. On March 18, 1897, provision was made for the separation of the office of county superintendent of schools in counties of the first class. Maricopa, Yavapai, and Pima elected county superintendents in 1898; Cochise, two years later. Since statehood (February 14, 1912) the office of county superintendent has been a separate and distinct office.

county superintendent is very little higher than the lowest paid to any of the 12 city superintendents in the State who reported to the bureau, although the position is more important and its duties more difficult. The average salary of the 12 city superintendents is $2,641. Below are given the salaries of several county officers for four counties from which data were received. They indicate a false estimation of the relative importance of the positions.

TABLE 11.—*Salaries of county officers in four counties.*

County officers.	Cochise.	Mohave.	Yavapai.	Maricopa.
Judge	$4,000	$1,500	$2,600	$4,000
Attorney	3,000	1,800	2,400	4,000
Sheriff	4,000	3,600	4,000	6,000
Treasurer	3,000	1,800	2,500	3,000
Superintendent	2,400	900	2,000	2,400

Education.—In general and professional education and teaching experience the county superintendents of Arizona rank higher on the whole than those in most States where selection is by popular vote. There is, however, as might be expected, great variation in these essentials, showing that in some counties there is little appreciation of the need of educational experts in the office of superintendent. In two counties the superintendents had had no experience in educational work before assuming the position; one has been reelected, the other has not. The other 12 superintendents had had teaching experience varying from 6 to 30 years before election, although only one had had supervisory experience or definite preparation for the duties of county superintendent. Three had attended no school beyond the elementary school; one had one year, and one four years of high-school education, but no more. The remaining nine had from five to eight years of education above the elementary school; four report college degrees. Table 12 gives the number of years of school attendance above elementary, and the teaching and supervisory experience of superintendents previous to their election. They are arranged in order of years of education. The city superintendents in the State excel the county superintendents in general education, professional training and supervisory experience. This is shown in Table 15. Practically all of the city superintendents have had eight years of education above the elementary school, and many have had advanced courses and special professional preparation.

TABLE 12.—*Education and experience of county superintendents.*

Superintendent.	School attendance above elementary (years).	College degrees held.	Experience in teaching.[1]	Experience in supervising.[1]
No. 1	0		0	0
2	0		10	0
3	0		30	0
4	1		10	0
5	4		21	0
6	5		6	0
7	5		14	0
8	5½		15	0
9	6		0	0
10	6	B. S.	7	6
11	7		0	0
12	7	B. L.	12	0
13	7	B. L.	30	0
14	8	A. B.	9	0

[1] Experience previous to assuming present duties.

In January, 1917, 5 superintendents elected in November, 1916, replaced 5 of the 14 in this table. The qualifications of 2 of the new superintendents were lower than those of the superintendents whom they succeeded; of 2, equivalent; of 1, much higher.

TABLE 13.—*Salaries and total expenditures for office of county superintendents, November, 1916.*

Counties.	Tenure, in years.	Annual salary.	Traveling allowance, 1915–16.	Assistants.	Paid for assistants, 1915–16.	Total expenditures, 1915–16.
Apache	2	$1,000	$250	[1] 1	$200	$1,850
Cochise	2	2,400	250	1	1,200	4,900
Coconino	2	1,500	300	[1] 1	.....	2,825
Gila	2	2,000	300	.....	0	2,460
Graham	3	1,200	150	[1] 1	67	1,588
Greenlee	6	2,000	200	1	720	3,500
Maricopa	5	2,400	400	1	1,200	4,500
Mohave	3	900	250	.....	0	1,300
Navajo	2	1,400	400	.....	0	1,850
Pima	8	1,500	250	.....	0	1,750
Pinal	2	1,500	250	.....	0	1,700
Santa Cruz	2	900	250	[1] 1	.....	1,450
Yavapai	5	2,000	250	[1] 1	.....	2,435
Yuma	5	1,800	250	1	750	2,900
Average	.....	1,607	268	.....	.....	2,572

[1] Part time.

(B) RURAL SUPERVISION.

It is generally conceded that good supervision is necessary for efficiency and that no school system can be conducted satisfactorily without an adequate number of competent professional supervisors. In partial recognition of the importance of supervision every State in the Union has a superintendent and most States have supervisors of special subjects and have county, district, or township superintendents and supervisors. Nearly every city in the United States with a population of 2,500 or over has a superintendent of schools who gives all or most of his time to administration and supervision.

and nearly all cities and large towns have supervisors of special subjects or departments who devote all their time to supervision unhampered by administrative duties. In cities and towns superintendents and supervisors are expected to have education equivalent to at least eight years above the elementary school, professional training equivalent to that given in a normal school or a college or university department of education, and successful experience in teaching.

The county superintendents, who are the supervisors of rural schools in the counties of Arizona, have difficult problems to meet. The teachers are engaged by several different boards, each with different standards of selection and each paying a different salary. There is consequently little uniformity of ideas in regard to school methods and organization. Rural schools are generally widely separated, and only infrequent visits by the county superintendent are possible. Careful supervision requires under such circumstances special consideration and is very much more difficult to secure than in cities in which teachers are engaged on the nomination of the superintendent and in which minimum qualifications as to training and experience are prescribed, and reasonable salary and tenure during good service are assured. Frequent visits by the supervisor are possible also because distances between schools are not great and there are several teachers in each school.

The quality of the supervision which a county procures for its schools is governed by the qualifications of the superintendent, the amount and kind of work required, and the conditions under which it is accomplished. It is evident that the method of selection of the superintendent, if he is to administer and supervise schools successfully, is an important consideration in their proper conduct; and that tenure of office and salary must be of a nature to appeal to capable, experienced, and well-trained educators.

Rural schools in Arizona are supervised by political officers elected biennially at the general election in the same manner as other county officers are elected. The law requires no qualifications of an educational nature. A recommendation has been made in previous pages to remedy both of these difficulties. The law does not require the superintendents to devote their entire time to their work. Three of those in office in 1916 did not do so. One, receiving a salary of $900 a year, gave only three-fourths of his time; one, receiving $1,400, gave 90 per cent, and the third, receiving $1,500, gave but 50 per cent. The salary in the third case, at least, seems sufficiently high to justify one who accepts the position to spend his full time in performing its duties. Data in a following table show that the Arizona superintendents devote the greater part of their time to administrative duties and divide the remainder about equally between traveling and

classroom supervision. They visit each teacher usually twice a year (three visit but once) and spend from one to three hours in each classroom. They have from 10 to 90 school buildings to visit, the majority of which (50 to 90 per cent) are 1-teacher schools. The number of teachers to be visited varies in the different counties from 28 to 143. Four superintendents have full-time clerical assistants, 4 have clerical assistants part of the time only, the other 6 have none.

The county superintendent can not supervise as many teachers as the city superintendent, because of the distance which must be traveled to reach them. In rural schools from 30 to 40 teachers is about the maximum which one person can adequately supervise. It should not be forgotten that rural teachers need the assistance of a supervisor more than city teachers, for relatively few experienced and trained teachers are employed in rural schools. In Arizona, as in other States, it is customary for inexperienced and sometimes untrained teachers as well to serve their apprenticeship in rural schools, and to be employed by the cities when they have proved themselves efficient. Data given later show that the percentage of inexperienced teachers employed in rural schools of Arizona is much greater than in the city schools.

Another factor governing the quality of supervision is the number of new teachers, new to the district and new to the county superintendent, who are employed. Much of the work of the supervisor consists in familiarizing the new teachers with the conditions they must meet in their communities and with the kind of work as to the routine organization and teaching methods which he expects to be followed within the county. In 1915–16 in one county 80 per cent of the teachers were new to the district and 48 per cent new to the county.

Seven counties in Arizona have now more schools than one superintendent can properly supervise, and in but two of these are the salaries allowed large enough to enable the superintendents to have an assistant supevisor. The county superintendents in Arizona have a greater amount of office work than those in many other States, since they must draw warrants and keep financial accounts for the districts. As a result of this office work and of the long distances to be traveled to reach isolated schools, the supervision of teachers is entirely inadequate.

A general comparison of the efficiency of county and city supervision in Arizona may be made from the two following tables. City superintendents have better education, training, and experience, including supervisory experience, than the county superintendents. Of the 12 reporting 11 have the equivalent of a full college education. Three have assistant supervisors (principals and supervisors of music, drawing, manual training, and household economics not in-

cluded), and all but one have clerical assistants. The city superintendents visit teachers much oftener, as they have fewer teachers and fewer buildings to supervise. Also they select or help select teachers, and fewer inexperienced ones are employed in the city than in the country.

Members of the bureau staff made a study of the methods of supervision in nine counties of the State. This study and the visits made disclose the fact that while a number of superintendents in Arizona are unusually capable, conscientious, and enthusiastic, this is by no means true of them all, and that on the whole rural-school supervision in the State is ineffective and unsatisfactory.

The teachers' opinion of the supervision they receive is important. Of those not in supervised city systems and teaching at least their second year in Arizona, 8 per cent report that they received no visit from the county superintendent during the previous year; 36 per cent report 1 visit; 42 per cent, 2 visits; 7 per cent, 3 visits; and 6 per cent, more than 3 visits—31 per cent report they received no help from the county superintendent; 35 per cent report they received little help; and 34 per cent report they received much.

The committee recommends that Arizona schools be entirely removed from political influence; that the county superintendent be an educator by profession, not a politician; that he be appointed by a board who shall select him because of educational fitness and administrative ability; that he be paid a salary commensurate with the importance of the work he is engaged to perform, and that he be retained during good service; that duties specifically referred to herein and others of an educational nature concerning the county schools should be performed by or with the advice of the county superintendent.

TABLE 14.—*Work of the 15 county superintendents, reported by themselves.*

Counties.	School buildings in county.	One-teacher buildings in county.	Number of teachers under county superintendent.	Time spent in work.	Proportion of time devoted to—			Number of visits per year.	Average time per visit.	Percentage of teachers.		
					Visiting.	Administration.	Travel.			First year in county.	First year in district.	No previous experience.
					Per ct.	*Per ct.*	*Per ct.*		*Hours.*			
Apache	10	5	38	All	20	60	20	2	1	5	5	5
Cochise	20	12	143	All	25	50	25	1	1	45	33	.....
Coconino	17	12	46	All	25	50	25	2	½	37	37	25
Gila	37	20	110	All	33⅓	66⅔	.....	.....	1	.....	.....	.....
Graham	23	20	83	All	20	75	5	2	1½	16	55	16
Greenlee	22	14	26	All	10	80	10	1	1	20	25	2
Maricopa	65	15	126	All	.....	.....	.....	2	1½	30	40	20
Mohave	21	17	33	All	.....	25	.....	2	2	.....	.....	.....
Navajo	24	15	41	All	5	90	5	2	1½	41	60	14
Pima	30	24	36	All	25	75	.....	1	1	33⅓	33⅓	10
Pinal	23	22	21	All	10	.....	.....	2	.....	33⅓	44	33
Santa Cruz	25	23	28	All	.....	75	.....	2	1½	33⅓	33	.....
Yavapai	46	33	76	All	.....	33⅓	.....	2	2	40	54	15
Yuma	26	22	51	All	.....	.....	.....	2	2	33⅓	33⅓	8

TABLE 15.—*Data relating to 15 city superintendents, reported by themselves.*

Cities.	Number of school buildings in city.	Number of teachers under city superintendent.	Time spent in work.	Proportion of time devoted to—		Number of visits per year.	Average time per visit.	Percentage of teachers.	
				Visiting.	Administration.			First year in district.	No previous experience.
				Per cent.	*Per cent.*		*Hours.*		
No. 1	4	26	All	25	75	10	1	42	4
2	4	24	All	5	95	4	1	0	0
3	5	25	All	67	33	25	1	20	0
4	11	100	All	25	75			14	8
5	9	82	All	50	50	20		5	5
6	4	27	All	25	75	10		45	20
7	5	40	All	50	50	10		27	7½
8	1	12	[1]	33	67	40		20	0
9	12	90	All	80	20				
10	3	22	All					20	20
11	2	45	All						
12	2	21	All						
13	8	111	All	50	50			10	10
14	6	41	All	80	20	36	1	46	13½
15	3	9	All					22	0

[1] Have supervisory assistants in addition to special supervisors, as of music, etc. All but one have clerical assistants.

Section 3.—REVENUE AND SUPPORT.

(A) SOURCES OF SUPPORT.

The schools of Arizona derive their support principally from two sources—the State school fund and a county general school tax. In addition there is State aid for agricultural and industrial instruction in high schools, paid out of the State general fund; and many districts collect local taxes to supplement funds received from the State and county for the employment of special teachers and for other special purposes. Money for building and equipment is raised by local taxation. No portion of the State and county funds is supposed to be used on the plant except for general upkeep. The schools receive a portion of the rentals from forest reserves in counties in which the forests are located.

Revenue from State.—The State school fund consists of (1) a continuing appropriation by the State legislature of $500,000 per year, (2) annual rentals of State school lands, and (3) interest on the permanent school fund. The amount received from rentals for 1914–15 was $24,165.09. The permanent school fund is very small. It is derived from the sale of school lands, and on June 30, 1915, amounted to $9,542. It is invested at 2½ per cent. The interest received in 1914–15 was $147. Comparatively little school land has yet been sold. The total amount received by the State from the national forest fund was $63,398.

The total amount of the State school fund apportioned by the State to the several counties in the school year 1915–16 was $522,357.

This does not include the forest fund. In addition to this amount there was expended during the same year from the State funds the following amounts:

Salaries, State department of education	$6,557
Office expenses, State department of education	2,502
State board of examiners, salaries and expenses	1,175
State board of education, expenses	792
Traveling expenses, officers of State department	741
Teachers' pensions	3,000
Textbooks	31,476
Total	46,303

This, together with the amount apportioned, amounts to $568,660. In 1915–16 the State paid out of the general fund for agricultural and industrial education, previously mentioned, $44,824.

Revenue from county.—The total amount of county funds for 1915–16 was 57 per cent of the total expended on elementary schools. The rate of the county tax is fixed by the county board of supervisors. On or before the first day of August in each year each county superintendent is required to furnish to the board of supervisors an estimate of the amount of school funds needed the ensuing year. In making this estimate the superintendent takes into consideration estimates of each local board of trustees. The county superintendent's estimate must be sufficiently large to provide at least $35 for every child in average daily attendance during the six months showing the highest average daily attendance of the preceding school year. To this sum he must add a sufficient amount to make not less than $850, or more than $1,000 for each one-teacher school; also he must add to these amounts 10 per cent more to be used as a reserve fund to provide for increased enrollment in the several districts. Before the taxes are levied the board of supervisors subtracts from the estimate of the county superintendent the amount to be received from the State, and levies such rate as will raise the remainder. Part of the county funds is derived from a poll tax of $2 assessed on all males 21 to 60 years. If any district board of trustees states that it needs more money than would be provided by this general tax, the county superintendent so certifies to the county board of supervisors and the county board levies an additional special tax on the district.

The school tax of each county is collected by the county treasurer, who places it to the credit of the individual school districts as apportioned by the county superintendent. The treasurer keeps separate accounts of school moneys, and pays them out on warrants drawn by the county superintendent.

The county superintendent apportions to each district not less than $35 per capita upon the average daily attendance for the best

six months of the preceding year; the minimum apportionment to any district, however, being not less than $850. The reserve fund is apportioned later in the school year to districts which have maintained schools for at least five months and whose average daily attendance has been greater than that during the preceding year. The increased daily attendance is the basis of apportionment. Any unexpended portion of the reserve fund at the end of the year remains to the credit of the county school fund and is used during the following year in the general fund. Funds apportioned to the several districts not expended at the end of the year remain on hand to the credit of the districts.

The total amount raised by county taxes for school purposes for the year 1915–16 was $890,049.

Revenue from districts.—Special taxes may be levied in the local districts, as already stated, by the board of trustees to raise funds for special purposes, such as extending the school term, employing special teachers, repairs, equipment, etc. The amount so collected in the State for the year 1915–16 was $136,038. Much of this was raised in city districts to employ special supervisors, particularly of manual training and domestic science. Any district may, on the vote of the electors of the district, bond itself for building purposes.

Revenue for high-school purposes.—The high schools of the State are supported almost wholly from local funds raised by taxes on the property in the high-school district. High-school districts in some cases are elementary school districts also, but as a rule are union districts including two or more common-school districts. The total amount of money raised in 1915–16 by local taxes for high-school purposes was $305,210. In addition to this, high schools carrying out satisfactorily a program of industrial education receive from the State a reimbursement equal to the total amount expended for such work, up to a maximum of $2,500.

State funds.—Arizona, by providing from State funds an annual appropriation of $500,000 and special aid for agricultural and industrial education, is contributing liberally to the total cost of maintenance of its public schools, as compared with other Western States. A comparison with the other mountain States in regard to the total cost borne by the States in 1913–14, the latest year for which figures are available, follows. Arizona increased its amount to approximately 30 per cent in 1915–16.

TABLE 16.—*Percentage of public school cost paid by States.*

	Per cent.		Per cent.
Oregon	6	Washington	24
Colorado	7	Wyoming	25
Idaho	11	California	28
New Mexico	15	Nevada	31
ARIZONA	21	Montana	45
Utah	24		

Arizona's ability to support schools is shown by the following three tables:

TABLE 17.—*Number of men 21 years or over for each 100 children 5 to 18 years of age (1913).*

Utah	85	Washington	151
New Mexico	88	Montana	165
Idaho	113	California	169
Colorado	125	Wyoming	179
ARIZONA	120	Nevada	180
Oregon	148		

TABLE 18.—*Number of adults for each 100 children 5 to 18 years of age (1913).*

Utah	160	Washington	255
New Mexico	162	Montana	261
Idaho	190	Wyoming	269
ARIZONA	213	Nevada	269
Colorado	231	California	301
Oregon	253		

TABLE 19.—*Estimated true value of property for each child of school age, 5 to 18 (1913).*

New Mexico	$4,700	Oregon	$11,100
Idaho	5,900	Montana	12,300
Utah	6,300	California	15,500
ARIZONA	8,600	Nevada	28,400
Wyoming	10,200	Average for United States	7,337
Washington	10,400		
Colorado	11,100		

The following table shows how much the Western States spend on education per $100 of *assessed* valuation and also of *true valuation* as estimated by the United States Bureau of the Census. The figures are for 1912, the latest available:

TABLE 20.—*Expenditure for public schools in relation to taxable property, 1912.*

States.	Expenditure for public schools, excluding debt paid.	Valuation of all taxable property, in millions of dollars.		Expenditure for public schools for each $100 of valuation.	
		Assessed valuation (millions), 1912.	True valuation (millions), 1912.	Assessed valuation.	True valuation.
				Cents.	*Cents.*
United States	$482,886,793	69,453	175,425	69.5	27.5
Western Division:					
Montana	3,354,934	347	1,113	96.8	30.1
Wyoming	997,022	181	345	55.2	28.9
Colorado	6,527,569	422	2,286	154.6	28.5
New Mexico	1,112,840	72	502	153.6	22.1
ARIZONA	1,321,631	140	487	94.2	27.1
Utah	3,636,666	200	735	181.1	49.5
Nevada	625,562	101	441	61.9	14.2
Idaho	2,959,124	168	591	176.7	50.1
Washington	10,536,921	1,005	3,055	104.7	34.4
Oregon	6,095,111	905	1,843	67.3	33.0
California	23,976,621	2,921	8,023	82.1	29.9

The amounts that the State of Arizona expends for educational purposes and for all other purposes are stated below. It will be noted that the State expenditures for schools was approximately 20 per cent of the total of expenditures for the year 1915; that the amount expended on the two State normal schools and the State university was 18 per cent; the amount expended on the four State institutions (the insane asylum, industrial school, penitentiary, and Home for Pioneers) was 12 per cent of this total. In other words, the total expended on education and charities and corrections was a little larger than the amount spent for all other purposes. The moneys received from the Federal Government for the benefit of the agricultural and mechanical college ($60,000) and the amount received to the credit of the national forest reserve fund ($63,398), part of which was used for public schools, are not included in these figures.

EXPENDITURES OF STATE FUNDS, 1915.

State Hospital for Insane	$157,812
State Industrial School	50,687
State Penitentiary	101,927
Home for Arizona Pioneers	11,196
	321,622
North Arizona Normal School	88,214
Tempe Normal School	181,303
State University	197,069
	466,591
State school fund	508,205
Total of above	1,296,418
All other State expenditures	1,282,643
Grand total	2,579,061

(B) DISTRIBUTION OF STATE FUNDS.

The system of financing the schools of Arizona is on the whole satisfactory, much more so than that of most States. Approximately 30 per cent of the total amount expended on schools is contributed by the State; 61 per cent of the total is derived from county taxes; 9 per cent from local district taxes. Very little complaint was found relative to the method of raising funds. There was, however, considerable dissatisfaction expressed relative to the method of distributing the State funds to the counties. It is apportioned on the basis of the number of children 6 to 21 years of age. This method does not take into consideration the great variation in the ability of

the counties to support schools, as shown by their per capita valuation; nor does it take into account what the counties are actually doing in public education. The committee believes that this complaint is justified and recommends a change in the system of distributing the State funds.

It recommends:

(1) That there be paid to each county an amount equal to approximately $200 for every teacher employed in public elementary and secondary schools.

(2) That the remainder of the State school fund be apportioned among the counties on the basis of the aggregate attendance.

(3) Before distribution a portion should be withheld from each county sufficient to pay for the textbooks and other instructional supplies purchased by the State for the public schools in the county.

(4) That the support of the State department of education be provided for by direct appropriation from the State general funds as other State departments are supported and that the necessary funds for teachers' pensions and special aid of all sorts be provided also by special appropriation. This is now done in the case of aid for agricultural and industrial education in secondary schools.

The method of distributing the county funds is satisfactory under the present organization. The committee recommends, however, that the county system of administration be adopted. If this be adopted, the funds should be expended by the county board in such a way as to insure equally good schools as far as practicable in all parts of the county. As city districts employing superintendents giving their full time to administration and supervision would be independent of the county board of education in management, in the system recommended the county board should apportion to the city district an equitable amount of the county funds. Under present conditions the present basis (in proportion to the average daily attendance for the six months when the attendance is highest) is satisfactory. Even with the county system, local districts should continue to raise funds for special purposes and, upon majority vote of the electors, to issue bonds for building purposes.

The recommendation for changing the basis of apportionment of State funds is made on the generally accepted supposition that State funds are supposed to equalize the burden of supporting schools in the various counties because the State desires an equally well-educated population in all of its parts. Some counties must always have low valuation and a large school population, and even with high taxes have difficulty in raising enough money to support good schools. The reverse condition is also always found. That both conditions are found in Arizona is evident from the following table, which shows the assessed valuation, the number of children of school age, and the valuation per child of school age (6 to 21) for each county:

TABLE 21.—*Valuation by counties, 1915.*

Counties.	Total valuation as determined by State board, 1915.[1]	Number of children 6 to 21 years February, 1915.	Wealth per child 6 to 21 years of age.
Apache	$6,381,427	1,161	$5,496
Cochise	101,410,686	11,229	9,031
Coconino	17,306,189	1,181	14,654
Gila	42,251,511	3,685	11,493
Graham	10,627,679	2,959	3,592
Greenlee	28,065,064	3,538	7,932
Maricopa	73,362,415	13,533	5,421
Mohave	14,962,507	879	17,022
Navajo	8,137,123	2,211	3,680
Pima	26,007,756	5,806	4,479
Pinal	25,231,433	2,212	11,407
Santa Cruz	6,958,704	2,802	2,483
Yavapai	45,551,978	3,332	13,674
Yuma	14,277,942	1,943	7,348
Total	420,532,412	56,471	7,445

[1] From report of State board of equalization.

In Table 22 the counties are arranged in order of the valuation per school child 6 to 21 years. There is given also their valuation per school child in average daily attendance in schools during 1915–16. To raise a certain amount per school child Santa Cruz would have to make a levy seven times as large as would Mohave to raise an equal amount. To support schools for the children actually attending, Graham County would need a levy six times as great as would Mohave, if support depended wholly on county taxes.

TABLE 22.—*Valuation per school child and per child in average daily attendance.*

Counties.	Valuation per child (6–21).	Valuation per child in average daily attendance.
1. Santa Cruz	$2,483	$7,531
2. Graham	3,592	5,090
3. Navajo	3,680	6,169
4. Pima	4,479	9,338
5. Maricopa	5,421	10,245
6. Apache	5,496	9,075
7. Yuma	7,348	13,795
8. Greenlee	7,932	12,358
9. Cochise	9,031	15,900
10. Pinal	11,407	16,427
11. Gila	11,493	15,950
12. Yavapai	13,674	25,692
13. Coconino	14,654	22,953
14. Mohave	17,022	29,224

The distribution of the State funds on the census basis, the present Arizona plan, not only does not equalize the burden among the counties, as the above table shows, but it also does not contribute equitable amounts to the counties in proportion to what they are actually doing in education. The per capita cost of maintaining schools does not depend upon the number of children 6 to 21 living in the county or district, but upon the number who attend school,

the number of days school is maintained, and the number of teachers employed. A distribution on census basis takes none of these factors into account; this is particularly true when the census includes all the children from 6 to 21 years of age, or 5 years beyond the compulsory age limit and 2 years beyond the normal age of graduation from high school.

Table 23 gives the counties of the State arranged according to the property valuation per school child 6 to 21 years of age, the amount received from the State divided by the number of children in average daily attendance, and the amount received from the State divided by the number of teachers employed.

TABLE 23.—*Comparison of valuation per child, with amount received from the State divided by average daily attendance and by the number of teachers.*

Counties.	Assessed valuation per child (6–21).	Amount received from State for every child in average daily attendance.	Amount received from State for each teacher employed.
1. Santa Cruz	$2,483	$28.05	$539.96
2. Graham	3,992	13.42	316.15
3. Navajo	3,680	15.51	371.85
4. Pima	4,479	19.39	526.53
5. Maricopa	5,421	17.48	409.09
6. Apache	5,498	15.25	308.86
7. Yuma	7,318	17.36	382.40
8. Greenlee	7,932	14.40	419.58
9. Cochise	9,031	16.28	408.93
10. Pinal	11,407	13.65	292.52
11. Gila	11,493	12.87	374.57
12. Yavapai	13,674	17.37	317.73
13. Coconino	14,654	14.19	242.78
14. Mohave	17,022	16.49	325.20

Valuations as equalized by the State board of equalization.

Tables 24 and 25 give the counties arranged in order of the amount received from the State per child in average daily attendance and per teacher employed, respectively.

TABLE 24.—*The State fund received by each county per child in average daily attendance (1915–16).*

1. Gila	$12.87	8. Cochise	$16.28
2. Graham	13.42	9. Mohave	16.49
3. Pinal	13.65	10. Yuma	17.36
4. Greenlee	14.40	11. Yavapai	17.37
5. Coconino	14.49	12. Maricopa	17.48
6. Apache	15.25	13. Pima	19.39
7. Navajo	15.51	14. Santa Cruz	28.05

TABLE 25.—*The State fund received by each county per teacher employed (1915–16).*

1. Coconino	$242.78	8. Gila	$374.57
2. Pinal	292.52	9. Yuma	382.40
3. Apache	308.86	10. Cochise	408.93
4. Yavapai	317.73	11. Maricopa	409.09
5. Mohave	325.20	12. Greenlee	419.58
6. Graham	340.45	13. Pima	526.53
7. Navajo	371.85	14. Santa Cruz	539.96

It will be noted from the above tables that Santa Cruz County, which has the lowest valuation per child of school age, receives from the State the highest amount in proportion both to the number of children in average daily attendance and to the number of teachers employed. Graham County, however, which has the second lowest valuation, receives the second lowest amount per child in average daily attendance and the sixth lowest amount in proportion to the number of teachers. The reason that Santa Cruz, Pima, and perhaps other counties receive such a large amount per child in average daily attendance and per teacher employed is because the school enrollment and the average daily attendance are very low in proportion to the total number of children on the census. The figures showing the number of children enrolled and in daily attendance in public schools are shown in a later table.

The table below shows the proportional number of children in public schools, in private and parochial schools, and not in any school. They are taken from the official reports of the county superintendents and include all children 6 to 21 years or age. They are undoubtedly inaccurate in many cases, for several counties report that more than 80 per cent of the total school population are enrolled in school. Approximately 20 per cent of the population 6 to 21 years of age are over actual school age, and it is improbable that in any county over 80 per cent of the school census 6 to 21 years actually attend school.

TABLE 26.—*Percentage of population 6 to 21 years of age in schools and not attending school (1915–16).*[1]

Counties.	Attended public schools.	Attended private or parochial schools.	Did not attend school.
	Per cent.	*Per cent.*	*Per cent.*
Apache	77	7	16
Cochise	72	3	25
Coconino	70	11	19
Gila	80	1	19
Graham	78	6	16
Greenlee	76	1	23
Maricopa	81	4	15
Mohave	65	11	24
Navajo	72	14	14
Pima	57	12	31
Pinal	77	1	22
Santa Cruz	47	5	48
Yavapai	70	5	25
Yuma	78	1	21

[1] From the reports of the county superintendents to the State superintendent.

Because aggregate attendance data are not available, the exact amount can not be computed to show what each county in Arizona would receive if the State funds were distributed as recommended. However, the following table, in which average daily attendance is

used, shows very nearly the amount. It is computed for the State funds of 1915–16 and allows each county $200 for each teacher employed during the year, the remainder of the State funds being apportioned on the basis of the average daily attendance. Division on the average daily attendance basis and on the aggregate attendance basis would give the same results if the average number of days schools are maintained in all counties were the same. Aggregate attendance is equal to the average daily attendance multiplied by the average number of days in the school year; in reality it is the total number of days attended by all pupils. It may be noted that nine counties would have received under this system of distribution more than they did under the census basis of distribution, and five counties would have received less. The total amount taken away from these five counties and given to the nine counties would have been $28,053.

TABLE 27.[1]—*Amount from 1915–16 State funds each county would have received if apportioned $200 to each teacher employed, the remainder on the average daily attendance basis.*

Counties.	State apportionment in 1915–16 on census basis (6 to 21).	Amount if apportioned on teacher and attendance basis.	More than on census basis.	Less than on census basis.
Apache	$10,710	$12,670	$1,939	
Cochise	103,868	102,095		$1,773
Coconino	10,925	15,082	4,157	
Gila	34,086	39,534	5,448	
Graham	27,370	32,225	4,855	
Greenlee	32,727	34,091	1,364	
Maricopa	125,180	118,883		6,298
Mohave	8,130	8,972	842	
Navajo	20,452	21,625	1,173	
Pima	53,706	42,835		10,871
Pinal	30,460	25,875	5,411	
Santa Cruz	25,918	17,043		8,875
Yavapai	30,820	33,690	2,870	
Yuma	17,973	17,737		235
Total	[1] 522,357	522,357	28,053	28,053

[1] The figures include an apportionment made early in July, but carried on the books of the State department as 1915–16 funds.

(C) STATE FUNDS FOR SPECIAL PURPOSES.

Money for special purposes in education should be taken from the State treasury out of the general State fund rather than from the school fund. This is now done in the case of one appropriation only—that for industrial education. Other special funds (for the support of the State department, for State textbooks, and teachers' pensions) are taken from the school fund.

Unless the regular State fund remains intact for apportionment for regular school work, counties and districts will be unable to know what they are to receive. All special appropriations that may

be made from it decrease the amount available for apportionment.[1] At the same time the amount needed will increase, owing to the increase in school population. The State school fund is increasing, of course, through greater rentals and the sale of school lands; however, it does not seem probable that the rate of increase will be as great as the rate of increase in school attendance, at least for several years.

For this reason the committee recommends that the expenses of the State department of education, including salaries, be paid by direct appropriations, as other State departments are supported, and that money for special purposes, such as teachers' pensions, be provided by direct appropriation. The legislature should not attempt to determine the number of employees in the State department nor to fix the salaries paid the State superintendent and his assistants. These are matters for the State board of education. The appropriation for the department should be a lump sum, the State board having the same authority to determine the number of employees and to fix salaries within the appropriations that the board of regents of the university now has. Money required for textbooks may well continue to be paid from the State school fund before distribution, as also may money spent for other instructional supplies that may be furnished by the State department to all schools.

As already stated, the method of raising county funds seems very satisfactory. It assures sufficient money for all schools for ordinary maintenance and support. In large measure it is responsible for the excellence of the Arizona schools. While the present system of local administration continues, the present system of distribution is satisfactory. The change in the system of administration recommended would require slight changes in the system of distribution.

The principal complaints relative to the present financial system are:

(1) State and county funds in the hands of the county treasurer at the beginning of or early in the school year are not apportioned till early in the winter, usually in December. School districts are often without funds for several months unless an unexpended balance is on hand at the close of the previous year. This makes it neces-

[1] An example of this may be seen in the present pension system. The law provides that any person having completed 25 years of teaching service in Arizona may be retired by the State board and will then be paid from the State school fund $600 a year until death. In 1915–16 pensions were paid to five persons, the total amount being $3,000. In round numbers, $10,000 has been paid since the passage of the law in 1912. Reports received from approximately 80 per cent of the teachers in the State show that among them are 4 who will be eligible for pensions in July, 1917, and 50 who will be eligible in the next 10 years. The present Arizona pension system is unscientific and not in accordance with pension schemes generally recognized as acceptable. For information, see the discussion in Bureau of Education bulletin, 1916, No. 14, *State Pension Systems for Public-School Teachers.*

sary in many districts to borrow money in order to pay the salaries of the teachers and employees. One large city reports paying in the fall of 1915 nearly $800 in interest, having borrowed money from local banks at 8 per cent, while sufficient State funds were in the county treasury unapportioned, to have paid the teachers' salaries for the first month, saving one-half this interest. If taxes were made delinquent after September 1 instead of after December 1, money would be available at the beginning of the school year.

(2) District boards expend funds for whatever equipment they may think desirable, whether such equipment is of any value for instructional purposes or not. The complaint is general that many unwise purchases of this sort are made. One county superintendent writes, "My county has many thousands of dollars tied up in worthless junk, much of which has never been used." The inspection made by members of the bureau staff shows that these complaints are justified. The county superintendents draw warrants to be paid by the county treasurers on the order of the school trustees and theoretically approve all expenditures. In practice the approval in most counties is a mere matter of form. Few superintendents question the purposes for which the funds are expended, so long as they are for school purposes and no evidences of graft are manifest. It is doubtful under the law whether they have any real authority to do otherwise and a court decision should be had. Very much greater satisfaction would come if all instructional supplies were purchased in each county by the county superintendent.

(3) The State and county school funds are intended for salaries of teachers and other employees and for maintenance. If a balance remains in the school fund after the expense of maintaining the school for eight months has been actually paid, it may be used for repairing the schoolhouse, improving the school ground, purchasing school furniture, fixtures, equipment, and supplies, but not for building purposes or for paying interest on bonded indebtedness. It may remain as unexpended balance to be used the following year. In many cases it is used for paying rent where buildings for school purposes are rented. In some instances in the State, buildings have been erected for school purposes by private persons and rented to the school district with the understanding that after the payment of a specified rent for a certain number of years the building shall become the property of the district. In reality this is using State funds for purposes specifically forbidden by the law.

(4) Local districts are permitted by law to raise money for building by direct taxation or bond issue. The electors determine the location of the school buildings and the amount of money to be raised, leaving to the trustees the design of the building and its

erection. Trustees not familiar with the elements of modern school sanitation are erecting buildings as unsatisfactory as those erected a generation ago.

All of these defects may be remedied in large measure by the adoption of the county system suggested elsewhere in this report, making the county board of education, through the county superintendent as its executive officer, responsible for the purchase of all school supplies and other expenditures and requiring plans for buildings to be approved by the State Department.

Section 4.—URBAN SCHOOL DISTRICTS.

Twenty-four city districts in Arizona employ city superintendents, some of whom, however, devote only part time to administration and supervision. Members of the bureau staff visited schools in 19 of these cities. The equivalent of the full time of one person for 11 weeks was devoted to 12 of the largest cities, the time being spent in classrooms observing the instruction and in conference with superintendents and principals. In addition, the time of one person for three weeks was spent in inspecting school buildings in seven cities and in brief visits to the buildings in six others. Table 28 gives general data of the city elementary schools.

(A) GENERAL ADMINISTRATION.

Relation to the State and the municipality.—The public-school system in an Arizona city district is a State and not a municipal matter, the city schools being governed entirely by State law and not by special city charter provision. The city school district and the municipality may or may not have boundaries that are coterminous. Usually the school district is much larger than the municipality, in some instances twice as large. The State law for city districts in regard to the organization of the school board, its powers, duties, etc., is the same as for other school districts.

TABLE 28.—*Arizona cities, school year 1915–16.*

Cities.	Number of children, 6–21.	Number of children, 8–16.	Number enrolled.	Per cent enrolled to census, 6–21.	Average number belonging.	Per cent of attendance on average number belonging.	Average daily attendance.	Per cent of attendance on enrollment.	Per cent of attendance on census, 6–21.	Months school maintained.	Teachers employed.	Total expenditure.
1. Benson	217	141	167	76.9	121	91.4	111	66.4	51.1	9.0	3	$5,544.21
2. Bisbee	3,740	2,185	2,489	66.5	1,847	94.7	1,750	70.3	46.7	9.5	54	65,523.83
3. Chandler	395	268	412	104.3	294	93.0	272	66.0	68.8	9.0	12	15,532.39
4. Clarkdale	314	184	304	96.8	213	94.2	199	65.4	63.3	10.0	10	12,277.13
5. Clifton	1,520	882	1,130	74.3	815	96.0	785	69.4	51.6	9.0	31	37,047.29
6. Douglas	3,811	2,439	3,140	82.3	2,352	95.9	2,257	71.5	59.1	9.0	74	90,752.50
7. Flagstaff	646	370	402	62.2	261	92.0	241	59.9	37.3	10.0	14	20,788.15
8. Florence	437	286	354	81.0	274	95.6	262	74.0	59.7	9.0	12	14,277.48
9. Glendale	564	333	534	94.6	399	94.0	374	70.0	66.3	9.0	16	16,437.00

TABLE 28.—*Arizona cities, school year 1915–16*—Continued.

Cities.	Number of children, 6-21.	Number of children, 8-16.	Number enrolled.	Per cent enrolled to census, 6-21.	Average number belonging.	Per cent of attendance on average number belonging.	Average daily attendance.	Per cent of attendance on enrollment.	Per cent of attendance on census, 6-21.	Months school maintained.	Teachers employed.	Total expenditure.
10 Globe	1,563	1,065	1,317	84.2	1,013	96.0	976	74.1	62.4	10.0	28	$50,6[illegible]
11 Jerome	501	409	367	80.8	413	95.4	394	69.4	56.2	10.0	17	24,152.50
12 Kingman	325	162	236	72.6	166	95.3	158	70.0	48.6	9.0	6	6,651.54
13 Mesa	1,270	865	1,001	78.9	763	95.0	721	71.8	56.8	9.0	28	28,950.[illegible]
14 Miami	828	533	890	107.4	609	94.0	571	64.1	68.9	9.5	19	25,589.17
15 Morenci	1,298	814	1,410	108.6	861	95.0	814	57.7	63.1	9.0	19	26,714.40
16 Nogales	1,556	942	676	44.0	462	91.0	422	62.4	27.5	9.0	16	15,2[illegible]
17 Phoenix	5,828	3,675	3,635	62.3	2,632	95.0	2,510	69.5	43.0	9.0	105	115,278.22
18 Prescott	1,013	641	608	60.0	433	91.9	392	64.4	38.7	10.0	19	21,498.24
19 Safford	555	321	556	100.1	413	94.0	388	69.7	69.9	9.0	11	10,462.65
20 Tempe	738	464	643	87.2	516	95.0	488	77.4	67.4	9.0	21	20,112.[illegible]
21 Tucson	4,808	3,094	2,858	59.0	2,184	94.0	2,069	72.9	43.0	9.0	69	77,294.[illegible]
22 Williams	364	212	318	88.2	242	94.0	229	72.0	68.5	10.0	12	19,212.21
23 Winslow	1,143	533	712	62.2	560	96.0	538	75.5	47.0	9.0	18	18,926.15
24 Yuma	1,159	721	925	79.8	624	94.7	592	64.0	51.0	9.0	20	22,989.94

Relation to the county.—As previously stated, the county is the unit of taxation for elementary school purposes. City school districts receive their apportionment of the county funds on the same basis as rural districts; that is, at least $35 for each child in average daily attendance during the six months of the previous year which had the highest attendance. Also they receive a portion of the reserve fund if the average attendance is greater than during the previous year. Under this plan cities and the larger rural districts contribute to the support of some of the smaller rural schools, since every school must receive at least $850. The plan, however, is satisfactory to the cities. Often in other States city school boards and superintendents do not favor support by a county tax, on the ground that cities pay into the county treasury more than they receive from it. Not a word of disapproval of the county unit of taxation was heard from any city superintendent in Arizona.

The only State law applying exclusively to city schools is one permitting districts having an average daily attendance of 500 or more to employ school superintendents, thus relieving county superintendents of the supervision of these schools. In all the cities visited, practically the only relation the county superintendent bears to the city school system is that of apportioning the funds and of drawing warrants on the county treasurer for all expenditures of school funds.[1] The provision for employing city superintendents given above should be changed so that they may be employed for a smaller number of pupils. If this provision were strictly adhered to, few cities of less than 2,500 population could now employ superintendents.

[1] Urban and rural teachers both attend the county institutes held under the charge of the county superintendent.

Many small cities have an average attendance of from 150 to 200 and employ from 5 to 8 teachers. Such cities should employ some one to supervise instruction, for part time at least. This is especially true in Arizona, where the counties are large, and the county superintendent therefore is unable to give adequate supervision. Many small districts with 3 to 6 or 7 teachers now designate one as principal; however, the principals are seldom given the actual supervision of the work of the other teachers. If they were given authority and time for such supervision, much better work would result. There are several small towns and cities in Arizona close enough to each other so that a joint superintendent might be employed. The Mesa superintendent, for instance, might act also as superintendent of Alma.

A county board of education is recommended earlier in this report. If adopted, the relation of the city schools to the county would continue practically as at present. City districts would, as now, be directed by city boards of education; their superintendents would be practically independent of the county superintendents. The method of raising and apportioning funds would be unchanged.

(B) THE SCHOOL BOARD.

The boards of trustees for city schools are composed of three members elected at large for a period of three years in the same manner as the rural school trustees are elected. One member is elected each year at a special election in March. This makes a board of trustees in Arizona of fewer members than is found as a rule in cities in other States of from 2,500 to 25,000 population, which, as a rule, have from five to seven. No one could say that any particular number would be correct under all conditions, but the tendency throughout the country is toward the small board, and in the opinion of most students of school administration this is right.

The advantages of small boards may be summarized as follows: The responsibility is placed immediately on each member and not on an elusive "committee"; all business, not part of it, is covered by the entire board, and all members must be intimately familiar with all the business—finance, instruction, buildings, etc.; this arrangement insures better correlation and more harmonious expenditures, expedites business, and avoids shifting of responsibility. So far as can be learned the small board is entirely satisfactory in Arizona to superintendents, board members, and patrons. The board meetings attended by members of the bureau staff were conducted in an efficient manner. If all meetings are conducted with the same thorough consideration and dispatch, no additional members are necessary.

The method of selecting school board members by election at large, as is now done in Arizona, is the most approved method and the only feasible method when city school districts are not coterminous with the municipal district. Some objection to it was heard, but it is in accord with the general opinion that school affairs are important enough for consideration apart from the State, county, or municipal elections. In the special election, school issues are not overshadowed by less important ones. From all reports the school elections in Arizona cities are well attended, and much discussion concerning the policies for which the candidates stand committed usually precedes the election. The elections are held in the school buildings, and the five officers of the election are each paid only $3 a day, so the expense is slight.

The length of the term of office of trustees is so short that it is possible for a district to have an entirely new board every three years and its school policy completely changed every year. The tenure should be long enough to assure a settled policy. Frequent changes of board members mean frequent changes of policy. The term should be five or six years.

The Arizona board of school trustees selects a president and a clerk from its membership. The latter keeps a record of the proceedings of the board, an itemized account of receipts and expenditures of school moneys, and has other duties of an executive and secretarial nature. In small school districts he serves without pay; in districts with an average school attendance of 500 or more he may be allowed "a reasonable compensation for his work, not to exceed $100 a year." In school districts having a school population of 1,000 or over the board may employ a secretary, not a board member, at a salary not to exceed $900 a year.

In all city school districts of more than 1,000 school population such secretaries are employed, usually filling the dual position of clerk to the superintendent and secretary of the board. This plan is very desirable in a small city, since it tends to bring the superintendent in closer contact with the affairs of the board. There is no reason, however, why the salary should be limited to $900 a year by State law. The board should have power to fix this salary as it now fixes the salary of other employees.

Powers and duties of boards.—The powers and duties of school trustees, as authorized by the State school law, are broad enough to make the boards fully responsible for the schools maintained and for their quality. City boards, as already stated, may employ school superintendents. The law, however, does not fix the powers and duties of such superintendents. The boards are free to delegate to them such functions as they wish. Careful inquiry was made,

therefore, to determine whether they have those usual in other States and those in keeping with good administration.

The work of a board of education may be classed as legislative, executive, and inspectorial. In a city school system a board itself can not perform all three, because of lack of time and more especially because its members are not fitted to perform many of them. Therefore, the service of a superintendent with special training is required. Progressive boards limit their activities to the first and last. They employ superintendents as their executive officers. Legislative functions include the making of general policies and regulations relative to their execution. These policies rightfully concern the scope of the school system, selection of sites, the kinds of schools to be established and maintained, the facilities for work to be supplied, and the uses to which the school funds are to be placed. Inspectorial functions are to determine whether the policies and regulations are carried out.

The most important action of a board of trustees is the wise selection of a superintendent. The superintendent should be the administrative head of the school system. He should recommend and nominate all teachers, supervisors, and other employees; recommend the purchase of supplies, and have supervision of instruction, and should be held responsible for results.

The relation of a board of school trustees to its superintendent should not differ materially from that of the board of bank directors to the cashier or president of the bank, or that of the board of directors of any other private corporation to the superintendent it employs. The stockholders in a private company elect a board of directors to look after their interests in the conduct of the enterprise. These directors know but little about the technical details of the business. They employ a superintendent to attend to these things and hold him responsible for results. If it is found that the superintendent can not conduct the business satisfactorily, these directors dismiss him, and they find a successor who can.

In support of the recommendation that the school board confine its work to legislation and inspection, we quote a part of the recommendations adopted by the Department of Superintendence of the National Education Association regarding the relation that should exist between the school board and the superintendent of schools:

> The superintendent must be a man of superior training. He must be prepared to report plans of organization and to make a clear statement of results. He should organize the officers under him in such a way as to secure from them in detail an efficient type of organization, and he should secure from them adequate reports on which to base the statements which he presents to the board.
>
> In the performance of these functions the superintendent has a right to the initiative in technical matters. Specifically, he should have the sole right to

perform the following: (*a*) Recommend all teachers, all officers of supervision, and all janitors and clerks; (*b*) work out the course of study with the cooperation of the other officers of instruction; (*c*) select textbooks with the same cooperation; (*d*) have a determining voice in matters of building and equipment; and (*e*) draw up the annual budget.

These technical recommendations should always be reviewed by the board, and the approval of the board should be a necessary step for final enactment. This will insure the careful preparation of reports and the careful study of results. The superintendent is not to be authorized to conduct the system apart from the board, but he should be insured by definite forms of organization against interference which will defeat his plans and divide his responsibility.

Public business suffers when these technical matters are improperly handled. Let us assume two cases. In the first case the superintendent may be inefficient, and the board or some other active agency may cover over his inefficiency for a time by doing his work for him. The result will be disastrous in the end. It would be better for public business to bring the inefficiency to the surface as quickly as possible and remove the officer who can not conduct the system properly. In the second case the superintendent is efficient, but is hampered by lack of definition of his functions. The school system will lack in unity of organization and in harmony of internal operation. The system will be defective in so far as it is divided against itself.

Placing much responsibility upon the superintendent does not mean that there will be nothing for school trustees to do. Theirs are the problems of selecting school sites, of planning for the future, of letting contracts for new buildings and repairs, of determining the budget for elementary and high schools, of deciding upon the practicability of any expansion of the school system that involves additional cost, and of outlining the educational policy to be pursued. They should be acquainted with general school conditions, regularity of attendance, progress pupils are making, sanitary conditions, attitude of pupils toward work, attitude of teachers, etc. Otherwise they can not intelligently pass upon the work of the superintendent.

In the larger cities of Arizona the relationship of the board to the superintendent was usually found satisfactory. The school superintendents are not figureheads, but are the actual administrative officers of the systems. This is an indication of the character of the administration that has put these city systems into the high rank that they occupy. However, it was found in a majority of the small cities employing persons under the title "superintendent," that the boards act as their own executive officers, the superintendents were required to teach part or full time and performed few duties different from those of other teachers, except, perhaps, those pertaining to school discipline and records and reports of pupils. In one of the medium-sized cities the person employed as superintendent was found to have no functions except those of a supervisor of instruction. He had no voice in determining policies, nor in the selection of teachers, and no freedom in matters pertaining to school organization. His board is its own executive. The term

"superintendent" should not be used unless the board intends to give to the person employed the usual duties, both administrative and supervisory, understood to accompany the position. It is a waste of public money to employ a superintendent at a superintendent's salary and then confine his activities to things that could be done as well by a teacher at a teacher's salary.

(C) COST OF MAINTENANCE.

The following table showing cost for maintenance per pupil in average daily attendance has been compiled from the reports of nine Arizona city superintendents to the United States Commissioner of Education for the year 1915–16. The other city superintendents did not submit data in time to be used. Outlay for new grounds and buildings, alteration of old buildings, and new equipment are not included.

TABLE 29.—*Cost of maintenance of schools in nine Arizona cities.*

Cities.	Elementary schools.	Elementary and secondary schools.
Bisbee	$37.14	$49.55
Douglas	46.47	53.26
Globe	39.20	50.73
Phoenix	47.76	.....
Prescott	58.64	72.98
Tucson	36.27	40.65
Nogales	35.77	51.21
Tempe	44.41	60.65
Winslow	39.61	56.29

The cost of maintenance in several cities in other States is given below; the figures are for the same year and are computed on the same basis. What may be considered representative schools in the East and West were selected, and then the cost ascertained from fiscal and attendance statistics reported to the United States Bureau of Education for the year 1916.

TABLE 30.—*Cost of maintenance of schools in cities of various States.*

Cities.	Elementary schools.	Elementary and secondary schools.
Alhambra, Cal	$57.67	$73.99
Redlands, Cal	53.44	69.25
Pomona, Cal	53.50	101.30
Alameda, Cal	53.46	58.84
Houghton, Mich	49.44	57.72
Santa Cruz, Cal	48.91	97.97
Bloomfield, N. J	45.10	56.99
Eureka, Cal	41.23	59.11
Twin Falls, Idaho	40.77	49.99
Leavenworth, Kans	39.50	45.50
Beverly, Mass	39.00	45.56
Vallejo, Cal	38.00	46.28
Boulder, Colo	36.75	47.04
Danbury, Conn	36.62	39.37
Lewiston, Idaho	36.43	46.90
Attleboro, Mass	34.97	40.72
East Chicago, Ill	34.80	50.10

The median cost per child in the elementary grades for these 17 cities is $40.77, while for 9 cities in Arizona it is $39.61. The median for all schools, elementary and secondary, in the 17 cities is $50.10, while for 8 Arizona cities it is $52.23. This does not mean that the cities of Arizona are expending just the right amount, but that the practice in Arizona conforms to that of other representative cities. It is certain that none of the cities of Arizona can spend less without impairing the efficiency of the schools.

The following table (Table 31) shows in per cent what part of the expenditures in each of 9 city schools was devoted to each of the following items: General control (board of education and superintendent's office); instruction (salaries of teachers, supervisors, and principals, supplies of instruction); maintenance and operation of school plant (wages of janitors, fuel, light, water, repairs); auxiliary agencies (libraries, promotion of health, transportation of pupils); and miscellaneous. Figures are presented also for 44 cities of 10,000 to 25,000 population and 44 cities of from 5,000 to 10,000 population. These cities were selected as representative for a study of city school administration by the bureau in 1915 and published in a bulletin entitled "School Administration in the Smaller Cities."[1]

TABLE 31.—*Per cent of total cost of maintenance of Arizona city schools expended for control, instruction, etc.*

Cities.	General control.	Instruction.	Maintenance and operation of plant.	Auxiliary agencies.	Miscellaneous.
	Per cent.	*Per cent.*	*Per cent.*	*Per cent.*	*Per cent.*
Bisbee	5.83	79.17	14.33	[illegible]	0.0
Douglas	4.88	67.64	13.90	1.73	5.19
Globe	6.22	72.67	9.50	.22	5.55
Nogales	6.23	84.16	9.09	.21	.0
Phoenix	4.69	82.83	10.90	7.69	.67
Prescott	6.11	59.62	33.80	.47	.0
Tempe	6.60	79.72	12.82	.85	.0
Tucson	5.01	82.25	12.57	.23	.0
Winslow	10.50	66.20	18.88	3.58	.82
Median for Arizona	6.11	79.17	12.57	.61	
Median for 44 cities 10,000 to 25,000 population	4.80	80.77	13.55	.76	.38
Median for 44 cities 5,000 to 10,000 population	7.10	76.39	13.74	1.15	.76

The per cent devoted to instruction in the Arizona cities is practically the same as in cities in other States. The cost of textbooks is not included for Arizona cities, however, since the textbooks are furnished by the State. It will be noted that the Arizona cities are not expending as much proportionally for auxiliary agencies (libraries and promotion of health, etc.) as the other cities. It was evident that expenditures were not classified in exactly the same way in all cases. Some allowance must be made for this.

[1] See Bureau of Education Bulletin, 1915, No. 44, p. 115.

In most of the Arizona cities the school boards have adopted systems of bookkeeping that usually show in detail for what items the public funds are used. Several cities, however, have adopted no satisfactory system of bookkeeping. In some of them the only record kept by the clerk of the board is found on the stubs of his vouchers. Since all the funds pass through the office of the county superintendent and the county treasurer, there is apparently an excuse for no bookkeeping in some of the smaller cities, but there should be a complete system for administrative purposes. Accounting aids in discovering little leaks, and the accounts should be so kept that the cost per pupil may be determined for each item of expenditure, for each kind of school, and for each school building. If the cost of any item in one grade building is much above the average for the city, an investigation should be made at once.

All cities which do not keep accounts showing distribution of expense for the different kinds of schools and for the several buildings should adopt a system of bookkeeping with a distribution ledger conforming to the forms recommended by the Department of Superintendence of the National Education Association and used by the United States Bureau of Education and the Census Bureau in collecting fiscal statistics. It is recommended also that the State department make use of this form in collecting fiscal data from the city and county superintendents.

(D) INSTRUCTION.

Selection of teachers.—In 12 of the 19 cities visited teachers are employed by or upon the recommendation of the superintendent. This is evidence that the majority of the city school boards in Arizona have taken the first step necessary to provide the schools with good teachers. The method will undoubtedly be adopted by the seven other boards, which sometimes consult the superintendent in making appointments, but more often do not.

The next step in procuring good teachers is to require the superintendent to look carefully into the educational qualifications and experience of the applicants and to determine general fitness by observing them at work. This, of course, is difficult, since a large proportion of the available teachers live in other States. Superintendents select largely from testimonials necessarily, although one Arizona city employs no teacher whose work the superintendent has not observed. In several cities it was discovered that though there are few "home" applicants, some of the influential citizens have friends or relatives "back home," in the "East," "who are good teachers," and urge their election. Testimonials offered under these conditions should have little weight unless otherwise supported.

Education.—The kind of teachers now selected is shown by the following summary of their educational experience. The table shows the per cent of elementary teachers in each of 20 cities who have not attended school beyond the eighth grade, those who have attended less than four years additional, from four to five years, five to six years, and six or more years. Four years means the equivalent of graduation from high school, five years the equivalent of four years of high school and one year of standard college or normal school, or it may mean graduation from the five-year course in one of the Arizona State normal schools. Those with six years or more have had at least the equivalent of two years in normal school or two years in college.

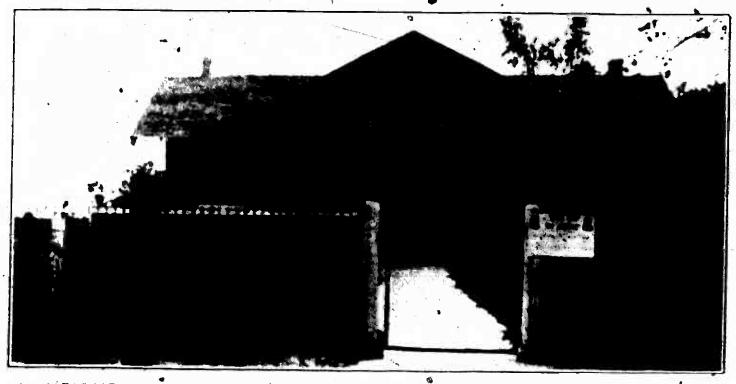
TABLE 32.—*Education of elementary teachers in 23 Arizona cities.*

Cities.	Years beyond the elementary school.				
	None.	Less than 4 years.	4 years.[1]	5 years.[1]	6 or more years.
	Per cent.	*Per cent.*	*Per cent.*	*Per cent.*	*Per cent.*
Benson	0	20	0	60	20
Bisbee	0	10	14	14	62
Chandler	0	0	13	50	37
Chilton	0	3	13	27	57
Douglas	0	12	12	12	64
Flagstaff	0	11	0	56	33
Florence	0	33	0	0	67
Glendale	0	0	0	50	50
Globe	0	16	27	16	41
Jerome	0	0	13	14	73
Kingman	0	0	33	0	67
Mesa	0	11	14	14	61
Miami	0	10	5	55	30
Morenci	0	10	5	35	50
Nogales	0	29	0	56	48
Phoenix	0	12	10	26	52
Prescott	0	19	12	19	50
Safford	0	14	29	14	43
Tempe	0	25	0	62	13
Tucson	0	20	9	24	47
Williams	0	14	14	29	43
Winslow	0	16	17	17	50
Yuma	0	10	10	0	80
Total	0	11	11	28	50

[1] Includes those with less than another full year.

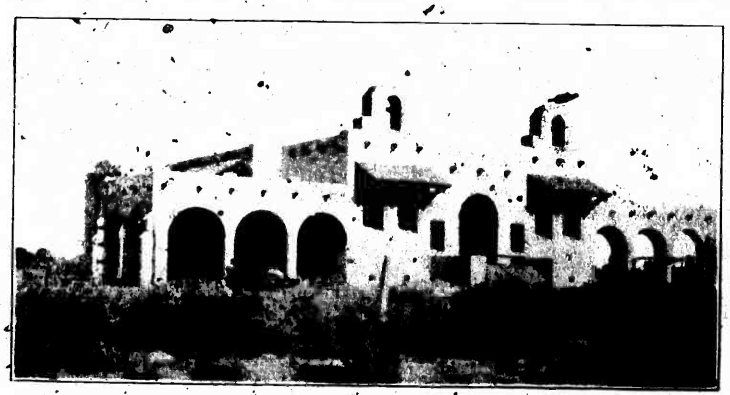
In five of these cities 100 per cent of the teachers are reported by the superintendents as normal-school graduates, and in 13 others 80 per cent or more are normal graduates. This is not apparent from the table because the superintendents included graduates of the Arizona normal schools from the five-year secondary and normal course, and also graduates of normal schools in other States where even less than five years above the elementary school is required for graduation. Practically all the teachers in the 24 cities hold first-grade certificates.

Measured by the standard of the cities of the United States as a whole, the educational qualifications of the city teachers of Arizona

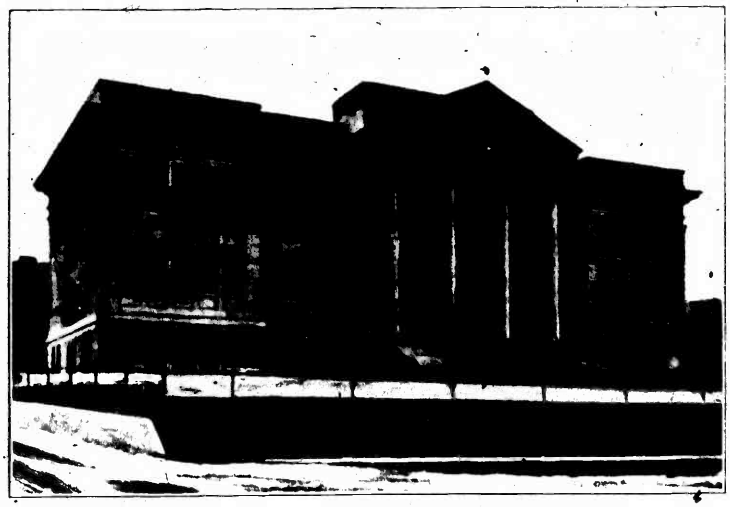


A. NEIGHBORHOOD HOUSE IN ROOSEVELT DISTRICT, MARICOPA COUNTY.

B. HIGH SCHOOL IN GLENDALE, MARICOPA COUNTY.

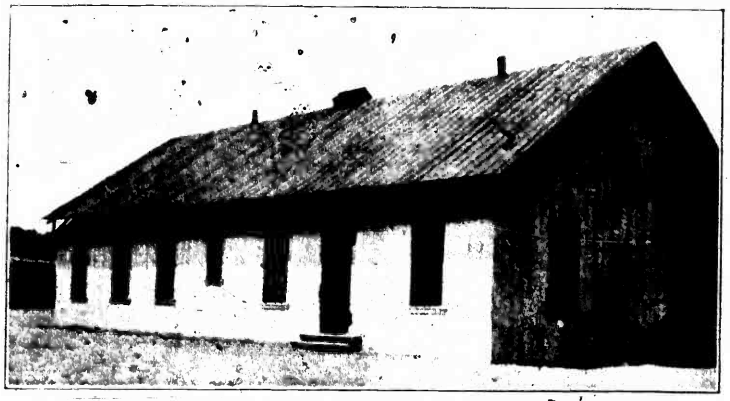


C. ALHAMBRA CONSOLIDATED SCHOOL, NEAR PHOENIX.

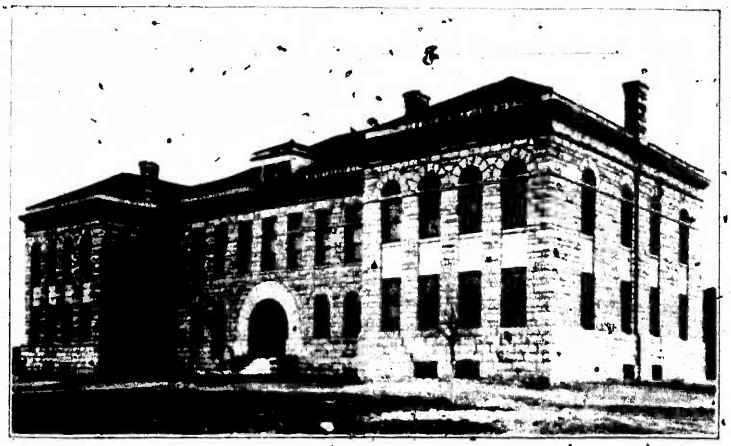


A. NEW HIGH SCHOOL AT MIAMI.

B. THE BUILDING OCCUPIES A COMMANDING POSITION IN THE TOWN.

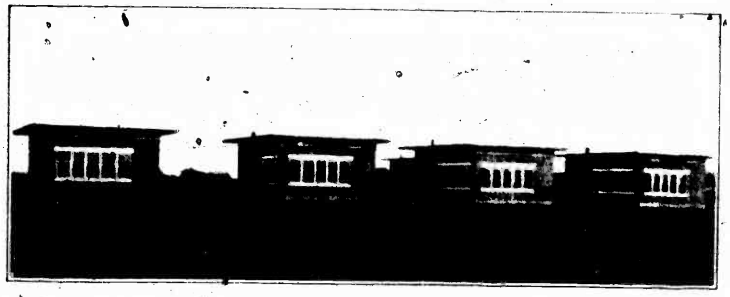


A. A SCHOOL ANNEX IN YUMA, SHOWING THE METHOD OF SHADING AND VENTILATING THE ROOF.



B. UNION HIGH SCHOOL, AT BENSON.

A. THE OLD SCHOOL BUILDING NEAR WHICH NEW UNIT BUILDINGS HAVE BEEN CONSTRUCTED.



B. THE TYPE OF UNIT BUILDINGS.

UNIT CONSTRUCTION AT GLENDALE.

are very good. There is, however, only one standard by which to measure, and that is the standard normal-school course of two years in addition to a four-year high-school course or at least six years' schooling beyond the eighth grade, including professional courses in education. This is the standard already reached in practically all the best city systems in the United States. In this connection it must be remembered that not all "normal-school graduates" have had two years' normal work in addition to a four-year high-school course. The State board of examiners has given many certificates as normal-school graduates to persons now teaching in Arizona who were graduated from courses of only three or four years beyond the eighth grade. Applicants for positions should be required to state definitely the schools attended and the time spent in each, and whether they were graduated. None, certainly, should be accepted as a normal-school graduate if from a school that falls below the standard of the Arizona normal schools.

Experience.—Seven per cent of the elementary teachers in the Arizona city schools are teaching their first year, 14 per cent their second year, and 79 per cent their third or more than their third year. The teaching force is therefore experienced. The corps of teachers changes rapidly, however, as 31 per cent are teaching their first year in their present position, 31 per cent their second year, and only 38 per cent are teaching in their present position their third or more than their third year.

There are no definite records to show why so many teachers change positions. If many are dropped for inefficiency, it is evidence that not enough care is exercised in their selection or that inadequate supervision is given. If successful ones resign to go to other schools for increased salaries, it would be economy to hold them by an increase of pay. All superintendents should keep records to show why teachers leave their positions. If this were done, it would be possible for a school board to determine whether it is within its power to correct the present evil of short tenure. This is one of the serious problems that confront the city schools of Arizona.

Salaries.—One of the potent means of procuring and retaining good teachers is the payment of salaries equal to or better than those paid in other cities of the country. One reason the Arizona cities are able to procure teachers with a high standard of educational and professional preparation is that the salaries paid rank well with those in other States. The following table shows the median salaries paid in each of 15 Arizona cities and in 15 other cities selected at random from those of the Pacific and Mountain States.

TABLE 33.—*Median salaries in cities of Arizona and other States.*

Phoenix	$900	Alameda, Cal.	$1,100
Globe	900	Missoula, Mont.	1,080
Nogales	900	Stockton, Cal.	1,020
Miami	900	Long Beach, Cal.	1,000
Prescott	863	Alhambra, Cal.	998
Tempe	855	Vallejo, Cal.	960
Douglas	855	Reno, Nev.	900
Winslow	850	Boise, Idaho	900
Flagstaff	835	Everett, Wash.	900
Clifton	810	Great Falls, Mont.	900
Bisbee	810	Pomona, Cal.	900
Morenci	810	Laramie, Wyo.	891
Jerome	810	Bozeman, Mont.	880
Tucson	810	Aberdeen, Wash.	770
Mesa	765	Boulder, Colo.	765

When compared with eastern cities of the same size, the Arizona cities rank high as to salaries. Otherwise it would be much harder to procure teachers from the East as well trained as are those now found in the cities of Arizona. Many teachers say that when accepting positions in Arizona they were attracted by the fact that salaries are higher than in the East, but did not appreciate that the amount they have to pay for room and board is also much larger. In some of the cities it is very difficult for teachers to find boarding places except at hotels and restaurants. Many report paying as much as $40 and $45 a month for room and board and with only fair accommodations. That they are not overpaid is evident when the salaries of elementary teachers are compared with the salaries paid stenographers, bookkeepers, and others. In six cities in which data were collected the mean salary of stenographers is $1,065; bookkeepers, $1,200; policemen, $1,200; miners, $1,350; carpenters, $1,350; mechanics, $1,500; painters, $1,200; printers, $1,350; and elementary teachers, $850.

(E) SUPERVISION OF INSTRUCTION.

The city superintendents employed in Arizona, on the whole, are well qualified for supervisory work. In the 12 larger cities and in some of the smaller they have full authority over the instructional work of the school, with practically no limitations on the part of the boards. In a few of the smaller cities visited, as previously stated, the superintendents assume no supervision of the work of the other teachers, nor are they authorized or expected by their boards to do so. Data relative to the city superintendents in 15 cities are given in Table 34.

The effectiveness of the supervision depends largely upon the time which the superintendent can devote to classroom visiting. Table 34 gives approximately the proportionate part of the superintendent's time given to administrative work and to observation of teaching. Of the 24 persons employed as city superintendents, 13 give their entire time to the administrative and supervisory work of the office; the others give part time, serving also as high-school principals or as regular teachers. These are of course in the smaller cities.

The superintendent of Flagstaff, for instance, devotes one-third of his time to teaching, the superintendent of Kingman teaches three-fourths of his time, the superintendent of Chandler teaches three classes daily, the superintendents of Benson, Miami, Kingman, Florence, and Nogales are high-school principals as well as superintendents. A man is employed at Holbrook under the title of superintendent who is required to teach the entire school day and gives therefore practically no time to supervision. In two of the 13 cities with full-time superintendents assistant superintendents or grade supervisors are employed, one in Bisbee, and two in Phoenix.

All 13 cities employ special supervisors of music and drawing. In several smaller cities the work through the grades is arranged in departments, permitting the teaching of music and drawing by one teacher especially qualified. Other subjects are taught by the regular classroom teachers. In a five-room building at Snowflake, for example, an extra teacher is employed to teach music in all rooms, and to take the classes of the principal for two periods, which he devotes to penmanship instruction for all classes above the second grade. This plan has much to commend it, and in the cities visited it was giving excellent results. It makes unnecessary the employment of special supervisors of these subjects. Clifton employs supervisors of manual training and domestic science, Douglas a supervisor of physical education and hygiene, Mesa a supervisor of primary work, Prescott a supervisor of primary instruction, Tucson two supervisors of manual training and two of domestic science, and Phoenix a supervisor of primary instruction, three supervisors of manual training, and three of domestic science. Full-time clerical assistants are furnished in Bisbee, Clifton, Douglas, Globe, Phoenix, Tucson, and Winslow; part-time assistants are furnished in Jerome and Prescott. In this latter city the kindergarten director acts as clerk to the superintendent in the afternoon; and high-school commercial pupils do stenographic work and typewriting for his office.

TABLE 31.—*City superintendents, assistants, and supervisors.*

City.	Salary.	Additional duties to those of superintendent.	Buildings.	Teachers.	Assistant superintendents.	Clerical assistants.	Supervisors.[1]
[illegible]	$1,800	Principal of high school	1	10	0	0	
[illegible]	3,200	None	9	52	1	1	Primary; M.; D.; M. T. (2); D. Sc.
Chandler	1,350	Teaches one-half time	3	14	0	0	
Clarkdale	2,000		1	13	0	0	M.; D.; and primary.
Clifton	2,800	None	6	41	0	1	M.; D.; M. T.; D. Sc.
Douglas	2,700	None	12	60	0	1	M.; D.; Ph. Ed.
Flagstaff	1,750	Teaches one-third time	1	12	0	0	M. and D.; D. Sc.
Florence	1,800	Principal of high school	2	16	0	0	M. and D.; M. T.; D. Sc.
Glendale	1,800	Teaches one-half time	1	14	0	0	M. T.; D. Sc. (part time).

[1] M. indicates supervisor of music; D., of drawing; M. T., manual training; D. Sc., domestic science; Ph. Ed., physical education.

TABLE 34.—*City superintendents, assistants, and supervisors*—Continued.

Cities.	Salary.	Additional duties to those of superintendent.	Buildings.	Teachers.	Assistant superintendents.	Clerical assistants.	Supervisors.
Globe	2,000	None	7	45	.....	1	M.
Jerome	2,550	None	3	22	.....	(1)	M.; D.
Kingman	2,500	Principal of high school; teaches three-fourths time.	3	9	0	0	
Mesa	2,400	None	5	40	.....	.....	M.; D. Sc.
Miami	.....	Principal of high school	4	29	0	0	
Morenci	2,700	None	2	20	0	0	
Nogales	2,500	Principal of high school	4	27	0	0	M.; D.
Phoenix	4,000	None	11	100	2	1	M.; D.; M. T. (3); D. Sc. (3); primary.
Prescott	2,400	None	4	26	0	(1)	Primary; M.; D.; M. T.; D. Sc.
Safford	2,000	None	1	17	0	0	M. T.; D. Sc.
Tempe	2,100	None	4	26	0	0	
Tucson	3,000	None	8	111	0	1	M.; D.; M. T. (2); D. Sc. (2).
Williams	1,600	Teaches three-fourths time	1	13	0	0	M. and D.; M. T.
Winslow	2,640	None	5	27	(1)	1	
Yuma	2,000	None	4	21	0	0	

[1] One part-time assistant.

Most of the Arizona cities have adequate supervision. In those larger than can be adequately supervised by a single superintendent, the needs are met in a very effective and economical way by the employment of assistant superintendents or supervisors, as shown in Table 34. In four cities supervisors of instruction for the first four grades are employed. In Phoenix a supervisor of instruction for the first four grades is employed and the assistant superintendent is supervisor of the next four grades. In a city with grade buildings of 16 or more rooms, effective supervision may be had through supervising principals in each building. If the school buildings are small, as they are in most Arizona cities, the principal of each building should have some time free from teaching to look after routine matters and to supervise. To employ a principal to devote his entire time to supervision of instruction for each eight-room building is uneconomical and unnecessary. In cities of 10,000 population or even larger one supervisor of primary instruction for all buildings is usually sufficient, the superintendent himself supervising the instruction in the upper grades.

In all Arizona cities where there are many Spanish-speaking Mexican children in the lower grades, the primary supervisor employed should understand how to teach the English language to such children. Many of the Arizona teachers are from States not in the Southwest; they do not know the Spanish language, have not taught Mexican children, and have had very little or no experience in teaching any children from homes where foreign tongues are

spoken almost exclusively. Several years' experience is often necessary before good work can be done by such teachers. Much could be saved by the employment of a supervisor with the qualifications described.

As previously stated, superintendents in cities the size of those in Arizona should devote much of their time to classroom visitation, even if there are supervising principals or primary and grammar grade supervisors. From reports submitted by city superintendents it appears that they give to classroom visitation from one-twentieth to four-fifths of their time, the median being about three-tenths.[1] One superintendent who has about 25 teachers under his supervision reports that last year he visited each classroom 10 times and averaged 15 minutes each visit. Thus, a total of about 63 hours, or 10 school days out of 180, were devoted to visiting teachers for the purpose of supervising instruction. In contrast another superintendent in a city of the same size reports that he visits each classroom about 25 times a year an hour at a time, a total of about 100 days a year in classroom supervision. In the former school the superintendent is not at all familiar with methods and results; in the latter the superintendent knows what each teacher is doing. The inspection shows that the instructional work under the latter superintendent is of a much higher grade than that under the former.

In larger cities where assistants are employed the superintendents themselves need not and can not give as much time to classroom visiting as in smaller cities; in fact, they can not do so and attend properly to the administrative work of their offices. The superintendent of Phoenix, with 100 teachers, spends one-fourth of his time in visiting; the superintendent of Winslow, with 25 teachers, spends two-thirds of his time visiting. The superintendent referred to above who devotes but one-twentieth, or 5 per cent, of his time to supervision, has no assistant, clerical or other. He spends about the equivalent of 10 days each year observing classroom instruction, or about two hours with each teacher during the year. He should spend at least 10 times as much time with his teachers. That he may do this, it would be economy to employ a clerical assistant to relieve him of office work.

Standard achievement tests similar to those used by many superintendents throughout the country are used in Chandler, Douglas, Globe, and Mesa. This plan is recommended for all cities. Standard tests show teachers whether any phases of their work are neglected, whether others are overemphasized, and how the attainments of their pupils compare with those in other schools. Through them, superintendents may diagnose effectively the results of teaching methods

[1] Figures given in Table 15 on page 59.

used by the different teachers. If all superintendents in the State would use the same tests, a norm for the State could be established which would have value for comparative purposes and could be used to arouse among teachers and pupils increased interest in school work, particularly in the necessary drill in fundamentals which are usually dry and uninteresting.

In view of the fact that superintendents in the large cities must be chiefly administrative officers, and that it is practically impossible to employ efficient supervising principals for each building, it is suggested that school boards in cities with a population of 15,000 or more employ an expert supervisor of instruction. This person should have no administrative duties whatever, but should give his whole time to the studying of problems of instruction. He might be called an assistant superintendent.

He should have a knowledge of the best methods of teaching, the best books, and supplementary and illustrative materials. These he should make available to the teachers. He should devise plans for making all teachers in the system familiar with the best methods of the best teachers in the system. He could investigate cases of both backward and bright children and determine methods and subject matter suited to them. He could work out with the teachers such problems as—

(*a*) Courses of study for Mexican children in English, handwork, arithmetic, hygiene, citizenship, etc.
(*b*) A better basis for the apportionment of time to the different subjects.
(*c*) A better system of grading children in their classroom work.
(*d*) Standards of proficiency for each school.

(F) WIDER USE OF THE SCHOOL PLANT.

Evening schools.—The cities of Arizona are beginning to realize that the school buildings are public property and that adults as well as children should use them. Only six cities have yet organized evening classes for adults. In those cities the results have been most gratifying in numbers enrolled and in the attainment of students. Last year the evening school enrollment at Douglas was 150 and at Bisbee 624. There were also evening schools at Winslow, Tucson, and Phoenix. If evening schools can be maintained in these cities, why not in all? Without doubt many young men and women in every city of Arizona would like to continue their elementary education and take up the study of bookkeeping, stenography, typewriting, drafting, Spanish, English, and other high-school subjects. In cities with a large foreign population some would avail themselves of an opportunity of learning the English language. In two cities in

which evening schools have been organized, several Mexicans are enrolled in the English classes. The writer visited several of these classes and found that they had made great progress.

One superintendent reported that there is no demand for evening schools in his city. But the question should be, Is there need of evening schools? If there is need, the school authorities should create the demand. Let the school board announce through the papers and on placards in English and in Spanish that evening schools will be open on a certain date and then observe whether there is a demand. In many cities throughout the country where this plan of advertising has been tried the demand for evening schools at once became evident. One superintendent said that he did not think it possible to organize an evening school until he had announced that such a school would be organized. Promptly a number of young men and women asked to be enrolled in the evening classes.

Use for general community purposes.—In the cities of Arizona it is possible to build up a stronger community interest than in small cities located near large ones. In every city there are many organizations, each working for the betterment of its members and of the city, but there should be some centralizing force, some common interest, some way of getting all the people together. President Woodrow Wilson said a few years ago:

> It is necessary that certain portions of the community should be linked with other portions; it is necessary that simple means should be found by which by an interchange of points of view we get together; for the whole process of modern life, the whole process of modern politics, is a process by which we must exclude misunderstandings, exclude deadly rivalries, make men understand other men's interests, bring all men into common counsel, and so discover what is the common interest.

These things may be accomplished by permitting the people of a community to meet in a building dedicated to all the people. There is but one logical place to discuss community matters, but one logical place for the expression of the social and recreational life of the community; that place is the public-school building; in small cities, the public high-school building.

In several cities in Arizona the school authorities have opened the school buildings for political meetings and for educational, social, and recreational purposes. The opening of the building for political meetings held under responsible authority is to be commended, especially if the meeting is for the entire body politic of the community. When a question affecting the entire community, as issuing bonds for street improvement or for school buildings, is up for approval or disapproval at the polls, the question should be discussed not on street corners or in rented halls by different groups of people,

but by all the citizens. The affairs of a community are not for political parties or for cliques any more than the affairs of a private corporation are for a clique of stockholders or directors. The place for discussion is in the assembly hall of the school building.

The school buildings of a community should also be open to the public for social and recreational purposes, so that the people may come together for a good social time and for the purpose of becoming acquainted. The gymnasium of the high school should be used by the community for social affairs and the auditorium for public lectures.

To show what is possible in using the school building for community purposes the following statistics for Winslow are presented for the year 1915–16:

Use of Winslow school buildings for community purposes.

	Times building was used.
Regular night school	90
Lectures	12
Entertainments	6
Society meetings (adults)	18
Civic occasions, mass meetings, public discussions	1
Athletics, games, folk dancing	160
Clubs or groups	70
Rooms for quiet games	3
Dancing (social)	19
Social occasions (parties, banquet, etc.)	8
Total	387

One or two other schools are doing almost as well and others are beginning to make the school building contribute to the needs of the social and recreational life of the community.

Parent-teacher associations are organized in several of the cities. The superintendents of Phoenix, Bisbee, Prescott, Winslow, Douglas, Globe, Chandler, and Kingman report that such associations use the school buildings regularly for meeting places. Clifton reports the school buildings used for school entertainments and for meeting places for various associations and clubs. Kingman reports the high-school building used by the woman's club for their meetings and available for all purposes deemed to be of benefit to the community. Flagstaff uses the school buildings for woman's clubs, Sunday school, and public entertainments. Prescott uses the building for social and athletic activities.

Section 5.—HIGH SCHOOLS.

(A) KINDS AND LOCATIONS.

Kinds of high school.—The State law provides for single high-school districts, union high-school districts, and county high-school districts. Any single-school district having an average daily attendance of 200 or more pupils in elementary schools may, by a majority vote of the qualified school electors of the district, establish and maintain a high school. Such a district becomes then a "single high-school district." Two or more adjoining school districts having a joint average daily attendance of 200 or more pupils may unite for high-school purposes. They then form a "union high-school district." In any county wherein no high school has been established the board of county supervisors may in their discretion, or must upon petition signed by 15 per cent of the registered voters of the county, call an election to determine whether or not a county high school shall be established. If the vote is favorable, the county becomes a "county high-school district." Single district high schools and union high schools may be later established in the county, the districts establishing them being no longer included in the county high-school district. Mohave County has organized a school under this provision. Apache is now the only county without a public high school.

High schools in the State are as follows:

Single-district high schools: Bisbee, Clifton, Clarkdale, Douglas, Globe, Jerome, Miami, Morenci, Nogales, Prescott, Safford, Tombstone, Tucson, Winslow.

Union-district high schools: Benson, Duncan, Florence, Glendale, Mesa, Phoenix, Tempe, Willcox, Yuma.

County high school: Kingman.

In addition to the above, high schools are maintained by each of the two State normal schools, and there are several public schools giving two or three years of high-school work, such as those at Metcalf, in Greenlee County; Alma and Chandler, in Maricopa; Williams, in Coconino; and Holbrook, in Navajo. Private academies at St. Johns, Apache County, Thatcher, Graham County, and Snowflake, Navajo County, make high schools at those places unnecessary at present. Parochial schools and academies in several cities are doing high-school work.

Table 35, following, contains statistics of public high schools reported by the county superintendents in 1915–16. No high school was reported by the Santa Cruz superintendent, although there is a 4-year school at Nogales, with 4 teachers and 51 pupils. Table 36 includes data for the 24 individual schools.

TABLE 35.—*Statistics of public high schools, reported by county superintendents, 1915–16.*

Counties.	Number of high schools.	Total enrollment.	Average number belonging.	Average daily attendance.	Per cent of average daily attendance.	Number of teachers.	Total cost of maintenance.	State aid.	District taxes.	Number of male teachers.	Average monthly salary.	Number of female teachers.	Average monthly salary.
Apache	[1] 0												
Cochise	5	604	482	458	95	42	$75,085	$8,715	$83,019	19	$151	23	$123
Coconino	[2] 0												
Gila	2	194	160	153	96	17	36,793	3,400	41,589	9	132	8	112
Graham	[3] 1	74	52	50	95	4	4,436	248	4,436	1	150	3	85
Greenlee	1	136	94	86	92	13	26,957	4,710	41,503	7	147	12	115
Maricopa	4	1,348	1,125	1,074	95	58	115,551	10,000	111,950	27	140	31	116
Mojave	1	24	20	19	93	2	3,463	2,500	1,500	1	120	1	110
Navajo	[4] 1	102	83	79	95	8	14,716	2,500	12,389	4	152	4	114
Pima	1	298	249	240	96	11	17,000	2,500	18,351	3	140	8	136
Pinal	1	46	38	36	95	11	8,177	0	10,085	2	100	4	75
Santa Cruz	[5] 0							1,777					
Yavapai	2	178	115	110	97	10	27,334	3,474	26,411	3	160	6	125
Yuma	1	139	114	105	84	8	15,639	2,500	13,443	2	165	6	110

[1] St. John Academy is located at the county seat.
[2] The State normal school at Flagstaff maintains a high school which is attended largely by county children. At Williams a two-year high school is maintained.
[3] Gila Academy is located at Thatcher.
[4] Snowflake Academy, located at Snowflake.
[5] None reported, but there is a high school at Nogales, with 51 pupils and 1 teachers.

TABLE 36.—*Arizona four-year high schools—Data from annual reports of principals to Bureau of Education, 1915–16.*

High schools.	Kind of districts.[1]	Days in year.	Number of teachers.		Number of pupils.			Number of graduates, 1916.		
			Male.	Female.	Boys.	Girls.	Total.	Boys.	Girls.	Total.
Benson	U. D.	170	3	3	22	33	55	0	2	2
Bisbee	S. D.	180	9	5	96	135	231	15	10	25
Clifton	S. D.	178	4	4	37	33	70	2	3	5
Clarkdale	S. D.									
Douglas	S. D.	169	7	7	107	131	238	15	12	27
Duncan	U. D.	170	2	2	15	21	36	0	2	2
Florence	U. D.	172	3	5	23	33	56	5	2	7
Glendale	U. D.	173	3	2	54	63	117	9	5	14
Globe	S. D.	180	6	6	43	65	108	7	7	14
Jerome	S. D.	200	1	2	12	11	23	2	1	3
Kingman	Co. D.	180	1	1	11	16	27	1	1	2
Mesa	U. D.	180	7	6	90	113	203	9	22	31
Miami	S. D.	175	1	2	27	25	52	0	1	1
Morenci	S. D.	162	1	1	19	10	29	0	4	4
Nogales	S. D.	172	2	2	16	35	51	1	1	2
Phoenix	U. D.	165	19	18	410	500	910	45	49	94
Prescott	S. D.	181	3	5	60	86	146	9	16	25
Safford	S. D.	172	2	4	14	32	46	0	0	0
Tempe	U. D.	170	3	5	46	47	93	8	5	13
Tombstone	S. D.	170	2	0	12	14	26	0	0	0
Tucson	S. D.	165	4	8	134	119	253	20	14	34
Willcox	U. D.	171	2	3	21	47	68	0	5	5
Winslow	S. D.	180	2	3	47	65	112	2	14	16
Yuma	U. D.	170	2	5	52	86	138	2	8	10
Total			92	103	1,359	1,740	3,099	152	184	336

[1] Union districts, single districts, or county districts.

No data could be obtained to show accurately the accessibility of high schools to the children of the State outside of cities. An estimate has been made and is given below. It shows that a large number of children are not within riding or driving distance of high

schools and must be deprived of high-school education unless their parents can send them away from home to attend private schools or to board in the cities in which high schools are located. Table 37 gives some idea of the proportion of the total population and the proportion of total area located within a reasonable distance of public and private high schools. The data in the table were obtained in the following manner: With the location of each of the 29 public or private high schools or academies in the State as a center, a circle was drawn having a radius of 10 miles. The table shows the area included within the 10 mile radius of the 29 high schools in the several counties and the approximate population of the territory included, according to the census of 1910. So far as possible all precincts whose population is given in the census are included. In addition to the high schools included in the summary and on the map (p. 92), some schools which are not full four-year high schools offer work from one to three years above elementary schools. Those at Chandler, Williams, and Metcalf are examples.

TABLE 37.—*Territory within reach of high schools.*

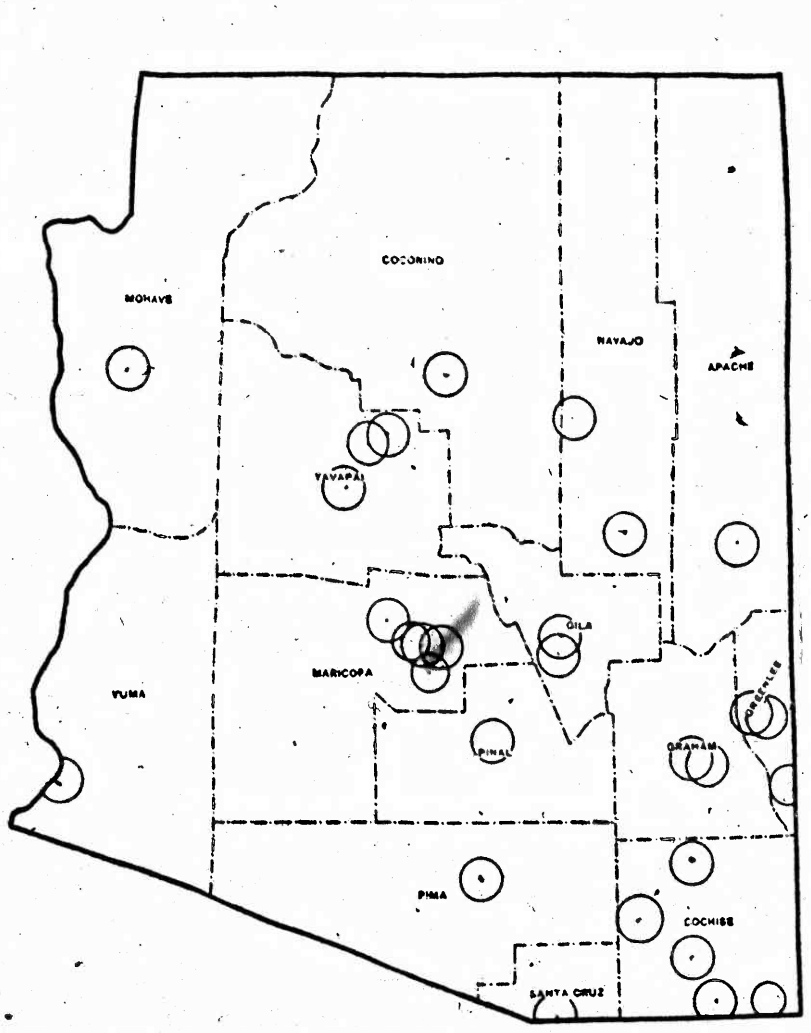
Counties.	Population within 10 miles of high schools.	Area in square miles.
Apache	835	315
Cochise	21,168	1,491
Coconino	2,414	390
Gila	9,975	395
Graham	4,567	350
Greenlee	10,911	625
Maricopa	28,155	845
Mohave	903	315
Navajo	3,267	585
Pima	6,537	315
Pinal	1,561	315
Santa Cruz	3,511	160
Yavapai	7,693	865
Yuma	2,914	200
Total high schools	93,651	7,045
Total State	200,354	113,810
Per cent in high-school districts	48	6

(B) ADMINISTRATION.

In any single high-school district the high school is in charge of the three regular school trustees of the district, and is under the supervision of the city superintendent of schools if one is employed. In any union high-school district the school is in charge of five trustees, three of whom must be residents of the elementary school district in which the high school is situated, the other two must be residents of the other territory of the union district. Members are elected by popular vote for five-year terms, one of which expires each year. County high schools, if established, are maintained and governed under the same provisions of law as union high schools.

The superintendent of schools of a city school district included in a union high-school district has no authority over the high school

unless the city board of school trustees, composed of three members, and the union high-school board, composed of five members, agree to put the superintendent in charge or elect the same person superintendent of schools and high-school principal. The city superintendents or principals at Duncan, Glendale, Phoenix, Willcox, and Yuma have no supervision of the high schools located in those



MAP 1.—Location of 29 high schools and area within a 10-mile radius of each.

places. The city superintendents of Benson, Florence, Kingman, Miami, Tombstone, and Nogales are principals of the respective high schools as well. In Clifton, Winslow, Morenci, Douglas, Bisbee, Globe, Safford, Mesa, Tucson, Prescott, Temple, Clarkdale, and Jerome the city superintendents have supervision of the high schools, either because the schools are under the same board or because the two boards have elected one man to the two positions.

Summarized, this means that there are 24 four-year high schools in Arizona, all located in cities; 20 of those cities employ city superintendents and 4 employ principals. In 6 cases the city superintendents or city school principals have no voice in the high-school management or instruction; in 5 cases the city superintendent occupies also the position of high-school principal; in 13 cases the city superintendent has full supervision over the high schools, either because the high school is under the same board as the other city schools or because the high-school board has employed the superintendent for part of his time. Of the 24 schools, 10 are under boards separate from the city boards of education.

To have one board and superintendent for the elementary schools and another for the high school in the same city makes the machinery of school administration cumbersome, overcostly, and relatively inefficient. The high school is then an entirely different administrative unit requiring its own officers, supervisors, and clerks. The time of the high-school principal must be taken up in administrative affairs that might be handled by the superintendent. The solidarity between the high schools and the elementary schools is entirely lacking. The city superintendent makes promotions to the high school. The high-school principal is powerless if children poorly prepared are promoted. It is probable that the emphasis thus placed on the division between elementary and high schools causes many children to leave school on completion of the elementary course who otherwise would attend a year or so more.

The objections are removed only in part if the two boards employ the same man for superintendent. In Arizona and in other States it has been found difficult for the two boards to agree and continue to agree on the man. Even when they do, the systems are separate in business management and are in danger of inefficiency from a business standpoint.

The school districts included within a union high-school district should unite for elementary school purposes as well as for high-school purposes, and be hereafter a single district with one board under the same regulations that the law now prescribes for ordinary school districts. The one superintendent would then have charge of all schools of the entire district, with the high-school principal in immediate charge of the high school but subordinate to the superintendent.

(C) ENTRANCE TO HIGH SCHOOLS.

Pupils who complete satisfactorily the work of the eighth grade according to such qualifications as are prescribed by the State board of education receive a certificate of promotion signed by the teacher or principal or city superintendent and by the county superintendent. This admits them into any high school in the State without further examination. To continue satisfactory, the elementary and secondary schools should be put into one system; and more supervision on the part of officers of the State board is necessary to maintain uniform standards.

(D) COURSES OF STUDY.

Each high school has the privilege of determining its own course of study, subject only to the approval of the State board of education. The courses offered are those ordinarily given in high schools in other States, including for the most part traditional subjects arranged in the traditional way, with some industrial work added. The industrial work in most schools is not thought to be of equal importance with the academic subjects, and it has been *added to* the curriculum rather than *included* in it. Its addition has not changed the subject matter of the rest of the curriculum nor the methods of teaching the academic subjects. These industrial activities might advantageously be made the basis of much of the work in other high-school subjects. The inclusion of agriculture, for instance, might be expected to modify to a certain extent the courses in botany, physics, and chemistry, substituting for some of the traditional subject matter other subject matter of direct application in agriculture. Domestic science might affect courses in the same way. Special departments might be created to teach the industrial subjects with definite purpose of trade preparation as in many cities in other parts of the United States. In those industrial departments 25 to 50 per cent of the pupil's time is devoted to trade work, the rest to the study of academic subjects of especial value in the trade and others of general cultural value. Even if such departments are not created, the subject matter in the curriculum might be brought into closer relation with the industrial work for the pupils who are preparing for industrial occupations. For others, changes in the traditional curriculum are desirable. It would undoubtedly be easier to break away from tradition in a new State like Arizona, which is just establishing its high schools, than in older States. This is done in many individual schools throughout the country.[1]

[1] For further information and discussion see *Principles of Secondary Education*, published by the Macmillan Co., and Bureau of Education bulletins, 1913, No. 50, *The Fitchburg Plan of Cooperative Industrial Education*, 1914, No. 8, *The Massachusetts Home-Project Plan of Vocational Education*; and 1916, No. 37, *The Cooperative System of Education*.

All the Arizona high schools include elective subjects, or elective courses with a limited number of electives within the courses. In the larger schools, such as Phoenix, Tucson, Bisbee, Mesa, and Douglas, approximately one-half of the curriculum is elective. In 4 schools election is by subjects, in 8 by subjects and groups, and in 12 by groups or courses. The courses usually offered are "college preparatory," "general," "commercial," "manual training," and "home economics."

Industrial courses. The industrial and vocational work is stimulated by State aid. The law provides that any high school having rooms and equipment, and satisfactorily located to give "elementary training in agriculture, mining, manual training, domestic science, or other vocational pursuits," may be designated by the State board to give such courses and receive from the State treasury out of general State funds, after the close of the school year, an amount equal to the total expended, up to $2,500. Normal schools as well as high schools receive this special aid. This means that the industrial work is supported in most cases entirely by the State. The local districts need not expend any local money over and above that for which they receive reimbursement except to provide suitable rooms. This is taxing the entire State to provide special education for individual communities without requiring them to do anything for themselves. A better plan and one in more common practice is for the State to refund not over one-half of the money expended. The local district in this way would contribute at least as much as the State.

The following amounts were paid out of the general State fund during the school year beginning July 1, 1915, and ending June 30, 1916, to reimburse high schools and normal schools for expenditures made for vocational education during the school year beginning July 1, 1914, and ending June 30, 1915:

TABLE 28.—*Amounts paid high schools and normal schools, from general State fund, for vocational education, 1917-16.*

Benson High School	$2,500.00	Tempe Union High School	$2,500.00
Bisbee High School	2,500.00	Tucson High School	2,500.00
Clifton High School	2,500.00	Willcox High School	1,215.49
Douglas High School	2,500.00	Winslow High School	2,500.00
Glendale Union High School	2,500.00	Yuma Union High School	2,500.00
Globe High School	2,500.00		
Jerome High School	973.55	Total to high schools	39,823.89
Mesa Union High School	2,500.00		
Miami High School	900.00	Northern Arizona Normal	2,500.00
Morenci High School	2,209.55	Tempe Normal School	2,500.00
Nogales High School	1,776.58	Total to normal schools	5,000.00
Phoenix Union High School	2,500.00		
Prescott High School	2,500.00	Grand total	44,823.89
Safford High School	248.72		

To receive these funds schools must employ instructors approved by the State board of education. Neither the department nor the

State board inspects the schools or the actual work of the instructors, and no provision is made for inspection. After the close of each school year every school asking reimbursement submits a sworn statement giving in detail a report of its work in industrial subjects, including the character of the work, the number of pupils, number of hours devoted to it, cost of instruction, etc. These reports are used as a basis of approval by the department. Most of the industrial work seen by members of the bureau staff, considered merely as uncorrelated industrial work, was good. If it is to be correlated with the academic instruction and to affect in any way the subject matter and methods in the academic subjects, or if it is to be made vocational the State must assume more direction and supervision of it through a properly qualified assistant employed in the State department. There is real need in Arizona for schools to teach as vocations agriculture and the trades, including those affiliated with mining, to boys 14 to 18 years of age, some of whom are now in school, but most of whom are not. There is need also for continuation schools in every city and in the mining towns and camps for those 16 years old and over who are employed during the day. The high schools through their vocational departments should provide for these needs and the State department should be equipped to direct them in it.

Among the industrial courses now given, the commercial courses, manual training, and home economics are the most popular. The manual training is largely woodwork; very little is done in forging or machine-shop work. In Phoenix automobile repairing has been introduced. This will call for forging and machine-shop work. The manual training consists principally of making useful articles, sometimes things of use to the school, as tables, desks, etc. Very good work was seen at Winslow. When the high-school building was erected, the second story could not be completed by the contractor within the appropriation available. It was left unfinished and was completed by the high-school boys. Most of the furniture for domestic science and manual training was made by the boys. A wireless telegraph apparatus has been erected by them through which communication can be held with the neighboring States.

Shorthand, typewriting, and bookkeeping are the principal subjects taught as commercial work. The courses in many of the high schools could be strengthened. Most of them at the present time are merely clerical and are open to students in the first two years. In some cities they are open only to pupils who have completed two years of regular high-school work. The aim should be as times goes on for the high school to offer a complete four-year course, including other commercial subjects in addition to those preparing only for clerical jobs, such as courses in commercial law, commercial geogra-

phy, economics, salesmanship, business methods, and a modern foreign language. In Arizona Spanish is the most practical foreigh language. Instead of three years of literary Spanish, one of these years should be given to teaching commercial Spanish.

The course in home economics in most schools consists of cooking and sewing. Millinery has been introduced in several schools with good results. In Douglas, Phoenix, and Prescott completely-furnished flats have been provided, thus affording an opportunity for the training of pupils in the care of a home.

Less has been done in agriculture than in manual training and domestic science. Agricultural courses are not practicable in high schools located in some of the mining districts, but are practicable in the irrigated districts and in other schools where the boys come from stock ranches. Much more should be done. Mesa has a large demonstration orchard and is making good use of it. Yuma has land for agricultural purposes, but it is not used, although the school employs a special teacher of agriculture and gives a course consisting of classroom and laboratory exercises.

Table 39 shows the enrollment in the 23 high schools for 1915–16 as reported by the principals to the United States Commissioner of Education. Many pupils are listed as taking both academic and industrial courses; so that the totals are not the same.

TABLE 39.—*Enrollment by years and in academic, commercial, and industrial subjects in 1915–16 as reported by the principals to the United States Commissioner of Education.*

High schools.	Total enrollment.	First year.	Second year.	Third year.	Fourth year and post graduates.	Academic.	Commercial.	Technical manual training.	Agriculture.	Domestic economy.
Benson	55	19	11	17	5	48	7	22	3	20
Bisbee	231	105	65	35	26	145	70	50	0	70
Calumet	70	30	16	8	16	68	17	6	0	12
Douglas	238	113	64	32	29	173	62	2	0	1
Duncan	36	25	6	5	0					
Florence	55	27	13	9	7	53	3	17	0	19
Glendale	107	48	24	20	15	107	35	25	10	30
Globe	108	39	34	21	14	[1]73	[1]54	[1]63	[1]0	[1]85
Jerome	23	10	6	4	3	23	6	1	0	0
Kingman	27	12	8	5	2	27	0	0	0	0
Mesa	203	89	55	30	29	187	38	0	16	0
Miami	52	31	14	6	1	50	3	0	0	0
Morenci	20	10	4	2	4	18	2	0	0	0
Nogales	51	24	11	7	9	40	15	7	0	5
Phoenix	910	350	250	160	150	510	250	61	20	66
Prescott	146	57	36	27	26	120	26	27	0	26
Safford	46	24	8	4	10					
Tempe	93	42	22	16	13	48	45	0	0	0
Tombstone	26	15	8	3	0	26	0	0	0	0
Tucson	283	115	71	57	40	222	61	23	0	33
Willcox	68	44	9	10	5	37	31	17	0	24
Winslow	112	42	20	20	24	69	20	12	5	6
Yuma	139	52	45	31	10	75	43	0	14	16
Total	3,008	1,323	809	510	438	2,039	789	336	68	415
Per cent		42	26	17	15	66	26	11	2	13

[1] Includes seventh and eighth grade pupils who are attending the Globe Junior High School.

It is evident from the above that the academic courses are the most popular. The commercial courses attract more students than manual training, agriculture, or domestic economy. Agriculture is given in but six of the 23 schools, to 68 pupils only, although several other schools are located where agricultural courses would be practical. A total of 1,607 pupils are enrolled in the four subjects for which the special State aid is applied, and for money expended for vocational instruction to these pupils the State during the present year will reimburse the districts about $40,000. For vocational work done during 1914–15, $14,824 was paid. Of that amount $39,824 was paid to 19 high schools which had 1,334 pupils in the vocational subjects, an average of approximately $30 per pupil. The amount is high, and is warranted only while the work is new and interest has to be created. The State will not be justified in continuing this large expenditure for one phase of education unless it takes over the supervision of this work and makes it more effective, and unless greater interest is created and more pupils take it. Practically no greater expenditure would be necessary than at present if the enrollment in the department already established were doubled or even quadrupled.

(E) COST OF MAINTENANCE.

The cost of high-school education per child enrolled varies greatly, as may be expected. The following table, Table 40, gives the data for the 23 schools as computed by Prof. Neal, of the State university, from reports which the schools made to the university. Some of the data are questionable. It is not probable that Douglas pays four times as much as Tucson.

TABLE 40.—*Cost of high schools.*

Names of schools.	Enrollment, 1915–16.	Cost per child.
Benson	55	$187.00
Bisbee	231	131.35
Clifton	70	152.55
Douglas	238	200.00
Duncan	36	166.67
Florence	56	183.04
Glendale	107	100.00
Globe	108	99.34
Jerome	23	110.69
Kingman	27	108.00
Mesa	263	100.00
Miami	52	100.00
Morenci	20	
Nogales	51	110.00
Phœnix	910	78.00
Prescott	146	
Safford	46	164.00
Tempe	93	156.00
Tombstone	26	90.00
Tucson	283	50.00
Wilcox	68	165.00
Winslow	112	109.00
Yuma	138	54.00

Cost per pupil recitation.—Data were collected in eight high schools to show how much it costs per pupil for each high-school recitation in each subject. Not all the data collected could be used, but enough is presented in the following table to give significant comparisons.

TABLE 41.—*Cost of instruction per child per recitation.*

Subjects.	Tempe.	Phoenix.	Prescott.	Nogales.	Bisbee.	Douglas.	Mesa.	Winslow.	Minimum.	Maximum.
	Cents.	*Cents.*	*Cents.*	*Cents.*	*Cents.*	*Cents.*	*Cents.*	*Cents.*	*Cents.*	*Cents.*
English I	4.2	3.8	8.7	8.0	5.5	7.0			3.8	27.
English II	2.4	3.7	7.2	10.0	6.0	6.4			2.4	10.0
English III	3.4	3.5	6.9	18.0	8.0	7.2			3.4	18.0
English IV	11.4	7.2	5.0	12.0	7.0	10.7			5.0	14.4
English, all classes										
Latin I	9.7	4.2	6.8	35.0	4.7	5.3	3.0	6.6		
Latin II	10.8		10.2	18.0	12.0	21.0			4.2	35.0
Latin III and IV	19.5	5.4	55.5		36.0	20.5			30.2	24.0
Latin, all classes									5.4	55.5
Spanish I	8.8	3.6	5.5	10.0	7.5	4.9		22.0		
Spanish II	5.1	3.9	6.4		10.0	9.6		7.4	3.6	10.0
Algebra	4.6	4.5	6.2	10.0	8.0	7.2	6.8	9.2	3.9	10.0
Geometry	2.8	4.8	5.5	12.0	8.0	9.5	6.8	10.1	4.5	10.0
History, ancient		3.8	5.3	14.0	7.0	9.2			2.8	14.0
Medieval and modern	7.0	3.9	4.9	18.0	12.5	9.8			3.8	18.0
American and civics	10.0	6.2	13.3	14.0	7.5				3.9	18.0
All classes									6.2	14.0
Science, general	3.8	5.1		27.0	7.0		5.5	8.1		
Agriculture		12.2					7.9	9.2	3.8	27.0
Biology	9.3	4.6			14.0	8.9	16.6		12.2	16.6
Physics	18.7	6.9	9.0		22.0	15.2	16.0		4.6	16.0
Chemistry	6.6	8.7	10.8	25.0		16.0	6.2	19.0	6.2	22.0
Typewriting	5.8	2.1	4.0	22.0	11.0	6.9		13.5	6.6	25.0
Stenography I	8.0	6.8	13.5	28.0	10.0	8.6		3.5	2.1	22.0
Stenography II	9.5	6.8	13.5	28.0	20.0	13.0		19.2	6.8	28.0
Bookkeeping	5.9	6.0	17.6	45.0	10.0	19.0		19.2	6.8	28.0
Art	6.3	18.5			14.6			12.1	5.9	45.0
Mechanical drawing		10.7		7.0				8.9	6.3	18.5
Manual training	5.5	12.4	42.3		23.3		11.6	10.1	7.0	10.7
Home economics	5.0	5.4	16.9	9.0	11.0		14.7	12.3	5.5	42.3
								13.1	5.0	16.9

It will be observed that instruction in some subjects costs many times as much as instruction in others. This is due almost wholly to the size of the classes. If classes are made for a few pupils the cost must be large. This accounts for the fact that the cost of third and fourth year Latin in most schools is excessive. In one school the cost for Latin in these years per pupil recitation is 55 cents, while in the same school the cost of instruction in other subjects ranges from a seventh of this amount, or even less, to about one-fourth. So few pupils elect third and fourth year Latin that it is doubtful whether the schools can afford to offer more than two years of the subject. In most of the smaller schools, if more than two years' work is offered, the third and fourth year classes should be combined, reading one author one year and another the next, or classes might recite on alternate days. It is not necessary for an instructor to meet daily a third or fourth year Latin class having only three or four pupils.

Other subjects costing an undue amount could well be alternated also, as for instance, the different classes in history or in physics

and chemistry. The following table presents data showing the size of classes in 10 high schools, indicating the chief reason why some subjects are costing so much more than others. It will be noted that many classes are small, some having a membership of only 3 or 4 pupils.

TABLE 42.—*Size of classes in Arizona high schools.*

High schools.	Number of classes containing—						
	10 or fewer pupils.	11 to 15 pupils.	16 to 20 pupils.	21 to 25 pupils.	26 to 30 pupils.	31 to 35 pupils.	36 to 40 pupils.
Bisbee	13	17	14	6	2	.....	.....
Tempe	27	7	11	4	3	.....	.....
Winslow	18	7	6	3	2	.....	1
Globe	10	8	13	8	4	2	.....
Nogales	19	3	.....	.....	.....	.....	.....
Douglas	11	10	12	9	3	1	.....
Mesa	9	13	16	6	9	1	1
Phoenix	3	11	17	32	57	.....	.....
Prescott	14	7	5	3	2	2	1
Tucson	7	15	11	11	4	1	.....

(F) PROMOTION OF PUPILS.

In the Arizona high schools the usual plan of promotion is by subjects, requiring pupils to repeat only the subject or subjects in which they failed. The following table (Table 43) shows the proportion of failures in 12 subjects in 10 high schools at the close of the school year 1915–16. It should be noted that in some schools the number of failures in all subjects is high, in others low. In other schools the number of failures in one or two subjects is high, while in other subjects it is low.

TABLE 43.—*Proportion of nonpromotions in 12 subjects in 10 Arizona high schools, June, 1916.*

City.	First-year algebra.	First-year English.	Ancient history.	First-year Latin.	First-year Spanish.	Plane geometry.	Physics.	Chemistry.	Stenography.	Bookkeeping.	Manual training.	Domestic science.
	P. ct.	P. ct.	P. ct.	P. ct.	P. ct.	P. ct.	P. ct.	P. ct.	P. ct.	P. ct.	P. ct.	P. ct.
A	2	2	0	2	1	18	0	4	9	9	0	0
B	16	10	6	12.5	3	4	0	0	9	0	0	0
C	12	5	5	25	12.5	10	12.5	10	24	0	4	0
D	11	3	.....	1	5	12	0	0	0	0	.....	0
E	8	3	0	7	0	9	.....	0	0	0	0	0
F	14.1	8.3	4.6	12	14.6	12.5	8.7	0	0	0	.....	.....
G	20	4	10	9	20	25	7	0	15	0	15	7
H	8.5	2.9	4	7.5	11	31	0	0	0	0	0	0
I	9	5	10	25	6.5	8	4	1.5	1.5	33	4	.....
J	9	.....	14	.....	.....	.....	.....	.....	.....	.....	.....	.....

In city A, 18 per cent failed in plane geometry, while the failures in other subjects were few. In several cities the per cent of failures in plane geometry is high, while in only two cities is the proportion

of failure high in commercial subjects. Manual training and home economics have few failures. The passing standard in the commercial subjects is undoubtedly too low, and the reputation of the high-school commercial courses among the business men suffers in consequence. The few failures in home economics, manual training, and the commercial subjects may indicate low standards, or may be due to the fact that the teachers do not regard them of equal importance with the academic subjects. High-school principals and teachers should make a serious study of the relative number of failures in the different subjects as a measure of their own success and failure.

A recent study of the high-school buildings, equipment, and teaching facilities has been made by the high-school visitor of the State university. Table 44 contains part of the information collected.

TABLE 44.—*Buildings and equipment of Arizona high schools, from tables prepared by A. O. Neal, high-school inspector, University of Arizona.*

	Population.	High-school building.							Laboratories—Value of equipment.							Volumes, library.
		Material.	Date of erection.	Cost.	Number of rooms.	Size of yard	Number of trees.	System of heating and ventilating.	Biology.	Physics.	Chemistry.	Agriculture.	Manual training.	Domestic science.	Commercial.	
Benson	1,000	Stone		$50,000		40 acres		Stoves; windows		$500	$1,000		$1,500	$1,200	$500	400
Bisbee	21,100	Brick and concrete	1913	75,000	25	200 by 40	0	Hot air	$1,000	1,500	500		7,500	4,000	2,000	1,500
Clifton	5,000	Brick	1912	20,000	15	60 by 100	18		50	750	100		1,200	1,200	1,000	800
Clarkdale	2,500								200		600				300	
Douglas		Brick	1904	40,000	16	One block	40			500	800		10,000	2,000	1,000	1,200
Duncan	1,000	do	1916	30,000	11	17 acres		Steam		500	450	$300		1,250	175	500
Florence	2,000	do	1916	75,000	20	10 acres		do	50	500	450		1,000	1,500	1,000	500
Glendale	1,500	do	1912	50,000	10	20 acres		Hot air		1,000		100	1,000	1,200	1,000	500
Globe	10,000	Concrete	1914	100,000	32	200 by 600	8	Hot air, fan system	500	1,300	1,000		2,250	1,500	1,200	800
Jerome	7,000	Stucco	1909	25,000	6	70 by 70	0	Hot water		200	200		500		200	1,500
Kingman	2,500	Under construction							600	150			350			
Mesa	2,500	Brick	1909	50,000	23	5 acres	56	Hot air	200	400	500	500	2,000	850	700	1,100
Miami	10,000	Concrete	1915	111,000	24	200 by 600	0	Vacuum steam		700	1,200		1,200	1,000	600	1,200
Morenci	7,000	Brick	1905	10,000	7			Steam		200	75		550	750	700	1,100
Nogales	7,000	Stone; brick	1916	75,000	24	5 acres	10	Hot air		200	850		1,650	650	1,085	825
Phoenix	30,000	Brick and concrete	1911	250,000	48	4 blocks	30	do	1,000	1,900	1,400	250	2,000	2,750	3,500	900
Prescott	5,500	Brick	1911	80,000	24	250 by 500	12	do	325	1,000	500		2,000	1,000	1,000	
Safford	2,500	do	1915	40,000	30	9 acres	8	do	150	300	600	300	700	300	800	381
Tempe	2,000	do	1909	35,000	16	8 acres	175	Forced hot air	200	500	100		3,000	500	1,500	1,500
Tombstone	2,000	Wood	1885		7	100 by 150	0	Stoves		100	50		400		250	250
Tucson	22,500	Brick	1908	105,000	20	City block	200	Hot air	300	400	700	50	3,100	1,000	400	900
Willcox	1,000	do	1911	8,000	10	7 acres	50	Stoves		250			2,000	500	500	500
Winslow	4,300	do	1913	25,000	17	6 acres	12	Hot water	600	4,000	1,200		3,100	2,200	1,000	2,961
Yuma	4,000	do	1914	75,000	20	10 acres	0	Hot air	300	600	700	300		600	800	600

(G) HIGH-SCHOOL TEACHERS.

Education.—When the number of years of schooling of the high-school teachers in Arizona is compared with that of teachers in other high schools throughout the country, Arizona ranks high. Of the Arizona high-school teachers, 51 per cent have attended school 8 or more years beyond the elementary grades and are college graduates; 13 per cent have attended 7 years but less than 8; 16 per cent, 6 years but less than 7. Of the remaining 20 per cent who have attended less than 6 years, many have completed the 5-year normal course, others are 4-year high-school graduates, and a very few have attended less than 4 years. In 5 of 16 schools, all the high-school teachers are college graduates, and in only 2 does the per cent who are college graduates fall below 50.[1] The 51 per cent of the teachers who are college graduates include 177 individuals; 28 of them have post-graduate degrees and 56 have been resident postgraduate students; many others report attendance at summer schools. Nearly all the high-school teachers who have attended college report that they have had one or more courses in education. Most of the teachers beginning service within the past three years are college graduates except some in commercial and industrial departments. None should be employed in any department who have had less than a college course of four years. In their college course they should have had at least 10 semester hours of professional work in education.

Table 45 presents the foregoing information in greater detail.

TABLE 45.—*Education of high-school teachers, beyond eighth grade, fall of 1916.*

Periods.	Bisbee.	Clifton.	Douglas.	Florence.	Glendale.	Globe.	Jerome.	Morenci.	Nogales.
	Per ct.	*Per ct.*	*Per ct.*	*Per ct.*	*Per ct.*	*Per ct.*	*Per ct.*	*Per ct.*	*Per ct.*
Less than 6 years	10	0	15	14	33	0	33	0	66
Six years	16	0	30	14	67	15	0	0	0
Seven years	35	28	8	14	0	0	0	20	0
Eight years or more	45	72	47	48	0	85	67	80	34

Periods.	Phoenix.	Prescott.	Safford.	Tempe.	Tucson.	Winslow.	Yuma.	Average
	Per ct.	*Per ct.*	*Per ct.*	*Per ct.*	*Per ct.*	*Per ct.*	*Per ct.*	*Per ct.*
Less than 6 years	26	57	40	16	9	40	14	20
Six years	21	14	0	16	27	0	29	16
Seven years	6	0	20	16	0	20	0	13
Eight years or more	47	29	40	52	64	60	57	51

[1] Many of these college graduates have had much less than eight years' education beyond the grades. This accounts for what seems to be a discrepancy in Tables 45 and 46.

TABLE 46.—*Number of teachers and size of classes in high schools, 1915-16.*

[From tables prepared by A. O. Neal, high-school inspector, University of Arizona.]

High schools.	Term.	Teachers.				Classes.				Monthly salaries		
	Weeks per year.	Whole-time teachers.	Part-time teachers.	Teachers college graduates.	Normal graduates.	Average size of classes.	Largest.	Smallest.	Classes per teacher.	Average salary.	Largest salary.	Smallest salary.
Benson	40	3	3	3	3	.....	.....	2	4-7	$125	$140	$100
Bisbee	38	13	2	All.	.....	15	30	6	5-6	109	190	80
Clifton	36	10	.....	7	3	10	26	5	6	130	160	100
Clarkdale	40	4	.....	All.	.....	10	26	6	.....	111	125	100
Douglas	38	10	7	13	1	20	36	4	5	130	130	115
Duncan	36	4	.....	2	.....	10	22	3	.....	115	150	100
Flowing	36	5	3	7	1	13	30	3	.....	80	100	80
Glendale	38	5	.....	2	3	18	28	7	5	112	.....	80
Globe	40	6	12	15	3	12	35	2	5	115	135	80
Jerome	40	3	1	3	1	7	13	2	.....	124	150	85
Kingman	36	2	1	2	1	12	19	6	.....	110	110	110
Mesa	38	12	.....	6	4	25	55	4	5	128	185	90
Miami	38	6	4	6	2	20	36	1	.....	126	130	125
Morenci	36	14	12	16	.....	4	10	1	5	117	135	100
Nogales	36	4	3	4	3	9	24	3	5	120	140	105
Phoenix	38	30	1	23	2	25	70	10	.....	145	225	100
Prescott	36	6	5	9	1	17	34	1	5	145	183	123
Safford	38	5	3	3	5	14	36	6	.....	103	167	55
Tempe	36	5	5	5	4	15	30	5	4-7	150	180	115
Tombstone	.....	2	0	2	.....	9	18	3	.....	120	120	120
Tucson	36	11	4	All.	.....	23	35	9	4	147	155	122
Willcox	36	5	1	3	1	16	24	1	.....	118	200	55
Winslow	36	6	5	10	.....	18	33	7	5	135	166	111
Yuma	36	8	.....	All.	.....	15	30	3	5	119	150	100

[1] The high school is housed with elementary grades and the school is conducted on the departmental plan.

Experience.—Practically all of the Arizona high-school teachers had experience in teaching before coming to their present positions. Three per cent are teaching their first school year, 12 per cent their second, and 85 per cent their third or more than their third. The teaching corps changes rapidly, for 37 per cent are teaching the first year in their present positions, 33 per cent the second year, and only 32 per cent have held the same position for three years or more. Comparatively few have been in their present positions more than four years. As the committee views the high-school situation in Arizona, the short tenure of teachers is an element of weakness. In seven high schools 50 per cent of the teachers or more are new; in three none has taught more than two years in the same schools.

(H) SIX-YEAR HIGH SCHOOL.

Many city superintendents throughout the country have been reorganizing their schools on what is popularly known as the six-six plan—six years in the elementary grades and six years in the high school, the high school being divided into two divisions of three years each, known as the junior and senior high school. In some cities the junior high school consists of only two grades, the seventh and eighth.

No real junior high schools have been organized in Arizona, in the sense that a—

> junior high school is an organization of grades seven and eight, or seven, eight, and nine, whether housed with the senior high school or separately, to provide by various means for individual differences, especially by an earlier introduction of prevocational work or of subjects usually taught in the high school.

In Tucson, Winslow, Morenci, and Globe the grammar grades are housed in the same building as the high school and are conducted on the departmental plan. To organize junior high schools meeting the foregoing definitions in these cities would be comparatively easy, but to introduce the junior high school into all the cities in Arizona is not possible at present because of a lack of buildings and equipment for junior high-school work. It is recommended that, as new buildings are needed, the junior high-school organization be kept in mind. Bisbee, which has been in need of more room for the elementary grades, is now erecting buildings for two junior high schools. With the seventh and eighth grades removed to these buildings, there will be room enough in the old buildings to accommodate the first six grades for several years.

This plan could well be imitated in other cities where new buildings are needed. If a new high-school building is needed, the old high-school building could be used for a junior high school. In the cities in which the seventh and eighth grades are housed in the same building with the high school only a slight change in administration and in the courses of study will be necessary to convert them, together with the ninth grade, into a junior high school. One principal would then be in charge of both the junior and senior high schools.

The introduction of a six-year high school is recommended for several reasons, among which may be mentioned the saving of time. It has been repeatedly shown that American boys and girls at the age of 18 are two years behind those of European countries in which the organization is different from the American form of organization.

Some years ago the National Education Association appointed a committee to report upon economy of time in education. This committee reported in favor of a six-year elementary course and a six-year high-school course.[1]

The National Education Association is committed to the plan, and State educational associations are indorsing it.

A pupil should, during the first six years of school, come into possession of what are called the "tools of learning"—reading, writing, and arithmetic. After he has possession of the "tools" he can take up some of the high-school subjects, as a foreign language and algebra, as easily as he can after eight years in the elementary grades.

[1] See U. S. Bureau of Education Bulletin, 1913, No. 38, *Economy of Time in Education*, and Bulletin, 1913, No. 41, *The Reorganization of Secondary Education*.

The two grades above the sixth are devoted largely to a repetition of the subjects taught in the fifth and sixth grades and present no new facts that can be used in the study of a foreign language if taught naturally, or in the study of algebra or general science. Elementary science is just as interesting to children in the seventh and eighth grades as it is to those in the ninth or tenth. At the beginning of adolescence, the grammar period, the mind begins to reach out after the new; it is the period when children become interested in nature and want to learn about its mysteries. It is a pedagogical axiom that certain subjects are best taught at certain periods.

At the beginning of the seventh grade the course of study can well be differentiated into two or three courses—a college preparatory course, a general course, and a prevocational course. Pupils taking the college preparatory courses would go to college better equipped than they do now. The general course should provide more specifically for those not expecting to go to college. Not many pupils taking the general course would be barred from college, since the most progressive colleges are now permitting a wide range of electives for entrance. Those pursuing the vocational course would be prepared to enter at once upon a life career, or if they decided to go to an engineering college, they would be better prepared to take up the work. The four-year high-school industrial course does not prepare the boy as he should be prepared to begin real life. By beginning this course in the seventh grade with at least five hours a week for industrial subjects, skill in operations could be obtained during the junior high-school period, and the technical aspects during the senior high-school period. That is now impossible, because much of the work that might be done in the seventh and eighth grades must be taken up as prevocational work in the high school.

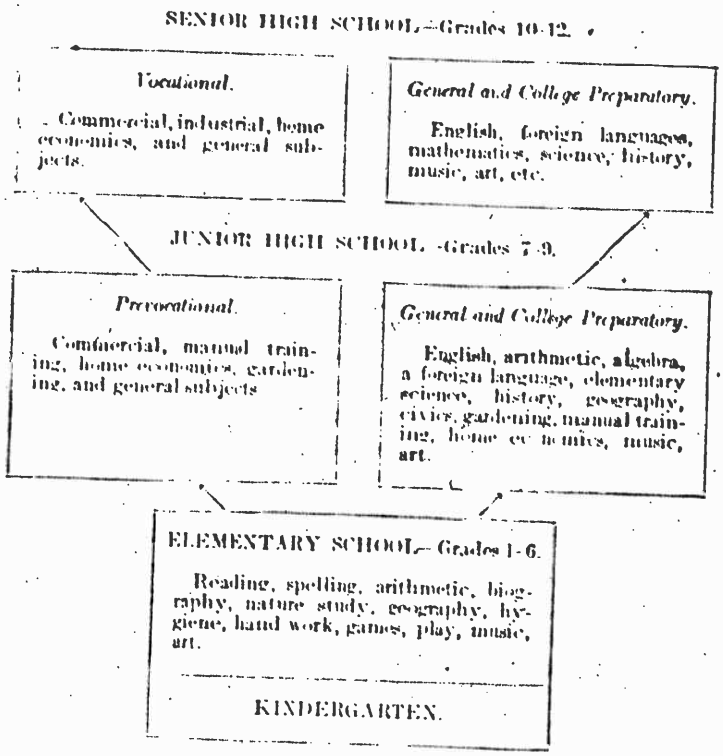
As pointed out in another part of this report, the commercial course should be strengthened. If there were a six-year high school a six years' course could be offered in commercial subjects—not six years of bookkeeping, stenography, and typewriting, but six years in studying those subjects that would help take the high-school graduate out of the clerical class.

In a six-year high school a pupil who is found to have no aptitude for certain subjects or courses can be transferred to another course before it is too late. The courses should not be so different that a pupil is forever doomed to follow a certain course without possibility of transfer to another.

In reply to a questionnaire, most superintendents who have organized junior high schools say that the junior high school serves the following ends: Greater differentiation can be provided; transition to senior high school made easier; better teaching methods are

used; fits needs of slow-moving pupils; bright pupils are encouraged; more thorough work in subjects ordinarily taught in the high school; vocational or prevocational subjects can be introduced earlier; pupils are retained longer in school.

The following diagram illustrates a plan on which many of the Arizona schools could be reorganized:



Section 6.—ELEMENTARY SCHOOL ATTENDANCE.

(A) CENSUS AND ENROLLMENT.

The success with which schools enroll the children who should attend, the regularity of their attendance, and the length of school terms are among the most important considerations in a study of the school system of a State. However excellent the educational advantages furnished, poor attendance leads to waste of opportunity and financial extravagance. No State can afford to relax its efforts in this direction until every child of actual school age is in attendance every day school is taught, unless prevented by illness or other equally serious cause. The census, enrollment, and average daily

attendance in Arizona for the preceding three bienniums are stated in the table below. It shows that the number of children 6 to 21 years of age is increasing rapidly, that the enrollment is increasing more rapidly than the census, but that the average daily attendance is not keeping pace with the increased enrollment. It is, however, keeping up to the census as is shown in the last column.

TABLE 47.—*Census, enrollment, and daily attendance, 1912–1916.*

Years.	Census (6 to 21 years).	Enrollment.	Enrollment to census.	Average attendance.	Ratio of attendance to enrollment.	Ratio of attendance to census.
			Per cent.		*Per cent.*	*Per cent.*
1912	42,381	31,782	76	21,615	68	51
1914	55,845	42,096	75	28,150	67	51
1916	61,653	49,084	80	31,810	65	51

The legal school age in Arizona is from 6 to 21 years. This classification follows precedent in many other States and is used chiefly for the purpose of apportioning State money. It has little relation to the age of actual school attendance, since normal children finish the high-school course at about 18 or 19 years of age. When high schools are not within convenient reach, as in many parts of Arizona, few children attend school after the age of 15 or 16.

The figures given for enrollment in the above table are undoubtedly too high. They are taken from the reports of the county superintendents to the State superintendent. They show, for instance, for 1915–16, an enrollment of 80 per cent of the school population 6 to 21 years of age. If this were correct, it would mean that practically all of the children of actual school age were enrolled in school, since approximately 20 per cent of children between 6 and 21 have completed elementary and high school courses or have passed the normal age for completing them.

According to the Federal census of 1910, Arizona enrolled in school in that year 53 per cent of the population 6 to 21 years of age. This was a lower percentage than that of any other western State; Utah enrolled in the same year 70 per cent of the census.

Table 48 gives by counties the census (6 to 21), the enrollment, and attendance. These figures also are from the reports of the county superintendents for 1915–16. The percentage of attendance to enrollment varies from 54 to 82, which emphasizes the probability of duplicate enrollments and other inaccuracies. It is of little value merely to enroll children unless they are required to attend regularly throughout the term. An allowance of 10 per cent of the enrollment

ought to cover all necessary absences due to illness, bad weather, and other unavoidable causes.

Table 48 shows also the average daily attendance based on the "average number belonging" as reported by the county superintendents. The figures are, however, of little significance, as there is no established and uniform method in Arizona of calculating the average number belonging. There should be, of course, an established rule uniformly followed in regard to the number of days children are carried on the roll as "belonging." Visits to teachers show that some drop children from the roll after one day's absence, some after two, and some wait three or more days. Of course, the fewer days the name is carried on the list of membership, the higher the percentage of average daily attendance based on the average number belonging.

TABLE 48.—*Census, school enrollment, and attendance, 1915–16.*

Counties	Children 6 to 20 years of age.	Total enrollment in public schools.	Percentage of enrollment to census.	Average daily attendance.	Percentage of attendance to enrollment.	Average number belonging.	Percentage of attendance to number belonging.	Percentage of attendance to census enumeration.
Apache	1,197	1,070	89	704	66	746	94	59
Cochise	12,161	9,565	79	6,308	67	6,758	93	52
Coconino	1,787	1,115	62	754	68	801	94	42
Gila	4,436	4,092	92	2,604	64	2,802	93	59
Graham	3,171	2,777	88	2,055	74	2,191	94	65
Greenlee	4,242	3,488	82	2,251	65	2,412	93	53
Maricopa	15,745	10,474	67	7,161	68	7,764	92	45
Mohave	1,109	812	73	493	60	528	93	44
Navajo	2,522	1,746	69	1,319	75	1,385	95	52
Pima	6,151	4,062	66	2,783	68	2,926	95	45
Pinal	2,944	2,509	85	1,596	64	1,662	96	54
Santa Cruz	2,957	1,688	57	924	54	1,000	92	31
Yavapai	3,647	2,784	76	1,773	64	1,894	93	48
Yuma	2,084	1,584	76	1,065	67	1,132	94	51
Total	63,953	49,951	80	31,816	65	33,542	94	51

The percentage of average daily attendance, whether obtained on a basis of the number belonging or of the number enrolled, is not a significant figure except for the purpose of comparing attendance among schools or among counties in which it is obtained in the same way. It is of very little value to show attendance as it is, compared with what it should be. A few regular attendants bring up the average in a school in which the majority attend irregularly, and a few very irregular attendants may lower the average attendance in a school in which the attendance of the majority is reasonably good. The actual attendance of pupils who should be in school is shown approximately in Table 49, obtained by computing as accurately as possible with the data available the average number of days attended by all the children enrolled. Arizona has a minimum school term of 160 days in each district. In some counties the term

averages 180 days, but the actual number of days attended by the children enrolled varies from 93 in Santa Cruz County to 123 in Maricopa and Pima Counties. Throughout the State there is a difference of from two and one-half to four months between the number of days school is taught and the actual number of days attended by the average pupil enrolled. So great a difference indicates that the compulsory education law is either misinterpreted or not properly enforced. This law requires children to be in school the full term, not part of it. Aggregate attendance is the sum of the number of days attended by all the pupils and is, therefore, dependent upon both the number in attendance and the length of time attended. The item is more significant in evaluating school attendance than percentage of average daily attendance, because the average daily attendance is a secondary item, found by dividing the aggregate attendance by the number of days a school was in session. "Aggregate attendance" should be added to the reports now required in Arizona.

Other items which should be added to the reports required from the county superintendents are (1) number of defective children, mentally and physically, who are incapacitated for school or who should be in special schools or classes. This could be gathered by teachers or census marshals as the data on blind and deaf are now gathered, the marshals to be assisted by the county physician when necessary; (2) age-grade data for each district, which should be summarized by counties; (3) number completing eighth-grade and number entering high school; (4) number of children between 8 and 16 who did not attend school at all and the number who did not attend school regularly; (5) number of children 6 to 19 years of age, the ordinary school age.

TABLE 49.—*Length of terms and average number of days attended by each pupil enrolled.*

Counties.	Average number of days—		
	School was taught.	Attended by each pupil enrolled.	Not attended by each pupil enrolled.
Apache	162	109	53
Cochise	175	116	59
Coconino	175	114	61
Gila	180	117	63
Graham	160	117	43
Greenlee	175	113	62
Maricopa	180	123	57
Mohave	165	100	65
Navajo	160	118	42
Pima	180	123	57
Pinal	180	110	70
Santa Cruz	170	93	77
Yavapai	170	107	63
Yuma	160	104	56

(B) ATTENDANCE IN CITY SCHOOLS.

When average daily school attendance in the cities of Arizona is compared with the enrollment, it appears that attendance is poor. Data collected in five cities to show distribution of attendance for the school year 1915–16 show that 12 per cent attended less than 51 days, 10 per cent from 50 to 100 days, 30 per cent from 100 to 150 days, and 48 per cent more than 150 days. When the fact is considered that the population in these Arizona cities shifts rapidly, the attendance is not as bad as it seems. In one city, for instance, the enrollment for the year 1915–16 was 608 and the average daily attendance only 392. In that city 111 pupils moved away from the city during the year, 7 left to enter private schools, 7 went to work, and 19 left for miscellaneous reasons, making a total of 144 leaving school during the year. In another city enrolling 1,653 pupils during the year the average daily attendance was 1,242; 188 moved from the city during the year, 16 went to work, and 89 left for miscellaneous reasons. A number of children without doubt moved into these cities and entered school after the beginning of the term. It would be unfair to the cities of Arizona, therefore, to compare their school attendance statistics with those of older communities whose population is more nearly stationary.

Only comparatively few cities could furnish definite data to show the number of children of compulsory school age not in school. The school census as taken in Arizona is of little assistance for this purpose. It is taken usually in January. The attendance officer in each city should take the school census in August or the 1st of September each year, and he should keep a continuous census record by adding the names of children who have moved into the city and dropping the names of those who have moved away. With such a record children not in school can be easily located, whether in private schools, at home, or at work.

(C) COMPULSORY ATTENDANCE.

The compulsory school age in Arizona is 6 to 16 years, unless the child has completed the elementary school before that age, when he may leave at 14. Eleven county superintendents report that it is well enforced; three reported that it is partially enforced. A comparison of the number of days attended to the days taught (Table 49) does not verify the statement of the 11. The large enrollment compared to average daily attendance also indicates laxity in the enforcement of the true intent of the law. If the enrollment is correct, it indicates that children are forced to enroll in school but not to attend regularly. The law itself does not specifically state how much absence causes violation of its regulations, and there is

no legal interpretation in regard to it. Children may be and often are absent several days without cause before an investigation is begun. Some counties do not have truancy officers or do not report any, and the sheriff in some counties appears to be too busy to give proper attention to attendance irregularities. When the entire enforcement of the compulsory law is left to school directors, it becomes too localized to be efficient. If teachers were required to investigate daily absences and report to the truant officer, better results would be obtained. It would also add to the beneficial effects of the law to include a clause compelling children between 14 and 16 who have finished the elementary school either to attend a high school when one is accessible or be engaged in useful employment at home or in some industry.

(D) RETARDATION AND ELIMINATION.

Scope of the study.—An important factor in the consideration of the efficiency of a school system is the progress of children through the various grades, especially in the elementary school. One is impressed in nearly all Arizona schools with the number of apparently overage children in the lower grades. In order to ascertain the number and percentage of children underage, normal, and overage for their respective grades, data were collected in 12 of the city school systems, including approximately 16,000 children, and from 354 classrooms in schools outside of cities with special superintendents, including about 9,000 children, which is approximately 40 per cent of the enrollment in rural schools. Since the elementary school course of study is eight years in length, the normal child entering at 6 years of age and making one grade each year completes the course at 14; one entering at 7 should complete the course at 15. In the compilation of the data, therefore, children of the first grade 6 and 7 years of age are considered normal; all 8 years of age and over, overage. In the second grade children under 7 years of age are considered underage; all 7 and 8 years of age, normal; and all 9 or more years of age, overage; and so on throughout the grades, allowing two years for the normal age, or nine years for completion of the elementary school course. This is a most liberal allowance for normality when the fact is taken into consideration that the ages are taken as of September 1 instead of June 1. A child may fail and repeat a year's work and still be classed as normal.

A complete study of retardation includes not alone the age of pupils in each grade, but also the number making slow progress and the number making rapid progress through the course, aside from the age consideration. Cumulative data are not kept in Arizona schools, and information concerning progress through grades in preceding

years is not available except in a few cases. Statistics reported include only the relation between the children's age and the grade in which they are enrolled; they do not show all the facts. A pupil old for his grade may still make normal or even rapid progress. If so, the retardation of that pupil should not be charged to the school unless the school authorities fail to enforce the compulsory attendance law. Even without tables to show progress in the grades regardless of the age, the data collected showing the number and percentage of children underage, normal, and overage for their respective grades are significant and worthy the serious consideration of superintendents, principals, and teachers. The following tables show this for each of 12 Arizona cities, and the same data for the counties, including schools outside of cities with special superintendents.

Tables 50 and 51 show the number of children who are underage, of normal age and overage for the 12 Arizona cities and similar data for 22 small cities in the United States submitted for the purpose of comparison. In both cases data were gathered at the same time of the year and in the same way.

Tables 52 and 53 show data of the same kind for the schools outside of cities with special superintendents in the 14 counties of Arizona and in 20 counties of Colorado, the counties selected in order from an alphabetical arrangement. The data were collected at the same time and in the same way in both cases.

TABLE 50.—*Age-grade data for 12 Arizona cities, October, 1916.*

Cities.	Number of children.				Percentage.		
	Under age.	Normal.	Over age.	Total.	Under age.	Normal.	Over age.
Bisbee	110	1,344	749	2,203	5	61	34
Clifton	50	501	703	1,254	4	40	56
Douglas	79	1,185	1,369	2,633	3	45	52
Flagstaff	15	145	100	260	6	56	38
Globe	55	795	432	1,282	4	62	34
Mesa	41	442	208	691	6	64	30
Nogales	25	189	417	631	4	30	65
Phoenix	217	1,572	921	2,710	8	58	34
Prescott	40	299	160	499	8	60	32
Tempe	19	203	160	382	5	53	42
Tucson	93	1,302	1,705	3,100	3	42	55
Winslow	79	369	188	636	13	58	29
Total	823	8,346	7,112	16,281	[1] 5	[1] 51	[1] 44

[1] Average.

TABLE 51.—*Age-grade data for 22 cities of 5,000 population or under gathered at about the same time as those for Arizona, October, 1916.*

Cities and States.	Number of children.				Percentage.		
	Under age.	Normal.	Over age.	Total.	Under age.	Normal.	Over age.
Alma, Mich.	33	346	189	568	6	61	33
Attica, Ind.	35	453	130	618	6	73	21
Ballinger, Tex.	8	374	343	725	1	52	47
Bedford City, Va.	5	218	136	360	1	60	38
Clinton, Mo.	76	499	176	751	10	66	24
Clovis, N. Mex.	38	468	160	666	6	70	24
Dartmouth, Mass.	97	605	238	940	10	64	26
Englewood, Colo.	78	490	99	667	12	73	15
Fulton, Ky.	39	253	72	364	11	70	19
Goldfield, Nev.	29	274	105	408	7	67	26
Harvard, Ill.	23	294	84	401	6	73	21
Highland Park, Ill.	22	419	80	521	4	80	16
Marion, Iowa.	19	459	153	631	3	74	23
Owego, N. Y.	61	270	131	462	13	58	29
Prospect Park, N. J.	202	272	56	530	38	51	11
Rawlins, Wyo.	18	300	69	386	5	78	17
Red Lake, Mont.	22	1,043	19	1,084	2	96	2
Ridgefield, Conn.	69	328	120	517	13	64	24
Rushville, Ind.	32	521	247	803	4	65	31
Swanton, Vt.	31	133	93	257	12	52	36
Two Harbors, Minn.	116	790	140	1,046	11	76	13
Wellsburg, W. Va.	64	569	179	812	8	70	22
Total.	1,117	9,390	3,020	13,527	[1]8	[1]69	[1]23

[1] Average.

TABLE 52.—*Age-grade data for Arizona schools, not including 12 cities in Table 50.*

Counties.	Number of children.				Percentage.		
	Under age.	Normal.	Over age.	Total.	Under age.	Normal.	Over age.
Apache.	8	188	224	420	2	44	54
Cochise.	69	535	572	1,196	6	45	49
Coconino.	9	80	68	157	6	51	43
Gila.	8	130	101	249	3	54	42
Graham.	64	559	410	1,031	6	54	39
Greenlee.	25	169	251	445	6	38	56
Maricopa.	196	1,232	735	2,163	9	57	33
Mohave.	24	124	71	219	10	56	34
Navajo.	20	381	321	722	3	52	45
Pima.	36	405	433	874	4	46	50
Pinal.	9	74	122	205	4	36	59
Santa Cruz.	28	177	386	591	5	30	65
Yavapai.	47	258	191	476	9	54	38
Yuma.	57	155	97	309	18	50	31
Total.	600	4,487	3,982	9,040	[1]6	[1]49	[1]45

[1] Average.

TABLE 53.—*Data from schools not including cities with special superintendents for first 20 counties in Colorado, arranged alphabetically.*

County.	Total children.	Under age.	Normal.	Over age.
		Per cent.	*Per cent.*	*Per cent.*
1	1,311	11	66	23
2	54	9	52	39
3	461	15	56	29
4	49	8	63	28
5	462	10	61	29
6	1,011	12	65	23
7	116	21	61	18
8	482	10	64	26
9	43	16	65	19
10	179	2	62	36
11	274	8	43	49
12	670	10	65	25
13	375	13	63	24
14	80	11	60	29
15	282	13	66	21
16	356	19	60	21
17	851	10	69	21
18	1,149	11	65	24
19	1,021	5	71	24
20	1,112	10	65	25
Total	10,474			
Sixty-two counties (schools outside of cities)	30,379	10	61	27

A comparison of the Arizona cities with those in other States given and of the Arizona counties with the data for 20 Colorado counties (Tables 50 to 54) indicates that there is an excessive rate of retardation and a correspondingly low rate of normality and of under-age children in the Arizona schools. This is not true for all cities or counties, but 5 of the 12 cities and 11 of the 14 counties show a very high rate of retardation. A comparison of the figures for the counties of Arizona given in Table 52 with those for Colorado given in Table 53 shows that Colorado counties are almost uniformly better.

Between Arizona city schools and the schools outside the cities the difference is, on the whole, negligible. There is a slightly higher proportion under age and over age in the schools of the rural communities and a lower rate of normality. The difference may be due to the less systematic grading of rural schools. It is probable that the real conditions in this respect do not vary materially. A summary is given in Table 54.

TABLE 54.—*Per cent of underage, normal, and overage in Arizona and other places.*

	Total number of children.	Per cent under age.	Per cent normal.	Per cent over age.
12 Arizona cities	25,281	5	51	44
22 other cities	13,527	8	69	23
354 Arizona rural schools	9,040	6	49	45
62 Colorado counties	30,379	10	63	27

The problem.—The seriousness of retardation is concerned chiefly with the results to the child himself, the educational loss to the State, and the financial loss which comes from the added expense of repeating grades. Of these the first two are of the most importance. The child becomes discouraged and leaves school at an early age, while the State loses the possibility of adding to its population an educated citizen.

Children who leave school at the close of the first, second, or third year of school miss the larger part of the education which the State provides for its children, and they do not receive the minimum amount which is by general agreement considered necessary as preparation for intelligent citizenship. Many of these children have not advanced far enough to acquire the permanent habits which the school aims to inculcate, and the training gained in so short a time can not be sufficient for ordinary needs. The education is not comprehensive enough, and the school impressions are superficial. The children as well as the State lose through the failure of the children to make full use of what is freely offered.

The cost of repeating grades is an important consideration. The relation between cost and the percentage of repeaters is approximately direct; that is, if 10 per cent of the pupils enrolled are repeating, the added cost is 10 per cent of the total cost of the system. An accurate estimate of added cost can not be made from data available for Arizona because the overage children are not all repeaters; many, particularly Mexicans, enter school at an advanced age. However, from the studies made it is evident that the usual close relation between overage and retardation exists in Arizona. Further evidence that this is true is found in the figures on promotion in Table 65. The majority of those given in the tables (50 to 53) as overage children are really retarded children, and their education is costing the State annually far more than would be necessary if special classes and special teachers were provided for them.

The injury of retardation is not confined to the cost nor to the fact that the children leave school early and are therefore deprived of an education. While they do remain in school the instruction is not adapted to their abilities. They do not, therefore, receive full benefit from the time which they devote to school, and since they are improperly classified, they are a burden to the teacher and a handicap to the pupils who are making normal progress. This erroneous classification means that the teacher is obliged either to neglect the backward children or to devote to them the time needed for the proper advancement of the bright children. This is more disastrous in rural schools where individual help is a greater tax on a teacher already burdened with far too many classes. The school should be

so organized that no group of children need be sacrificed for the education of another group.

Excessive retardation.—Retardation is not so serious if confined to the lower grades and children are not more than two years overage. The schools of Arizona, however, have many children three years or more overage. (See Tables 55, 56, and 58.) Studies made in other cities indicate that a high percentage of those retarded three years or more are mentally defective. Proper provision for such children can be made only through special classes or institutions, a provision not yet adopted in Arizona to any extent. Special classes would retain in school many overage children who now drop out because they are required to attend classes with children much younger than they. The total number overage three or more years is 2,576, or 16 per cent of the children enrolled in the 12 cities, and 1,394, or 15 per cent of the total number reported in the other schools from which data were obtained. Table 57 shows the proportion of young, normal, and overage by grades in the 12 Arizona cities. It indicates that the overage problem is greatest in the fifth grade and rapidly diminishes in the upper grades and high school. This is about the grade at which retarded children reach the compulsory age limit and drop out of school. Table 58 shows the number and proportion of children retarded three or more years in each grade in the 12 cities. It will be noted that there are comparatively few three years or more overage in the seventh and eighth grades; in fact, after the fourth grade the percentage of children three or more years overage rapidly diminishes. The excessive retardation in Arizona schools is not confined to the Mexican population; figures are given in a later table.

TABLE 55.—*The number and proportion of children overage in each city for one, two, and three or more years.*

Cities.	One year.		Two years.		Three years or more.	
	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.
Bisbee	336	18	206	8	204	8
Clifton	217	17	189	15	300	24
Douglas	484	19	331	13	495	19
Flagstaff	47	19	23	9	22	8
Globe	200	16	116	9	122	9
Mesa	101	15	68	9	41	6
Nogales	124	20	98	16	188	29
Phoenix	459	17	260	9	227	8
Prescott	90	18	46	9	25	5
Tempe	62	15	41	11	57	14
Tucson	505	15	455	14	844	26
Winslow	59	11	39	8	51	10

TABLE 56.—*The number and proportion of children overage in Arizona schools outside of cities.*

Counties.	One year.		Two years.		Three years or more.	
	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.
Apache	99	24	47	11	78	19
Cochise	222	19	140	12	210	18
Coconino	34	22	19	12	15	9
Gila	37	15	28	12	36	15
Graham	171	16	117	11	124	12
Greenlee	88	20	47	10	116	26
Maricopa	353	16	201	9	181	8
Mohave	41	20	15	7	15	7
Navajo	163	22	73	10	85	13
Pima	135	15	110	13	188	22
Pinal	36	17	24	12	62	30
Santa Cruz	113	19	84	14	189	32
Yavapai	83	17	44	9	64	12
Yuma	43	14	22	7	32	10
State	1,618	17	941	14	1,394	15

TABLE 57.—*Proportion young, normal, and over age, by grades, in 12 Arizona cities.*

Age periods.	Elementary-school grades.								High-school classes.			
	First.	Second.	Third.	Fourth.	Fifth.	Sixth.	Seventh.	Eighth.	I.	II.	III.	IV.
Young	2	5	6	6	5	6	7	5	18	16	16	19
Normal	56	48	53	45	44	50	55	60	55	60	67	70
Over age	42	47	41	49	51	44	37	35	27	24	17	11

TABLE 58.—*The number and per cent of children 3 or more years over age in each grade in Arizona cities.*

Cities.	First grade.		Second grade.		Third grade.		Fourth grade.		Fifth grade.		Sixth grade.		Seventh grade.		Eighth grade.		Total.	
	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.
Bisbee	69	15	47	8	66	19	20	8	12	5	7	4	3	2	0	0	204	8
Clifton	36	8	68	32	35	33	62	38	31	35	26	29	16	22	7	13	300	21
Douglas	202	23	109	25	83	21	48	18	46	18	7	4	0	0	0	0	495	19
Flagstaff	9	11	4	11	0	0	4	14	1	3	2	7	2	8	0	0	22	8
Globe	24	8	22	10	21	11	19	12	16	13	10	8	9	8	1	1	122	9
Mesa	9	7	9	8	4	4	7	7	6	7	4	11	2	2	0	0	41	6
Nogales	63	24	51	47	21	31	34	44	15	30	1	4	3	10	0	0	188	29
Phoenix	37	7	44	12	40	11	50	13	30	10	12	5	14	5	0	0	227	8
Prescott	6	6	0	0	8	11	4	6	4	5	3	7	1	2	0	0	25	5
Tempe	6	10	12	20	12	23	11	20	12	18	3	11	1	3	0	0	57	14
Tucson	289	27	207	27	117	30	135	30	54	21	23	14	13	8	6	5	844	27
Winslow	23	17	8	15	9	14	7	8	2	3	0	0	0	0	2	6	51	10
Total																	2,576	16

Age range.—The range of ages of children in the Arizona city schools is shown in Table 59. The variation in the first grade is from 5 or 6 to 15 or 16 years in several cities. The variation is highest

in the first three grades and diminishes rapidly after the fourth grade for reasons which have been stated elsewhere.

The range is unusually great, particularly in the cities with a large number of Mexican refugees. The older children among them should not be put into regular grades but in special classes. The incongruity of teaching 5-year-old and 16-year-old children together and in the same way is apparent.

TABLE 59.—*Range of ages in each grade for 12 cities.*

Cities.	First grade.		Second grade.		Third grade.		Fourth grade.		Fifth grade.		Sixth grade.		Seventh grade.		Eighth grade.	
	Range.	Variation.	Range.	Variation.	Range.	Variation.	Range.	Variation.	Range.	Variation.	Range.	Variation.	Range.	Variation.	Range.	Variation.
	Yrs.	Yrs.	Yrs.	Yrs.	Yrs.	Yrs.	Yrs.	Yrs.	Yrs.	Yrs.	Yrs.	Yrs.	Yrs.	Yrs.	Yrs.	Yrs.
Tucson	5-16	11	6-16	10	7-16	9	7-16	9	8-16	8	9-16	7	10-16	6	11-16	5
Tempe	6-12	6	6-10	4	7-15	8	8-16	8	9-16	7	10-16	6	11-16	5	12-16	4
Globe	5-13	10	6-14	8	7-15	8	7-15	8	8-17	9	9-17	8	10-17	7	11-17	6
Nogales	5-14	9	6-16	10	7-15	8	8-16	8	9-16	7	10-16	6	10-16	6	11-16	5
Mesa	5-13	8	6-14	8	7-12	5	8-14	6	9-14	5	9-15	6	11-16	5	12-16	4
Flagstaff	6-13	7	6-12	6	7-10	3	8-14	6	9-14	5	11-16	5	11-16	5	12-16	4
Winslow	6-14	8	6-14	8	7-14	7	8-14	6	9-15	6	9-15	6	11-16	5	12-16	4
Prescott	6-12	6	6-10	4	7-14	7	8-14	6	9-15	6	10-14	4	11-15	4	12-17	5
Douglas	5-16	11	6-15	9	6-16	10	8-12	4	9-14	5	10-15	5	11-16	5	12-16	4
Clifton	5-16	11	6-16	10	7-15	8	7-16	9	9-16	7	9-16	7	11-16	5	12-16	4
Bisbee	5-13	8	6-14	8	6-16	10	8-16	8	9-15	6	10-17	7	11-16	5	12-16	4
Phoenix	5-15	10	6-15	9	6-15	9	7-16	9	8-15	7	10-17	7	11-16	5	12-16	4
											9-16	8	10-16	6	12-16	4
Median		8.5		8		8		7.5		7		6.5		5		4

Attenuation.—Other factors influencing or resulting from retardation are shown in Tables 60 and 61. These tables show the tendency of the number enrolled in school to diminish after the third grade and after the age of 14. Of 16,286 children enrolled in the elementary grades of 12 Arizona cities, 7,265 are in the first two grades and 9,463 in the first three grades. It will be noted from Table 60 that for every 100 enrolled in the first grade only 35 are enrolled in the fifth, 23 in the sixth, and 19 in the eighth. For the purpose of comparison similar data are given from 30 cities in the United States of 10,000 population or under, selected at random. Table 61 shows the tendency to drop out after the fourteenth year of age. Here again similar data for comparison are presented from eight other cities, also selected at random.

TABLE 60.—*Number enrolled in each grade for every 100 enrolled in the first grade.*

Cities.	First grade.	Second grade.	Third grade.	Fourth grade.	Fifth grade.	Sixth grade.	Seventh grade.	Eighth grade.
Bisbee	100	70	53	37	33	26	22	14
Clifton	100	50	40	39	21	21	17	11
Douglas	100	48	45	30	29	22	12	15
Flagstaff	100	56	50	44	50	46	38	30
Globe	100	67	60	51	40	40	36	23
Mesa	100	91	85	72	67	28	64	38
Nogales	100	42	26	30	19	9	12	8
Phoenix	100	62	59	56	51	45	46	40
Prescott	100	73	72	62	62	42	43	42
Tempe	100	89	88	101	104	42	47	50
Tucson	100	46	36	40	23	15	15	11
Winslow	100	40	44	66	49	27	23	22
Total	100	52	46	43	35	23	22	19
For 30 other cities	100	88	77	73	70	53	52	43

TABLE 61.—*Holding power of Arizona city schools as compared with 8 other cities—Number of children of each age for every 100 six years old.*

	Years of age.													
	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Bisbee	100	94	91	87	78	66	69	65	41	37	18	11	6	2
Douglas	100	141	153	160	132	112	135	101	91	60	38	17	7	3
Globe	100	104	116	95	93	86	85	70	81	55	47	21	7	1
Prescott	100	82	113	95	90	73	103	91	82	82	53	58	31	8
Tucson	100	145	157	172	154	140	150	120	98	71	49	24	12	3
Winslow	100	63	91	100	62	71	78	46	52	24	43	17	14	8
Total	100	114	119	115	98	97	106	86	82	54	37	18	10	3
For 8 other cities	100	107	110	112	104	101	96	93	86	67	48	25	19	8

Contributory conditions.—The tables suggest the very pertinent questions, why is there so much retardation in the elementary grades, and why are so few children enrolled in the upper grades? It is estimated by school officials that in the majority of the 12 cities mentioned half the children enrolled are Mexicans. Some of the retardation is undoubtedly due to the presence of these children, many of whom have but recently come to the United States. Few of them, regardless of age, have attended school at all or more than a few months, and even these are handicapped by a lack of knowledge of the English language. It is probable also that conditions in the border cities were abnormal when the data were collected, owing to the large number of refugees in those cities.

In order to determine the number of Mexican and of American children enrolled and the effect of the presence of Mexicans on the statistics of retardation, separate data were collected in three cities. The results are shown in Table 62. The figures for these cities show that while the number of Mexican children overage is excessive, the rate among American children is also high except in one city—Tempe—where it is unusually low. These facts and the observa-

tions made indicate that the presence of Mexican children increases the amount of retardation but does not account for all of it.

TABLE 62.—*Age-grade data, by nationality, from three cities.*

Cities.	Nationality.	Under-age.	Normal.	Overage.	Total number of children.
		Per cent.	*Per cent.*	*Per cent.*	
Nogales	Mexicans	0	22	78	193
	Americans	12	42	46	436
	Total	4	31	65	631
Tempe	Mexicans	0	30	70	172
	Americans	10	78	14	197
	Total	6	52	41	369
Tucson	Mexicans	0	29	71	1,404
	Americans	4	51	45	1,696
	Total	3	42	55	3,100

Age-grade data of 319 cities of the United States.[1]

	Boys.	Girls.
Median per cent overage, one year or more, in 319 cities:	*Per cent.*	*Per cent.*
In cities of 25,000 population and over	38	32
In cities of less than 25,000	38	36
Median per cent underage:		
In cities of 25,000 population and over	4	4
In cities of less than 25,000	4	5

[1] U. S. Bureau of Ed. Bull. No. 5, 1911.

A study of the conditions set forth in this section shows that, before the Arizona schools can reach adequate efficiency, it will be necessary for them to take steps to lower the high rate of retardation among American as well as among Mexican children; to get more foreign children into the upper grades; and to give all children, American and foreign, who because of unavoidable reasons will drop out of school before reaching the upper grades and high school, the kind of work that will be most helpful to them as a preparation for efficient living. Of the causes possibly contributing to the high percentage of retardation a few are discussed here and remedies suggested. No city or county can make use of all of them, but each should take some steps toward remedying existing conditions. A few cities have begun to attack these problems seriously.

Ungraded rooms.—At Clifton the superintendent has organized a special room for average children, so that a child 12 or 15 years of age is not placed in a first-grade room with children 6 years of age. Several children in this special room have made three or four grades a year. The superintendent, summarizing its value, says:

(1) It allows the pupil to appreciate the subject matter of which he is capable, but does not encumber the classroom of the younger group. (2) The pupil enters his proper grade as soon as he has made sufficient progress.

(3) It saves the humiliation of comparison of older with younger and more advanced children. They are treated as young men and women and their work assumes dignity. (4) Each pupil is required to do his own work in the ungraded class, and his growth is measured by the amount of effort expended.

The plan of providing special rooms for retarded children is carried on successfully in nearly all large cities in the country.

Differentiation of courses.—In practically all cities in Arizona and in graded schools large enough to make the adjustments, the non-English-speaking children are segregated for the first two, three, or four grades. This is a step in the right direction, particularly for those over age, but is of little help if the same course and methods are followed as for English-speaking normal children. Not much has been done to differentiate the courses, textbooks, and methods. Few of the non-English-speaking children get beyond the fifth grade. Many do not advance beyond the third. They are out of school at the age of 14 or 16 with scarcely the ability to read and with no practical work in manual training, gardening, cooking, or sewing. In view of these facts a course of study should be prepared whose main features are English, practical problems in arithmetic, and prevocational work. The courses in handwork should not be deferred until the fifth and sixth grades. If they are, many children have no opportunity to enter them. As early as possible each city should provide prevocational courses in trade preparation, manual training, cooking, and sewing, for all children 13 or 14 years of age not in the sixth or seventh grade. These children will, with an occasional exception, drop out of school at the age of 16, when the compulsory-attendance law no longer holds them. Approximately half time should be devoted to regular classroom work, half to handwork. If some such courses were offered, the children who drop out of school before completing the seventh and eighth grades would be much better equipped to take their places among the wage earners of the community than when kept upon abstract work only indirectly related to the work of the world.

This recommendation applies only to normal children overage for their grade. Special provision should be made for subnormal children. They should not be in the regular classes with normal children; nor should they be in the special classes recommended for over age children of normal ability. If either backward or subnormal children are kept in a regular class, much of the time that the teacher should give to bright and normal children will be given to the backward, or else they will be entirely neglected. Studies made in other cities show that usually 2 or 3 per cent of the total number of children in any school system are subnormal. The proportion is probably about the same in Arizona. Figures are given earlier in this report

(see p. 43). Some of them should be in special classes for backward children, and others should be placed in an institution.

Size and number of classes.—Overlarge classes are direct contributory causes to retardation. The number of pupils should not exceed 35 or 40 children. Table 63 shows the size of classes in the elementary schools of 14 cities. It will be seen that a high proportion of the teachers in 10 cities conduct classes containing over 40 children. In some cities classes of 50 or 60 children were found. Efficient work is not possible under such conditions. Certain children needing special help can not receive it, and consequently fail to be promoted. A number of cities are now planning to erect new buildings. When this is done, if not before, provision should be made for the special classes recommended. This provision will in most instances reduce the classes in the lower grades to normal size. When it does not, additional teachers should be engaged.

TABLE 63.—*Enrollment to the teacher in elementary schools.*

Cities	Median group-size enrolled	Teachers having more than 35 pupils	Teachers having more than 40 pupils
		Per cent.	*Per cent.*
[illegible]	26–30	19	6
[illegible]	29–31	14	14
[illegible]	31–35	34	8
[illegible]	31–35	31	19
[illegible]	31–35	27	27
[illegible]	36–40	51	29
[illegible]	36–40	60	33
[illegible]	36–40	50	37
[illegible]	36–40	80	60
[illegible]	36–40	65	41
[illegible]	41–45	91	70
[illegible]	41–45	89	77
[illegible]	41–45	96	77
[illegible]	46–50	70	65

Figures showing the enrollment in one-teacher country schools, the number of grades, and the number of daily recitations are given in Table 64. In many cases teachers in such schools are conducting far too many recitations daily. In a few cases among those replying to the bureau questionnaire, as many as 44 and 54 recitations are reported. Of all teachers reporting, 35 per cent conduct more than 25 recitations daily; 14 per cent, more than 30 recitations. When a teacher conducts 25 recitations daily, the average time given each class in a school day of 5 hours (allowing for noons and recesses) is 12 minutes; for 30 recitations only 10 minutes can be given. A 15-minute recitation period is too short for any but the primary grades; 30-minute recitation periods are necessary above the sixth grade to accomplish good results.

TABLE 64.—*One-teacher schools.*

Counties.	Number reporting.	Number reporting enrollment of—									Number reporting having—									Number reporting daily recitations.			
		5 or less.	6 to 10.	11 to 15.	16 to 20.	21 to 25.	26 to 30.	31 to 35.	36 to 40.	Over 40.	1 grade.	2 grades.	3 grades.	4 grades.	5 grades.	6 grades.	7 grades.	8 grades.	9 grades.	15 or less.	16 to 20.	21 to 25.	26 to 30.	Over 30.
Apache	9	0	2	2	1	2	0	1	1	0	1	0	0	1	2	2	1	2	0	1	3	2	1	2
Cochise	46	0	3	16	14	6	3	2	1	1	0	0	0	7	9	8	13	8	1	3	7	19	10	5
Coconino	12	0	0	3	4	1	1	2	0	1	0	0	0	0	3	1	4	4	0	0	3	3	2	1
Gila	12	0	1	3	5	2	0	0	0	1	0	0	0	2	5	2	0	3	0	2	1	5	1	2
Graham	16	0	1	0	6	1	2	3	2	1	0	3	1	0	5	2	1	5	0	0	7	4	3	2
Greenlee	11	0	2	3	2	0	0	3	0	1	0	0	0	2	2	3	2	0	0	0	4	1	1	4
Maricopa	22	0	4	2	5	5	4	0	1	1	0	4	3	3	4	2	3	3	0	3	4	7	6	1
Mohave	11	0	1	5	4	1	0	0	0	0	0	0	0	3	3	0	6	2	0	1	4	2	2	2
Navajo	14	0	1	4	2	5	2	0	0	0	0	0	0	3	1	2	3	1	0	3	2	1	5	1
Pima	18	0	0	2	3	3	0	3	3	4	2	0	2	8	4	3	3	1	0	4	3	3	3	4
Pinal	24	3	3	9	5	3	0	0	1	0	0	1	3	4	8	3	3	2	0	2	5	8	4	4
Santa Cruz	16	0	0	3	4	4	3	0	1	1	0	1	0	2	3	3	4	2	1	1	3	5	4	3
Yavapai	30	0	8	10	6	3	3	0	0	0	0	0	1	9	5	6	2	7	0	4	7	9	7	0
Yuma	17	0	2	8	1	2	1	2	0	1	1	0	2	1	4	4	2	2	0	1	6	4	2	2
Total	258	3	28	70	62	38	19	16	10	12	4	9	15	38	56	42	45	47	2	25	59	73	51	33
Per cent	80	1	11	27	24	15	7	6	4	5	2	4	6	15	22	16	17	18	1	10	24	30	21	14

Grouping.—The problem of retardation in city systems could be solved in part if teachers, especially in the first two or three grades, were required to divide their rooms into groups. In some schools all the children in the first grade have practically the same work; in others there are two groups in the first grade. It is impossible to hold 40 first grade children to the same work. The slow-moving ones should be in one group, a faster set in another group, and so on until at least three groups have been formed. If there are two first grades in a building, six or seven groups can be formed, so that there will soon be an interval of only about a month or two between two groups. A backward child will not then be held until the end of a term and be required to repeat a year's work. He can be dropped behind to the next lower group when he shows that he can not keep up with his group; and if a child shows special ability he can be advanced to the next higher group. If this plan is continued throughout the course, in a few years many of the bright children will be a grade ahead and none of the slow-moving ones will have been required to repeat an extra year's work. This suggestion, of course, applies principally to large graded schools, preferably those having one grade to a teacher. In rural schools an entirely different organization is necessary, providing among other things for combination and alternation of classes.

Kindergartens.—Kindergartens are reported from only six cities of Arizona. The superintendents in charge of these, as well as others who have made careful studies of the subsequent progress of kindergarten children through the grades, report that those with kindergarten training have an advantage over those without such training.

This is especially true of children who must learn the English language. A child entering the kindergarten at 5 years of age usually gains sufficient command of English to take up the work of the first grade before he enters it.

(E) PROMOTION.

Table 65 shows the promotion rate by grades for 12 Arizona cities. The rate in all but two cases is low, especially in the first and third grades. In all cities it differs widely in the different grades. It is difficult to account for this except by assuming that the work of the different grades is not equally suited to the ability of the children enrolled in them. There may be something wrong either in the course of study or in the method of grading. It is hard to account for the high rate of nonpromotion in the first grade.

TABLE 65.—*Proportions of pupils promoted June, 1916, by grades and cities.*

Grades.	Nogales.	Mesa.	Prescott.	Phoenix.	Tucson.	Winslow.	Globe.	Flagstaff.	Average.
	Per ct.	*Per ct.*	*Per ct.*	*Per ct.*	*Per ct.*	*Per ct.*	*Per ct.*	*Per ct.*	*Per ct.*
1	57	77	75	84	81	98	66	65	79
2	74	92	74	91	79	95	87	86	87
3	75	90	84	91	80	95	90	91	88
4	81	93	79	88	83	97	85	87	88
5	83	97	63	94	77	96	94	89	87
6	72	88	75	94	93	97	88	91	91
7	80	98	92	88	97	100	88	100	92
8	79	95	77	93	96	100	89	100	93
Average	66	89	79	90	83	98	83	83	87

A low promotion rate means much retardation. The average for the cities given in the foregoing table is raised by two cities in which the rate is relatively high. Using this average, 87 per cent, for 1,000 first grade children, only 790 pass the first grade; of the 790, but 687 pass the second, and so on until at the end of the eighth grade only 360 of the 1,000 children complete the course in eight years. With a promotion rate of 80 per cent, only 168 children of the 1,000 entering the first grade complete the eighth within the allotted time.

What proportion of a class should be promoted is not a settled question. Some authorities assert that nonpromotion greater than 8 per cent is excessive.[1] Theoretically, no child should fail, even one mentally deficient. He should be kept going ahead at the rate suited to his capacity and not be required to repeat a year's work. To reach this ideal should be the aim of every superintendent. If 20 per cent of the children fail, something is wrong with the course of study, the teaching, or the supervision. Only 2 or 3 per cent of the children

[1] Report of a survey of the school system of Butte, Mont., prepared by the Butte survey commission.

in a school system are mentally deficient. The only other reason for a pupil's failure for which the school is not responsible is illness, and even in that the school is at fault if the ventilation is poor, if there is no health inspector, and if no school nurse is employed to help prevent sickness. The claim that a child fails because he is lazy is an acknowledgment that the teaching is not good enough to reach the lazy child. In the end the school must be held responsible for the failures and consequently for retardation and elimination. It is true that some of the retardation in Arizona is due to the fact that people move frequently from city to city. This cause can not be ascribed to the schools. Special care, however, should be taken, when this condition exists, to place the child properly when he enters a new system. In some cases it is customary to place the children in lower grades without giving due attention to their abilities.

Retardation would be diminished if summer schools were established in all cities in which climatic conditions permit. According to the average promotion rate of 12 Arizona cities, for each 100 children enrolled in a grade, 13 fail, or 104 for the eight grades if enrollment were 100 in each. A city in which there are 100 or more failures would save ultimately through the establishment of a summer school. A six-weeks term would enable many of those who failed to continue with their classes the next year. Data at hand from several hundred city schools show that from 75 to 90 per cent of the pupils who fail at the end of the term in June and take a summer course are promoted. Three cities in Arizona—Bisbee, Douglas, and Globe—report summer schools. In Bisbee and Globe the summer school is for all children in all grades from one to eight; in Douglas for those who have failed in grades from five to eight. All three cities report excellent results. At present it may not be possible for all cities in Arizona to maintain schools for 11 months in each year, but in those cities in which the summer months are not extremely hot the organization of six-weeks summer schools for children who fail in one or two subjects would enable the overage children to complete more of the higher grades before they reach the compulsory age limit, and would enable some children to complete the eight-year course in less than eight years.

The cost of maintaining a summer school is insignificant compared to the educational gain. If 100 children fail, repeating one year would mean double cost for them. If the cost per pupil in the elementary schools is $40 a year, $2,000 will be required to take 100 pupils over a half year the second time. If 50 of the 100 pupils attend summer school and 30 are promoted, $600 is saved. A summer term of six weeks attended by 50 pupils could be maintained for much less than $600.

Retardation could be decreased in some cases if the emphasis of the first two or three years were placed on fewer things. Learning to read is the chief aim in the first two or three years. In the first two grades reading is the only subject in which failure should be considered, yet Table 66 shows that in some systems children in the first grade fail in arithmetic, spelling, and penmanship. While it was impossible to obtain complete data from all cities regarding the proportion of failure in each subject, the reports show that some of the retardation in those from which data were obtained is caused by overemphasizing the importance of arithmetic and other subjects in the primary grades. The table submitted shows the proportion of failures in the different subjects in all the grades for one city enrolling about 2,500 children. This may not be typical, but the same condition probably exists in other cities.

TABLE 66.—*Proportion of children enrolled in each grade who failed in each of five different subjects in one city.*

Grades.	Arithmetic.	Reading.	Spelling	Writing.	Geography
	Per cent.	*Per cent.*	*Per cent.*	*Per cent.*	*Per cent.*
1	15.5	10.0	11.5	9.0	0.0
2	10.5	2.5	4.5	1.0	.0
3	19.5	.0	3.0	2.0	4.0
4	21.0	2.0	2.0	2.0	17.5
5	19.5	3.5	.0	2.0	15.0
6	11.5	.0	.0	2.0	.0
7	12.0	5.0	3.0	5.0	10.0
8	5.0	6.5	11.0	.0	8.5
Average	16.0	4.0	5.2	3.5	5.0

It is evident that arithmetic in this city is a fetish, since four times as many children fail in it as in reading, and three times as many as in spelling and other subjects. If learning to read is the most important aim of the first grade, it is not justifiable for 15.5 per cent of the children to fail in arithmetic, 11.5 in spelling, and 9 in writing. It may also be noted that 17.5 per cent of fourth-grade children fail in geography, though this subject is not the essential one in the fourth grade. Such wholesale nonpromotion in the lower grades may result in superior work at the upper end of the course, but it deprives a great many of the benefits of instruction in the higher grades. A preceding table shows that the percentage of pupils promoted varies greatly among the different cities and among the different grades. Promotion percentage is generally much too low in the lower grades.

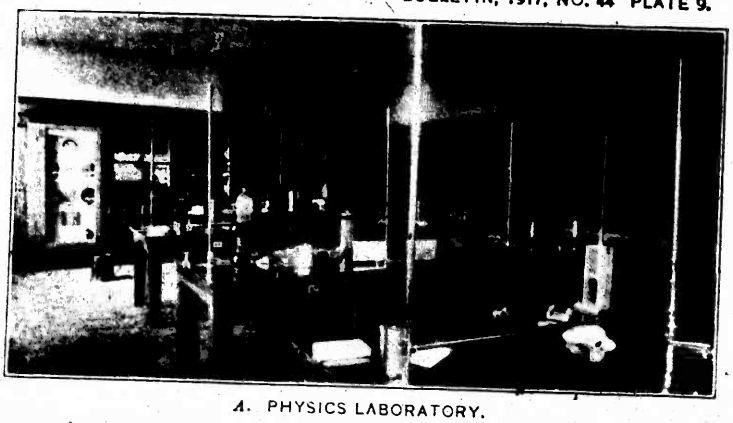
The whole matter of promotion and its relation to the existing system of grading and to the course of study requires careful consideration by Arizona superintendents.

SUMMARY.

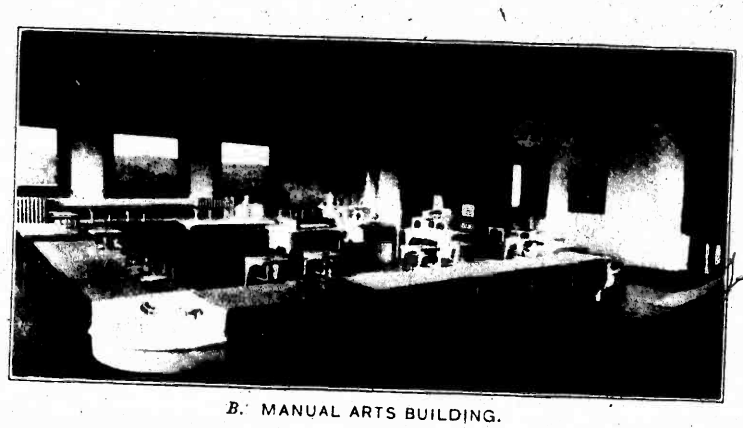
The observations concerning the whole matter of school attendance, particularly as related to over-ageness and retardation, show such wide variations among the cities and among the counties that the committee feels justified in suggesting special local study of conditions of each system. In the matter of securing better attendance and more rigid enforcement of the compulsory education law, certain suggestions are made above. To the problem of excessive retardation and the accompanying evils the committee feels there is no single solution for all cases. In some cities and for some counties the matter is more serious than for others. The case of Tempe, for example, has already been referred to as having few retarded children except among the Mexicans. Among the counties, Mohave County has but 7 per cent of children overage three years or more, Maricopa 8, Coconino 9, while Pinal has 30, and Santa Cruz 32 per cent. Special schools and special classes and a revised curriculum which would make it possible to include vocational subjects are the best solution of this difficulty. Some allowance must be made for the non-English-speaking children. The language difficulty must be met by the majority of the schools in the State, though perhaps to varying extent; but more satisfactory methods for dealing with it should be devised. In general the responsibility must be assumed by the school itself, and the matter must be remedied through organization and classroom practice.

Among the causes of retardation especially applicable in the schools outside of cities may be enumerated: (1) Lack of supervision; (2) unqualified teachers; (3) too many grades or too many pupils for one teacher, and no time for individual work with slow pupils; (4) short terms and irregular attendance; (5) a course of study which does not provide for children who are more interested in things than in books. One remedy is to raise the standard of schools all along the line. Fewer pupils and fewer grades in charge of well-trained teachers, with careful supervision, would remedy some of the retardation evil. A special course of study including less bookwork and more vocational work would be of greater interest and more practical value to so-called backward children.

Elsewhere the committee is recommending a more centralized county school system which can be conducted on a professional basis in charge of a superintendent who shall hold his position during good service, and be selected because of peculiar fitness for the work he is to do. Such a superintendent in charge of well-trained teachers would make a special study of the retardation in each county, as the city superintendent should for each city. On the basis of this



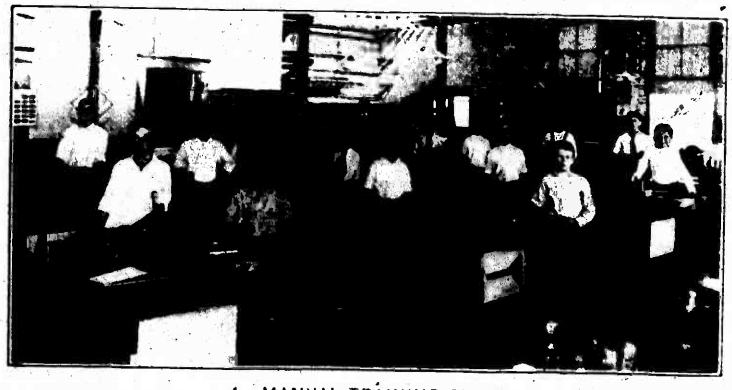
A. PHYSICS LABORATORY.



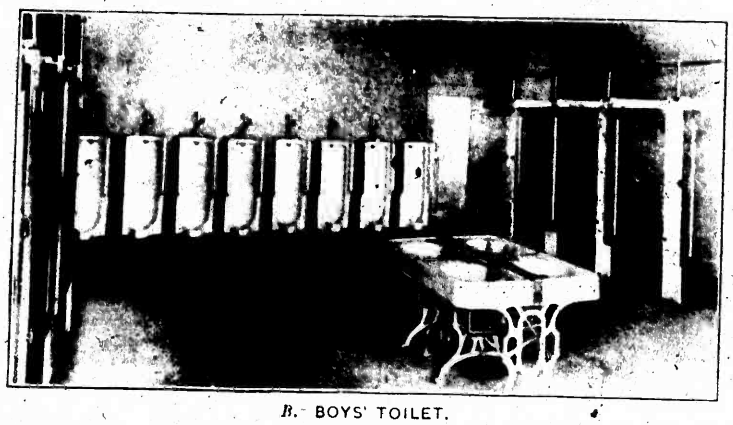
B. MANUAL ARTS BUILDING.

C. MACHINE ROOM IN MANUAL ARTS BUILDING.

PRESCOTT HIGH SCHOOL.



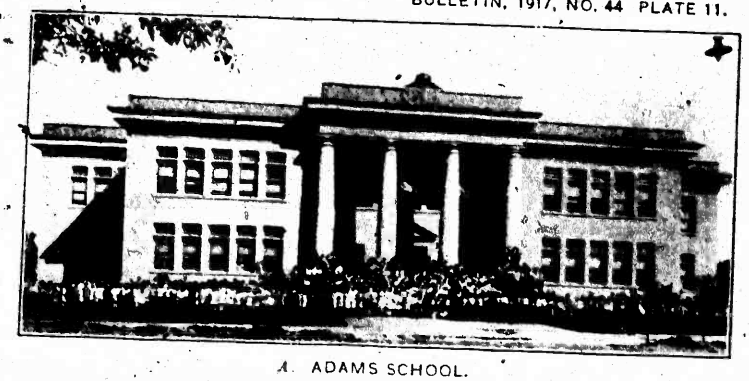
A. MANUAL TRAINING SHOP.



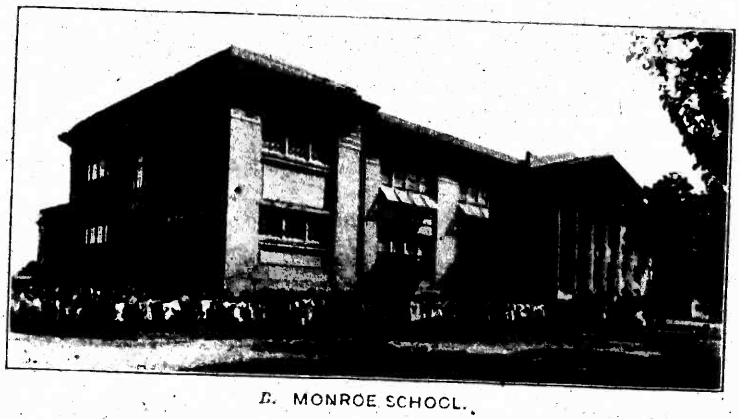
B. BOYS' TOILET.

C. SEWING ROOM.

MONROE SCHOOL, PHOENIX.



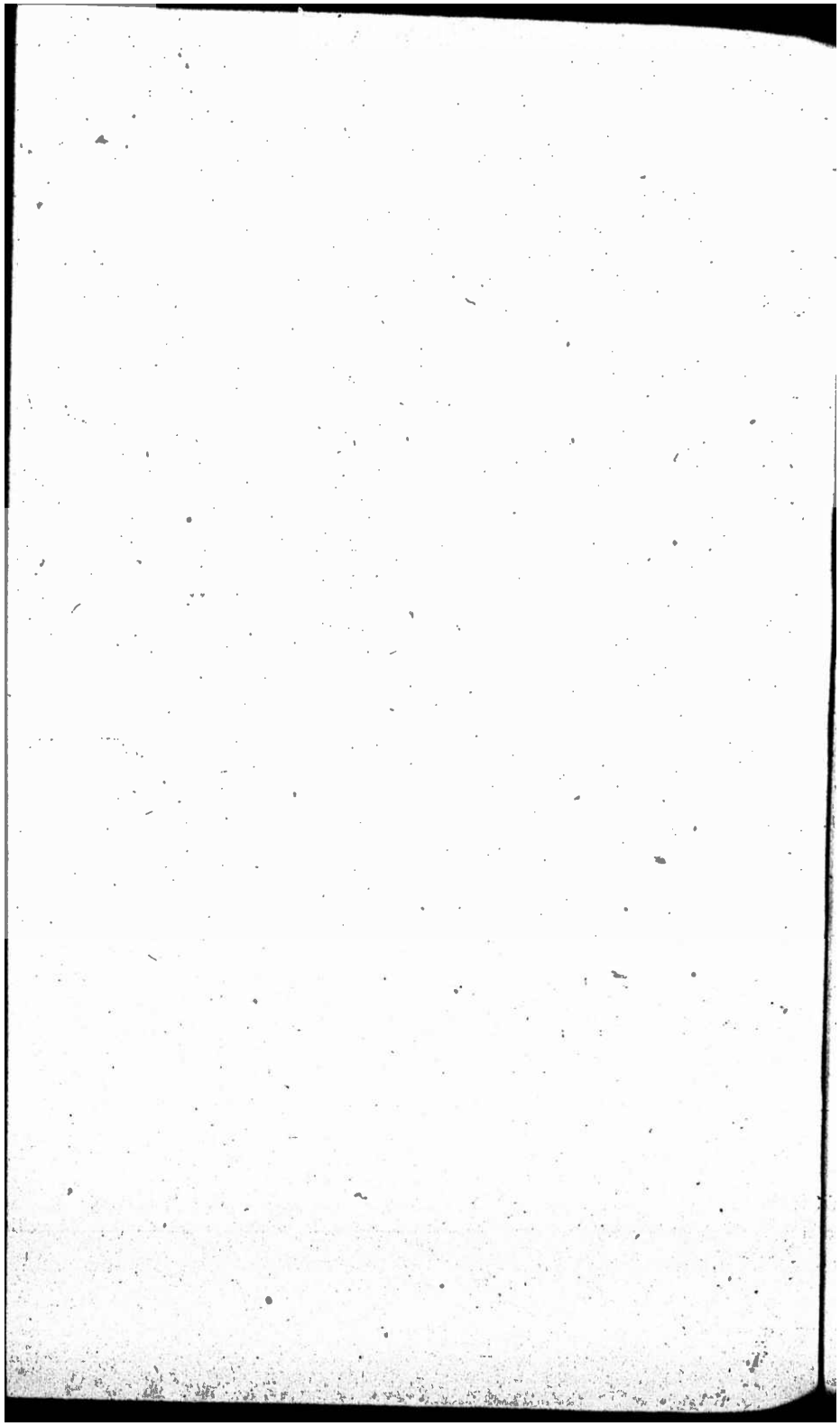
A. ADAMS SCHOOL.



B. MONROE SCHOOL.

C. McKINLEY SCHOOL.

NEW BUILDINGS IN PHOENIX.



study satisfactory methods of dealing with the problem could be worked out, appropriate in each case to particular needs.

Section 7.—INSTRUCTION.

The final test of the efficiency of a school system is found in the quality of the classroom instruction. Matters of school finance and administration are successful or not according to the results exhibited in the school work—the only purpose for which schools exist.

In order to gain a general idea of the methods of instruction, nearly one-fourth of the teachers in the State were visited. Visits of from 20 minutes to an hour were made to about 200 city schools, and at least 100 visits of the same length to rural school teachers. This number does not include a large number of visits made by members of the committee for the purpose of investigating general conditions regarding the location of buildings, sites and grounds, and the possibilities for supervision, rather than for judging classroom practice.

(A) JUDGING THE INSTRUCTION.

An examination into the quality of the instruction offered presupposes that the investigators had in mind certain standards to be attained, or at least approached, by the teachers and pupils. These standards obviously depend on the general aims of education and the specific aims to be accomplished in a given period of time and by means of given study material. A report of this kind should give to school officials, patrons, and interested citizens a general knowledge of the work of the schools as it is now conducted, point out what it should be, and suggest a practical and economical method of raising the instruction to the desired plane.

Stated in general terms, the aim of education is to aid in efficient and appreciative living and to enable one to become an intelligent participator in the responsibilities and benefits of citizenship. Certain fundamental principles necessary to accomplish this aim:

1. The material of instruction should be drawn from life and not alone from textbooks, except as they embody large principles and facts vital to the immediate surroundings of the children or closely related to them.

2. Topics for daily recitations may be measured in importance by their relation to the work in hand at the time the instruction is given and the extent to which the children feel this relationship.

3. Isolated bits of information unrelated to immediate needs or too remotely related for an appreciation of their value to be realized have

little educative worth. The facts learned should be organized in relation to their use.

4. Subject matter must be inculcated in such a way as to encourage judgment, initiative, and the ability to think quickly and correctly. The technique of instruction may be judged by its relation and application to the accomplishment of these principles and aims.

(B) CHARACTER OF THE INSTRUCTION.

Attitude of teachers.—On the whole the attitude of the teachers toward their work is good. That they are striving to secure good results is evident from their classroom work, their general and professional enthusiasm, and from the fact that they welcome suggestions and help from the superintendents and their assistants, that they are regular readers of two or three professional magazines, that many of them during the past year read two or three books on educational methods and general topics in education, and that many attend summer schools. The amount of professional reading done by rural teachers is indicated in Table 67.

Class and room organization.—The discipline and organization of classrooms is generally good, though far better in city than in rural schools, in many of which there is almost complete lack of organization as to routine. There is much waste of time through trivial questions which interrupt recitations, constant leaving of the room, restlessness, and lack of assigned tasks to keep pupils busily employed. The teachers in the cities on the whole have mastered the details of classroom management better. A few have not yet learned how to save time by organizing details. To illustrate, teachers were seen going to every child in the room to collect composition and arithmetic papers, which might more quickly be passed to the front seat in each row and collected by a monitor. During the three or four wasted minutes the teachers could be giving additional instruction to backward pupils or doing some one of a dozen things worth while. Many others lost time because the material needed for the recitation was not ready. One teacher sent to another room for a map, another wasted several minutes looking up a reference which should have been marked ready for use.

TABLE 67.—*Professional reading and community activities of rural teachers.*

Counties	Number of teachers.	Teachers reading professional journals during the year.				Teachers reading books during the year.				Part in community activities in school or out.			
		Read none.	Read one.	Read two.	Read three.	Read none.	Read one.	Read two.	Read three.	Not reporting.	None.	Fair.	Much.
Apache	26	4	5	10	7	10	4	4	6	9	2	9	6
Cochise	85	16	19	34	16	41	10	10	23	16	8	29	32
Coconino	[1]14	1	2	6	5	8	0	0	8	2	2	6	2
Gila	29	12	1	9	8	20	0	5	4	12	4	11	2
Graham	52	7	13	17	13	18	6	8	20	7	0	37	9
Greenlee	27	1	6	13	7	13	1	0	13	2	2	16	7
Maricopa	109	19	20	39	31	46	12	11	40	37	3	47	22
Mohave	16	3	7	6	0	4	1	4	7	2	1	10	3
Navajo	38	1	11	14	10	12	4	8	12	8	1	19	8
Pima	31	7	10	6	8	12	4	6	9	9	4	18	2
Pinal	38	7	9	17	5	21	1	6	6	10	7	16	8
Santa Cruz	22	4	8	6	4	12	4	0	6	5	7	8	2
Yavapai	47	2	12	20	14	23	4	7	13	30	5	21	10
Yuma	23	8	7	6	5	10	1	2	6	11	0	8	6

[1] Five teachers did not answer.

Waste in the recitation.—Waste is not confined to routine organization. Another source noted in a number of rooms is the management of recitations in arithmetic, algebra, and some other subjects. One teacher sent 10 pupils, approximately one-third of the class, to the board to solve assigned problems. While they were at the board the other members of the class remained idle at their seats. When each of the pupils at the board had finished his problem he returned to his seat and remained idle. When all had finished each pupil explained his solution step by step. This consumed all the time, and no new principles were learned or new problems solved. The teacher could have provided supplementary work for the pupils not at the board. Recitation time should be devoted to new difficulties. There is no need for solving again and repeating the steps involved in problems that all the class have solved.

Assignments and study periods.—Another source of waste observed in many classrooms is the lack of definite assignments. They were given by pages or topics and in only a few instances observed was the attention of the children called to the aim or purpose of the lesson or to the important points to be considered in studying it. Children who have not yet learned to attack the lesson waste much time conning it over. To them one point is as important as another. The least a teacher can do in the assignment is to help the children discover the main points. The class should know for what it is to be held responsible. Much of the desultory school work observed was due to lack of intelligent study. This was made particularly obvious by the fact that observations were made early in the school year, when children and teachers are new to each other and explicit direc-

tions are especially pertinent and necessary. There is very little difference in this respect between rural and city teachers.

The poor preparation of many lessons was the result of improper assignments. Teachers asked questions in a recitation that should have been asked in the assignment, and they received in reply halting and hazy answers. Teachers who feel they have no time to make assignments fail to understand that a part of the period used for this purpose would save much wasted effort in the next recitation.

Teaching children to study is closely associated with making proper assignments. Very few intelligent efforts to give good study lessons were observed except in primary grades, and a great need for better ability to study exists. A few lessons were noted in which the teacher evidently intended to help the children in this direction, but these efforts consisted chiefly in listening to trivial questions rather than in giving intelligent help. In view of the fact that so many teachers are failing to help pupils to study in the best way, to conduct good study periods, and to give intelligent assignments, these topics might well be made the subject for study and discussion in a series of teachers' meetings. The majority of the teachers need definite assistance in the classroom by a supervising officer, either principal or superintendent. The waste of time on the part of teachers and pupils mentioned above can be eliminated only by such supervision.

The material of instruction.—To accomplish the aims of education as previously stated, the selection and use of material of instruction is an important consideration. Too often the only material used in the preparation or recitation of the lesson is the textbook. This tendency is more common in rural than in city schools. The selection and organization of topics for study is a task entirely beyond the ability of the untrained teacher. Unless the course of study provides this organization, it usually follows that the teacher falls back on the textbook. Memorizing facts as given in the book and repeating them directly to the teacher in the recitation becomes the chief purpose of the pupils. The possibilities of the recitation are entirely lost in mere routine; there is no discussion, no opportunity to exercise judgment, and no time for thinking. The teacher rather than the pupil is the center of attention and formulates the opinion for the class.

A point noted in every classroom of English-speaking children was the extent to which the teacher was able to arouse interest and to stimulate the children to ask questions. If children do not ask questions it is evident that there is very little real interest or appreciation of the possibilities of the subject. One teacher seemed proud of the fact that she had succeeded in breaking up the habit of asking questions which the children had formed in the grade below. The teacher

should guide rather than suppress questions. The child, not the teacher, should be seeking information. This abnormal condition in which the teacher asks the questions and the children supply the answers is usually the result of too close confinement to the information in the textbook.

A number of teachers were questioned and observations were made regarding the extent to which assignments in history and geography were supplemented and illustrated by the teacher with assigned readings, and the use made of illustrative materials in teaching arithmetic, geography, and other subjects. Too often the only material the pupil uses in the preparation of the lesson is the textbook. In one geography lesson, for example, the pupils were memorizing the definitions of land forms. They had special difficulty with "plateau," but by persistently going over the words of the text they defined the term. The schoolhouse was on a plateau; the pupils were familiar with it from their own knowledge, and had no need of a textbook; the land forms studied could have been observed at first hand if the pupils had looked out of the classroom windows, yet the teacher did not call the attention of the children to this fact. Even in history the recitations usually dealt entirely with the material of the textbook. The teacher questioned the pupils on each paragraph to ascertain whether they had remembered what they had read. No opportunity was given the pupils to organize the material and to talk in a straightforward way on a topic.

High-school teachers make the same errors in this respect as elementary teachers. They, especially, should be able to realize that no pupil can grasp the subject of history in its fullness without broad reading. Probably only the more advanced classes in the high school can make profitable use of source material, but all can read and get an abundance of detail to put flesh and blood on the skeleton of the text. Almost any text in history can be read through in two days. A pupil who reads an hour a day can read the book through three to five times in 60 school days. One or two careful readings should be enough. What will keep the class busy if supplementary reading matter is not supplied? The pupil who reads four or five or more pages on a topic in history or geography has a clearer idea of it and remembers more than the one who has memorized the same topic boiled down to one or two sentences. The one will have an idea made clear and vivid by details; the other will have only words.

Some teachers were doing much to supplement and illustrate the material of the textbook in history and geography. In one school the supervisor suggests geographical excursions and assigns appropriate readings. The subject of geography is taught through geographical readers, type studies, stereopticon views, and the like.

The primary supervisor in another school at a fourth-grade teachers' meeting requested the teachers to take their pupils to the freight depot to learn what is shipped from and into the city. In one lesson on the cause of day and night and of the change of the seasons, the teacher darkened the classroom and by means of an electric-light bulb and a globe led the children to explain these phenomena. A teacher of algebra illustrated transposition by bringing a balance to the classroom and showing the children the effect of taking weights from the balance. These children gained a clear idea of the effect of removing a quantity from one side of an equation. Examples of work equally good could be cited from the rural schools. It is to be regretted that such instances are not more common, and that a course of study is not in use containing suggestions and explanations of the proper use of textbooks as well as of supplies and illustrative material.

The English subjects.—The English subjects need special attention in Arizona because of the high percentage of illiteracy among children from 10 to 20 years old and the large number of children of Mexican birth or parentage, as noted elsewhere in this report. The only arrangement observed to overcome this condition is the formation of additional classes in primary reading in which the first school year is devoted largely to teaching the children to speak and read English. In rural schools especially the observers found poorer work in the teaching of reading and composition than in the other subjects. An example may be given of the conduct of a few reading classes, not typical but common in the schools visited: A large class, not selected nor seated apart from the children who are studying; all the class have open books; teacher calls one of the pupils, who reads a paragraph or more until the teacher stops him; another is called and does the same, and so on through the lesson. A book is given to the visitor, but he endeavors to get the meaning without using it; this is not possible, for the reading is mere mechanical word pronunciation. There is no incentive for expressive reading; the lesson inspires no discussion. The teacher follows it with a drill on the pronunciation of some of the difficult words, assigns the same lesson for the next day, and tells the children to read it better next time. She makes no suggestions to help them do this.

Another class in second grade reading in a crowded rural school: The children pronounced the words, pointing to them as they read; no attempt is made to get the meaning of a sentence after the words are pronounced. The lesson was heard at recess; naturally the children's interests were [illegible] the playground. The teacher said that she found it necessary to hold recitations during all recesses. All grades were represented in this school of about 40 children.

Only a few oral composition lessons were heard. There is no widespread effort to stress this phase of English teaching. Silent reading receives little attention in the majority of schools visited. In general the words for spelling lessons are selected from the text with little regard to their relation to the child's writing vocabulary. One lesson included words selected from the dictionary in the order of their alphabetical arrangement. In contrast to this kind of teaching, some very good English lessons were observed. In some schools both Mexican and American children were found using several reading books with intelligence and expression. In other schools primary reading and language lessons heard on the days following the appearance of a circus parade were based on the children's descriptions of the parade. Wagons and animals were cut from paper and a paper circus and paper parade were arranged on the blackboard shelf. Spelling lessons were observed in which the words were selected from the children's compositions of the preceding day.

Generally speaking, far more supplementary material should be used in all grades and its use should not be confined to oral reading. The method of using supplementary readers could be greatly improved if stories for silent reading were supplied. It is not necessary to read orally all the books provided for the grade. As soon as a child has learned a few words and has a fair knowledge of phonics, he should be supplied with an abundance of reading material for seat work. This would help solve the problem of keeping children busy. Even if the child does not know every word, he can get the sense of the story and increase his vocabulary by reading in the same manner as adults read. If no opportunity except the few minutes in class is given, the teaching of reading becomes a long-drawn-out process. Any teacher knows that the child who reads stories at home learns to read much more rapidly than the one who does little reading except in the recitation. Too many teachers were found who look upon oral reading as all that children in the first grade should do. Every normal child likes an interesting story and will pore over a book, making out words and meanings if given opportunity. There need not be less oral reading. A greater amount of material for silent reading and more oral composition will help the children who hear little or no English at home. In this connection it may be suggested that more stress be placed upon English conversation on the playground. In some schools the observers found the children spoke no English except in the schoolroom.

Teachers of the modern foreign languages also should supply their students with more reading material. In some schools only a few reading texts were used in first-year Spanish. Teachers of foreign languages should learn from the experience of first-grade teachers in teaching children to read. If children in the primary grade can

read a score of primers a year, why can not a freshman in the high school read as many Spanish, German, or French texts? It is not necessary that these be read in class, translated, and grammatically dissected. They should be assigned for silent reading. If more teachers would adopt this plan, pupils would learn to read a foreign language in much less time than is needed when only two or three reading texts are used.

Organization.—The importance of the ability to organize has been previously mentioned. No opportunity to teach organization should be overlooked. It can be emphasized in teaching all the subjects. Language and reviews offer particularly good opportunities. A criticism offered by some high-school teachers of English is that the children coming to them from the eighth grade had no training in arranging material for composition. If the criticism is a just one it is evident that the children had not been required to organize the material of the geography, history, reading, and other subjects. It has been demonstrated that children 6 years of age can organize the material of fairy tales and other stories within their comprehension.

Few teachers were found who had definite plans or gave sufficient attention to grouping the facts or organizing the ideas contained in the lessons. Questions were scattering, first on one point and then on another; they did not lead anywhere. The teaching should be properly planned and the children should be taught to organize and tell in a straightforward way what they have observed or read.

In the classrooms visited in which teachers were taking up the lessons for the day, it was noted that they usually began without reference to the preceding lesson or lessons. In some subjects little or nothing need be said of what precedes, but in those subjects in which there is continuity a review of subject matter is necessary. If there is continual reference to related topics preceding, little review will be needed either when the general topic has been completed, or at the close of the school term, and the children will have an organized view of the subject or topic as a whole.

Reviews should not be mere repetitions. They are of most value when the whole completed topic is organized from a new point of view. Reviews at stated set periods as conducted in many Arizona schools are of little value—often mere waste of time. Their occurrence should depend upon completion of subject matter rather than on time periods. Brief daily reviews sufficient to show the connection with the preceding lesson and a general review on the completion of a topic is all that is necessary. A written test for the purpose of ascertaining whether teachers are training children to organize and use the facts learned should be given occasionally. They should not be for the purpose of determining whether children should be promoted.

Drill lessons.—Many of the recitation periods in the primary and intermediate grades were devoted to drill. This is a very necessary type of exercise and requires much skill, if successfully given. Unless the drill is carefully planned and conducted, the recitation degenerates into a stultifying process which kills initiative and is responsible for the lack of interest in school work. Some such drill work was observed in every city and every county visited. Drill lessons must not be too long, or the pupil becomes fatigued. If the subject is arithmetic he begins to make mistakes, and the more he is drilled the more mistakes he makes. If standard tests were used as recommended in another part of this report, the results of drills could more easily be determined. Many teachers in the primary grades are in need of expert help in giving phonic drills. A new system of phonics has recently been introduced which many of the teachers do not understand, and consequently they are not securing adequate results.

Summary.—A serious criticism of the instruction given in the schools is the wide variation in skill among the teachers. This is, of course, most noticeable in districts outside of cities, since the teachers are selected by so many different persons. In general the teaching in cities was more uniform in quality and on a higher plane than in the rural schools, because of greater uniformity in the qualifications of teachers engaged and a more careful supervision. One is constantly impressed with the feeling that the teachers are not working at their maximum efficiency. Their attitude and general ability suggest that far better service should be given and can be expected with more systematic organization, freer consultations, and closer supervision. This is most marked outside of cities with special superintendents. Judging the State as a whole, the teaching corps is above the average, but the quality of instruction is not so high as the teachers' qualifications would lead one to expect. Most of the conditions which cause the criticisms here offered can be overcome if the teachers are more carefully and systematically supervised and if sound methods are provided for continuing their training while in service. Elsewhere in this report the committee is making recommendations concerning the selection and supervision of county teachers and the establishment of extension stations under the direction of the normal schools. If these recommendations are adopted, it is believed that the instruction will be greatly improved. The committee wishes to express the conviction that more emphasis should be placed on teaching the English subjects and that better methods should be adopted, particularly for teaching reading and oral composition. The whole matter of educating the children of parents speaking a foreign language is of such importance in the State that it needs special attention on the part of supervisors, teachers, and normal-school instructors.

(c) THE COURSE OF STUDY.

The course of study now in use was prepared by the State board of education and was adopted in 1912. According to the introduction in the printed course, the board was assisted by various committees and subcommittees from the principals and teachers of the schools of the larger cities and towns of Arizona and from the faculties of the two normal schools. More than 50 persons were engaged in the work. The whole course of study is drawn up to fit the needs of graded schools having nine-month terms, and the introduction suggests that teachers in ungraded schools or those enrolling a large percentage of Mexican children should modify the outlines "in proportion and emphasis" to fit the needs of their schools.

An examination of the course indicates that the committees formulating it worked independently so far as each subject is concerned. Probably for this reason there is no evidence of correlation among subjects. The content in the different subjects is generally outlined by topics, without setting forth their relationship to each other or to the life of the people. There is also an apparent lack of uniformity of ideas on the part of the compilers of the different outlines in regard to the purpose and aim of a State course of study and the fundamental principles which should be followed in its preparation.

The members of the committee who visited schools found relatively few teachers following the course of study. In the cities with special superintendents and supervisors, more detailed and better adapted outlines are and should be prepared for the use of the teachers. In 1-teacher schools a course, which includes 13 subjects, each arranged for 8 grades, with no definite directions for alternation and correlation, is of very little value. The suggested schedule, showing the maximum number of recitations per week necessary in following out the course, requires more than 70 recitations a day. It could not be adopted in schools with fewer than three teachers. There are in Arizona 707 teachers in rural and village districts without special superintendents. Of these, 321 are in 1-teacher schools, 94 in 2-teacher schools, and 62 in 3-teacher schools. All of the 477 teachers, or 67 per cent of the whole number outside of cities with special superintendents, have too many grades to make it possible to use the suggested schedule or the course as at present outlined.

While the introductory statement suggests that schools in which the term is shorter than nine months and those in which there is a large percentage of Mexicans should alter the course, it is doubtful if the teachers in general are able to do it intelligently. Of the schools reporting to the Bureau of Education on the question concerning length of term, more than half reported eight months or

less of school during the year. The time adaptation must, therefore, be made by more than half the teachers. While the bureau has no exact data as to the number of schools in which there is a large percentage of Mexican children, it is conservatively estimated by experienced educators within the State that about half of the schools of Arizona have the problem of teaching the English language to Mexicans in addition to the usual problems in the regular course of the ordinary school subjects. In one county as high as 75 per cent of the schools include a large number of Mexican children. It is not difficult to understand, then, why few teachers follow the State course of study. It is adapted to the needs of only a very small minority of Arizona schools.

A State course of study should be a related and unified whole. Its obvious purpose is to present an organized body of knowledge rather than to set forth isolated facts. It should aim primarily to promote good teaching in all possible ways, among which may be mentioned the following: By giving as explicit directions as possible regarding the aim and purposes of teaching the several subjects; by setting forth clearly methods of teaching the subject matter presented; by organizing the subject matter around topics selected by educational experts as of greatest importance, in order that teachers may not waste time on nonessentials, and in order that time may be saved by correlation whenever possible (this is particularly necessary in rural schools, where the teacher's time must be divided among a number of grades and subjects); by including suggestive lessons illustrating the fundamental principles in the methods suggested; by making the outlines as detailed as possible without losing the careful organization which avoids putting the same stress on essential and nonessential topics; by including suggestive outlines for teaching important subjects; and by including suggestive programs, especially for schools of one and two teachers. The Arizona course of study omits all of these essential things. It entirely overlooks the organization of one-teacher schools and the fact that the making of a daily program which does not dissipate the teacher's time and provides for the correlation and alternation necessary for good teaching in one-room schools is a matter for educational experts and is beyond the ability of the majority of teachers in rural schools under existing conditions.

The Arizona course does not emphasize and follow consistently any fundamental principles which should underlie a course of study. Unless the authors of the various subjects are agreed on these principles it is scarcely possible to expect that the teachers who follow the course can be in harmony with them. One would therefore expect the same general plan to be followed in all the different sub-

jects. For example, if the compilers were agreed that the course of study should set forth the aim and purpose of teaching the different subjects; that methods of presenting topics should be emphasized; that the outlines should be as detailed as possible, but organized in such a manner that the teachers would know definitely and discriminate between the topics which deserved emphasis and those which could be passed over lightly as of relatively small importance, we should expect to find these essentials set forth and emphasized throughout the course in all subjects. The compilers might, of course, agree on the opposite to these principles or others of an entirely different nature, but the same principles and general plan should be followed in all subjects.

Such, however, is not the case. The outlines in spelling and in reading for the primary grades put the emphasis on methods of presentation. The language outlines set forth the purposes of teaching the subject and follow this with detailed methods of presenting the subject matter, including the enumeration of the points or topics to be emphasized most. In history a very different plan is followed; aim, purpose, and method are almost entirely ignored; the outlines are meager, merely enumerating topics without comment or connection and as if they were all equally important. The following quoted from the sixth-grade outlines will illustrate: "The quarrel with England; the stamp act; the tea party; Old South Church." Throughout the outlines in history no relationship among topics is emphasized; there is no mention of cause and effect; the habits of living and thinking practiced by the people of the time are entirely ignored. The teacher is not even instructed in the use of reference books, though many are mentioned. Abundant reference material is listed in geography and history and a reasonable amount in nearly all other subjects. However, visits made to approximately 200 rural teachers did not justify the apparent supposition of the makers of the course of study that the teachers are supplied with these reference books. A very small proportion of the schools visited in rural districts had reference material. The outline in geography lacks emphasis on the method side. With minor readjustments and one or two trifling adaptations it was adopted from the Illinois course.

The outline for arithmetic puts little stress upon method and purpose of teaching; abstract work receives undue attention and a teacher following it would be justified in putting very little stress on reasoning. Many nonessential topics are included, such as partial payments and partnership. The art outlines are far too difficult for ungraded schools. No directions whatever are given in regard to manner of teaching art, a difficult subject for the majority of rural

teachers. No emphasis is placed on appreciation, which should be a real aim in teaching art in the public schools. The music course is an excellent one, but not adapted to rural schools. Nature study, as outlined, is impossible for use in any but graded schools, and the outlines are too meager to be of real assistance in any school.

The reading outlines are good for the lower grades but of little value for the others. The emphasis is placed entirely upon the mechanics of reading. Above the primary grades the only aims of teaching reading given are appreciation of the literary value of the selections, oral reading, and word pronunciation. Rapid and effective silent reading for the sake of the thought receives no attention in the course. Children form desirable and valuable reading habits by reading history, travel, biography, and of the world of social and political relations—the things which adults need to read. While more literature than is given in the Arizona course should be read, it should not crowd out these things of practical value.

The course of study fails not only in adaptation to the organization of the one-teacher school, but also and to an equally great degree in adaptation of the content of the curriculum. Next to mining, farming, including fruit growing, is the principal industry both in the number of people engaged and in the value of the output. Practically all of the one-teacher schools are rural, located in farming and fruit-growing sections. Yet the material given in the course of study is in no way related to these industries, unless the inclusion of nature study, manual training, and cooking and sewing can be so interpreted. The outlines in these subjects as formulated in the course and the projects given are adapted to the city rather than to the country.

Arizona needs a new course of study carefully worked out for one, two, and three teacher schools. The State now supplies books; sufficient uniformity exists; and the making of a suitable course should not be a very difficult task. It will, however, be best procured only when county superintendents with educational qualifications, teaching experience, and assurance of reasonable tenure are engaged to supervise the rural schools. A course of study should be worked out gradually to fit the needs of the schools in which it is used, and time, experience, and capable teachers and supervisors are essential.

(D) ELEMENTARY TEACHERS.

The public schools of Arizona require for the present year (1916-17) nearly 1,600 teachers. The directory published by the State department of education gives the names of 1,546. Of these 199 are high-school teachers, 640 urban teachers in 19 cities employing superintendents, and 707 are rural teachers. There is 1 teacher for every

16 pupils enrolled in high schools, 1 for every 40 in urban schools, and 1 for every 34 in rural schools.

The most important consideration in the efficiency of any school is the teacher. If she is well qualified for her work, trained, experienced, and capable, many handicaps may be overcome. This is especially true in the rural schools, for in them there is little supervision. The rural teacher in large measure makes her own course of study, outlines her own program, usually without restraint and advice, and is the organizer and general administrative officer of the classroom. These responsibilities demand ability of a high order and such academic and professional training as give preparation proportional to the importance of the work pursued. It occasionally happens that teachers are "born"; that is, one of unusual native ability becomes a successful teacher through experience rather than through special preparation. Probably, however, the percentage of "born" teachers is as small as the percentage of "born" doctors, lawyers, or ministers. The best assurance of good teaching consists in adequate preparation.

The training of the teacher is usually considered as made up of two elements—general or academic education and special or professional training. In addition a study of the qualifications of the teaching force should consider such professional activities, graduate study, summer-school attendance, educational reading, etc., as show a progressive attitude and a professional spirit. Experience and age are important factors.

To learn the qualifications of the teachers in Arizona a questionnaire asking for personal data was sent to all teachers in the State. Replies were received from 532 elementary urban teachers, or 80 per cent of the total, and 576 elementary rural, or 81 per cent of the total.

General education.—Data on general education are given in Table 68. Those with one full school year of general education beyond the elementary school, or a full year and a part of a second year, which may represent one or several terms in summer schools, are included under the heading "1 to 2 years." The total in the column headed "4 to 5 years" indicates the number with the equivalent of a full high-school education. It is less than the actual number of high-school graduates, because a considerable number of boys and girls are graduated from standard high schools in three years. Similarly, the number with eight years above elementary schools does not indicate all who hold college diplomas, as many obtain them in seven years.

The most remarkable thing brought out by these figures is that the rural teachers have practically as much general education as

the urban teachers. This of course should be so, although unfortunately it is not so in many States.

The few teachers reported with but one or less than one year of high-school work entered the service several years ago and remain because they have received from study and experience more than the equivalent of what many of the younger teachers have received from school attendance. Not over one-tenth of the urban teachers and one-sixth of the rural teachers have less than the equivalent of a high-school education.

TABLE 68.—*Number of years' education, beyond elementary, of Arizona teachers.*

Counties.	Total reporting on this item.	Number with— None.	Less than 1 year.	1 to 2 years.	2 to 3 years.	3 to 4 years.	4 to 5 years.	5 to 6 years.	6 to 7 years.	7 to 8 years.	8 years.	Over 8 years.	Proportion with— None.	Less than 1 year.	1 to 2 years.	2 to 3 years.	3 to 4 years.	4 to 5 years.	5 to 6 years.	6 to 7 years.	7 to 8 years.	8 years.	Over 8 years.
														P. ct.	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*
Apache:																							
Urban	0																						
Rural	23	0	0	0	2	6	5	3	5	1	1	0	0	0	0	9	27	22	13	22	4	4	0
Cochise:																							
Urban	124	0	0	3	8	1	16	17	50	16	6	7	0	0	2	6	0.8	13	14	40	13	5	6
Rural	79	2	2	3	11	3	5	13	31	4	2	3	3	3	4	13	4	6	16	39	5	3	4
Coconino:																							
Urban	16	0	0	0	0	2	1	7	3	2	1	0	0	0	0	0	13	6	43	19	13	6	0
Rural	13	0	0	0	1	1	2	0	4	4	0	1	0	0	0	8	8	14	31	31	0	8	0
Gila:																							
Urban	50	0	0	2	4	1	8	16	11	4	2	2	0	0	4	8	2	16	32	22	8	4	4
Rural	26	0	0	0	4	0	4	10	7	0	0	1	0	0	0	15	0	15	39	27	0	0	4
Graham:																							
Urban	7	0	0	0	1	0	2	1	3	0	0	0	0	0	0	14	0	29	14	43	0	0	0
Rural	48	0	0	1	2	1	15	7	18	1	3	0	0	0	2	4	2	31	15	38	2	6	0
Greenlee:																							
Urban	48	0	0	0	0	0	5	16	22	4	1	0	0	0	0	0	0	10	33	46	8	3	0
Rural	23	0	0	0	0	1	1	5	12	2	0	2	0	0	0	0	4	4	22	52	9	0	9
Maricopa:																							
Urban	119	0	1	2	5	5	12	33	44	7	4	6	0	0.8	2	4	4	10	28	37	6	3	5
Rural	100	0	0	3	8	2	15	38	21	7	3	3	0	0	3	8	2	15	38	21	7	3	3
Mohave:																							
Urban	4	0	0	0	0	0	1	0	2	1	0	0	0	0	0	0	0	25	50	25	0	0	0
Rural	15	0	0	0	1	1	1	3	7	0	1	1	0	0	0	7	7	7	19	46	7	7	0
Navajo:																							
Urban	12	0	0	0	0	2	2	2	4	2	0	0	0	0	0	0	17	17	17	32	17	0	0
Rural	36	0	3	1	2	4	3	10	9	3	0	1	0	8	3	6	11	8	28	25	8	3	0
Pima:																							
Urban	61	0	0	0	7	4	5	15	21	5	2	2	0	0	0	12	7	8	25	34	8	3	3
Rural	28	0	0	2	1	1	5	1	10	6	1	1	0	0	7	4	4	17	4	35	21	4	4
Pinal:																							
Urban	3	0	0	0	0	1	0	0	0	0	2	0	0	0	0	0	34	0	0	0	0	68	0
Rural	38	0	1	0	0	2	9	2	12	3	4	5	0	3	0	0	5	24	5	32	8	10	13
Santa Cruz:																							
Urban	17	0	0	0	1	4	0	4	5	3	0	0	0	0	0	6	21	0	21	29	17	0	0
Rural	21	0	0	0	3	3	5	2	7	0	0	1	0	0	0	14	14	[illegible]	10	34	0	0	5

Yavapai:																							
Urban	31	0	1	0	1	0	4	5	11	1	1	4	0	3	0	3	0	13	16	45	3	3	13
Rural	46	0	1	0	2	2	6	12	14	5	3	1	0	2	0	4	4	14	26	30	11	7	2
Yuma:																							
Urban	20	0	0	1	1	0	2	0	14	0	2	0	0	0	5	5	0	10	20	70	0	10	0
Rural	24	0	0	0	1	2	2	6	10	2	0	1	0	0	0	3	8	8	25	42	9	0	4
Total:																							
Urban	512	0	2	8	28	20	[illegible]	116	193	45	21	21	0	0.4	1.6	5.5	3.9	11.3	22.6	37.6	8.8	4.1	4.1
Rural	520	2	7	10	38	29	75	112	167	38	18	21	0.4	1.4	2	7.3	5.5	15	22	31.4	7.4	3.4	4.2

Professional training.—Table 69 shows the number of teachers reporting who have had professional education either in normal schools or in colleges in courses extending over at least one full school year or its equivalent. Eleven per cent of the urban teachers and 30 per cent of the rural teachers have had no professional training, or less than the equivalent of one full year. Many of this number have attended summer schools during one or more sessions. Eighty-nine per cent of the urban and 70 per cent of the rural teachers have had one year or more of professional education. While the percentage of rural teachers with professional training is less than that for urban schools, the difference is surprisingly small—very much less than is found in most State systems.

TABLE 69.—*Professional education of Arizona teachers.*

Counties.	Number reporting this item.	With none or less than one year.	With one year or more in—			
			Normal school.	College.	Total normal and college.	Percentage with all training.
						Per cent.
Apache:						
Urban	0					
Rural	26	15	6	5	11	42
Cochise:						
Urban	138	18	63	57	120	87
Rural	85	32	40	13	53	62
Coconino:						
Urban	16	3	7	6	13	81
Rural	14	3	8	3	11	79
Gila:						
Urban	49	4	31	14	45	92
Rural	29	10	15	4	19	66
Graham:						
Urban	8	1	6	1	7	87
Rural	32	10	23	9	32	100
Greenlee:						
Urban	51	7	43	1	44	86
Rural	27	6	15	6	21	77
Maricopa:						
Urban	124	12	89	23	112	90
Rural	109	26	66	17	83	76
Mohave:						
Urban	4	0	4	0	4	100
Rural	14	3	11	2	13	93
Navajo:						
Urban	12	2	8	2	10	83
Rural	36	13	17	6	23	64
Pima:						
Urban	58	5	47	6	53	91
Rural	31	10	14	7	21	68
Pinal:						
Urban	3	0	0	3	3	100
Rural	38	6	17	15	32	84
Santa Cruz:						
Urban	17	0	15	2	17	100
Rural	22	6	14	2	16	73
Yavapai:						
Urban	32	5	21	6	27	84
Rural	47	11	30	6	36	77
Yuma:						
Urban	20	2	13	5	18	90
Rural	25	4	20	1	21	84
Total:						
Urban	632	59	377	96	473	83
Rural	557	165	296	96	392	70

Teaching experience.—The experience of Arizona teachers is given in Table 70 for 524 urban and 555 rural teachers. Very few of those reporting on the general questionnaire failed to report on this item. The table shows the number who are teaching their first year, their second year, their third year, etc. Six per cent of the urban and 15 per cent of the rural teachers are teaching their first year; this is 10¼ per cent of the total elementary teachers. The figure is low, the usual number being about 20 per cent of the total. The recent Wyoming survey shows practically 20 per cent of the teachers were teaching their first year; the North Dakota survey shows 32 per cent of the rural, 12 per cent of the urban, and 26 per cent of the total were teaching their first year.

In total experience the urban and rural teachers of Arizona are about equal, with an average of between six and seven years. This is a higher average than in most States. Colorado rural teachers, according to the survey made in the fall of 1916, showed an average experience between three and four years. The North Dakota urban teachers showed an average of 5.6 years of teaching experience, the rural teachers two years. Nearly one-half of the rural teachers of North Dakota at the time of the survey (spring, 1916) were teaching their first or second year, while in Arizona only 27 per cent were teaching their first or second year.

TABLE 70.—*Teaching experience of Arizona teachers.*

Counties.	Number now teaching—														
	First year.	Second year.	Third year.	Fourth year.	Fifth year.	Sixth year.	Seventh year.	Eighth year.	Ninth year.	Tenth year.	Eleventh to fifteenth.	Sixteenth to twentieth.	Twenty-first to twenty-fifth.	Twenty-sixth or over.	Total number reporting this item.
Apache:															
Urban															0
Rural	2	3	3	3	2	2	1	1	1	3	2	1	1	1	26
Cochise:															
Urban	4	11	15	17	17	13	10	9	11	11	18	2	2	0	140
Rural	11	9	8	5	6	4	6	5	5	5	8	7	4	2	85
Coconino:															
Urban	0	1	3	2	2	1	2	0	3	0	2	0	0	0	16
Rural	0	1	3	3	0	0	3	1	0	0	1	2	0	0	14
Gila:															
Urban	0	5	4	1	8	3	5	11	3	2	4	0	0	0	46
Rural	2	3	0	3	4	3	2	1	0	2	2	3	2	2	29
Graham:															
Urban	0	0	1	0	2	0	0	1	2	1	2	0	0	0	9
Rural	8	9	4	8	0	1	5	0	2	1	8	2	3	2	53
Greenlee:															
Urban	5	6	6	4	6	11	6	2	0	1	2	1	0	0	50
Rural	4	5	1	3	4	1	0	3	1	1	3	0	0	1	27
Maricopa:															
Urban	11	12	15	12	9	6	9	9	8	9	9	6	6	0	121
Rural	20	20	12	8	1	4	8	5	5	5	12	5	1	2	108
Mohave:															
Urban	0	2	0	0	0	1	0	0	0	1	0	0	0	0	4
Rural	3	0	1	2	0	0	0	1	1	2	3	2	0	0	15
Navajo:															
Urban	2	0	1	1	1	2	2	0	0	0	0	0	0	0	9
Rural	8	1	4	5	4	2	2	2	0	0	2	4	2	0	36
Pima:															
Urban	2	2	9	7	8	2	5	5	5	2	5	4	3	0	59
Rural	2	4	1	3	3	3	4	0	1	2	4	1	0	3	31
Pinal:															
Urban	0	1	1	1	0	2	0	1	0	0	0	0	0	0	6
Rural	8	2	5	2	5	2	2	1	0	2	5	1	0	2	37
Santa Cruz:															
Urban	5	2	3	0	2	0	1	2	1	1	0	0	0	0	17
Rural	4	2	2	3	1	0	2	0	1	2	0	2	0	3	22
Yavapai:															
Urban	1	6	3	2	2	0	3	4	0	0	4	1	1	2	29
Rural	7	5	7	5	3	6	3	2	1	0	5	2	0	1	47
Yuma:															
Urban	2	5	5	0	4	0	0	1	0	1	0	0	0	0	18
Rural	3	5	4	1	3	3	2	0	0	0	2	1	0	0	25
Total:															
Urban	32	53	66	47	61	41	43	45	33	29	46	14	12	2	524
Rural	82	69	55	54	36	31	40	22	18	25	57	33	14	19	555
Per cents:															
Urban	6	10	13	9	12	8	8	8	6	5	9	3	2	4	....
Rural	15	12	10	10	6	6	7	4	3	5	10	6	3	3	....

Tenure.—Table 71 shows that 33 per cent of the urban and 61 per cent of the rural teachers are teaching in their present position the first year. This number is high, considering that but 6 and 15 per cent, respectively, of them are inexperienced. In North Dakota 32 and 77 per cent, respectively, were teaching the first year in the present position, but 12 and 32 per cent, respectively, of all teachers were teaching their first year in any position. It is hard to understand why the tenure is so short, in consideration of the salaries that are paid. Some way should be devised by which teachers may be retained longer in the same positions, for constant changing of teachers is detrimental to the progress of the pupils.

TABLE 71.—*Number of years in present position.*

Counties.	First year.	Second year.	Third year.	Fourth year.	Fifth (or more than fifth) year.	Number reporting this item.
Apache:						
Urban	0	0	0	0	0	0
Rural	15	5	5	0	1	26
Cochise:						
Urban	39	34	28	11	25	137
Rural	59	14	7	4	1	85
Coconino:						
Urban	7	4	3	1	0	15
Rural	4	5	5	0	0	14
Gila:						
Urban	16	13	8	4	7	48
Rural	15	6	4	1	3	29
Graham:						
Urban	3	5	0	0	1	9
Rural	38	7	2	1	5	53
Greenlee:						
Urban	26	15	5	2	3	51
Rural	17	6	2	2	0	27
Maricopa:						
Urban	33	29	24	17	23	126
Rural	54	27	17	5	5	108
Mohave:						
Urban	1	3	0	0	0	4
Rural	12	3	0	1	0	16
Navajo:						
Urban	3	1	1	0	4	12
Rural	22	12	1		1	36
Pima:						
Urban	16	20	8	4	12	60
Rural	18	10	2	0	1	31
Pinal:						
Urban	3	0	0	0	0	3
Rural	21	11	3	2	1	38
Santa Cruz:						
Urban	10	4	1	1	1	17
Rural	13	4	1	1	3	22
Yavapai:						
Urban	12	6	5	2	7	33
Rural	36	4	3	3	1	47
Yuma:						
Urban	8	7	3	2	0	20
Rural	17	2	3	1	2	25
Total:						
Urban	177	141	86	47	83	[1] 534
Rural	341	116	55	21	24	[1] 557
Per cents:						
Urban	33	26	16	9	15	.....
Rural	61	21	10	4	4	.....

[1] 80 per cent of the whole number.

Certificates.—Further indication of the education of the rural teachers is given in Table 72, showing the certificates held by 576 of them. Of this number, 62 per cent hold first-grade certificates received on normal diploma, college diploma, or in exchange for first-grade certificates awarded by other States; 14 per cent hold first-grade certificates on examinations conducted by the Arizona State board of examiners. The larger part of the 62 per cent received their certificates on normal diplomas from Arizona normal schools or from those in other States. An examination of the accredited schools and the records of the State board of examiners show, however, that in many cases institutions are listed which are not of standard grade

and whose work is not equivalent to that given in the normal schools of Arizona. Conversations with trustees of schools visited in various parts of the State, as well as the data in the tables, show that the great majority of them appreciate the value of trained teachers and that they want normal graduates in their schools.

TABLE 72.—*Certificates held by 576 rural teachers.*

Counties.	Life certificate.	First grade on normal diploma or credentials.	First grade on examination.	Second grade.	Number reporting this item.
Apache	1	10	4	11	26
Cochise	1	38	19	27	85
Coconino	1	9	2	2	14
Gila	1	21	3	4	29
Graham	0	35	3	14	52
Greenlee	1	18	7	1	27
Maricopa	0	79	16	12	107
Mohave	0	15	0	1	16
Navajo	0	20	6	10	36
Pima	0	21	5	5	31
Pinal	1	26	3	8	38
Santa Cruz	2	13	5	2	22
Yavapai	1	33	4	9	47
Yuma	0	21	2	2	25
Total	9	359	79	106	576

TABLE 73.—*Certificates from the Arizona State board of examiners, 1914–1916.*

	Year 1914–15.	Year 1915–16.
Number of applicants for certificates on examination	437	424
Number of first grade certificates issued on examination	42	50
Number of second grade certificates issued on examination	152	146
Number of first grade certificates issued on credentials	515	571
Number of life diplomas granted	2	.....
Certificates issued for—		
Manual training	10	12
Commercial instruction	16	17
Agricultural instruction	3	6
Kindergarten	8	5
Domestic science	20	28
Drawing	6	7
Music	9	13
Primary	10	.....
Oratory	2	.....
Spanish	.....	1
Bookkeeping	.....	2
Stenography	.....	1

Ages.—The number of teachers who reported their ages was considerably less than the number reporting other items; however, 481 urban and 532 rural teachers did report. The ages are given in Table 76. As would be expected from the number of years' experience, there are very few under 20 years of age. The most frequent age of urban teachers is 25; the most frequent age of rural teachers is 22. It is interesting to note that there is a larger percentage of rural teachers than of urban teachers over 40 years of age.

TABLE 74.—*Proportion of teachers of various ages.*

Ages.	Urban.	Rural.
	Per cent.	*Per cent.*
Under 21	5.6	8.0
21 to 25	42.0	42.1
26 to 30	37.6	15.2
Over 30	14.8	34.7

TABLE 75.—*Average age of the rural teachers by counties.*

Counties.	Average age.	Counties.	Average age.
Apache	30	Mohave	29
Cochise	30	Navajo	27
Coconino	28	Pima	27
Gila	30	Pinal	30
Graham	28	Santa Cruz	30
Greenlee	24	Yavapai	26
Maricopa	26	Yuma	26

TABLE 76.—*Ages of Arizona teachers—Number of teachers of specified ages.*

Counties.	18	19	20	21	22	23	24	25	26	27	28	29	30	31 and 32	33 and 34	35 and 36	37 and 38	39 and 40	41 to 45	46 to 50	51 to 55	56 to 60	Over 60	Total reporting on this item.
Apache:																								
Urban																								0
Rural	0	0	1	1	1	2	0	2	3	0	0	2	0	3	1	1	2	1	2	1	0	1	0	24
Cochise:																								
Urban	0	2	7	3	7	12	17	10	13	6	8	7	5	6	8	2	4	3	2	0	0	0	0	122
Rural	0	0	6	10	7	4	4	2	4	1	1	4	0	3	5	7	6	2	4	6	3	2	0	81
Coconino:																								
Urban	0	0	0	0	3	0	4	0	3	0	1	1	1	1	0	0	1	0	1	0	0	0	0	16
Rural	0	0	0	2	0	2	2	1	2	0	2	0	0	2	0	0	0	0	1	0	0	0	0	14
Gila:																								
Urban	0	0	0	3	5	3	6	7	2	4	5	3	2	5	2	3	0	1	0	0	0	0	0	51
Rural	0	0	1	2	2	4	1	4	1	0	0	0	1	3	1	2	2	1	0	1	1	1	0	28
Graham:																								
Urban	0	0	0	0	1	2	0	0	0	2	1	0	0	1	0	0	0	2	0	0	0	0	0	9
Rural	2	0	6	4	4	4	4	3	1	3	0	2	1	3	0	2	1	2	6	0	2	1	1	52
Greenlee:																								
Urban	0	1	2	6	5	6	3	3	5	8	1	0	0	5	0	1	3	0	0	1	0	0	0	50
Rural	0	1	2	4	2	3	1	3	1	1	1	3	0	0	0	0	1	1	0	0	0	1	0	25
Maricopa:																								
Urban	1	2	5	6	9	7	5	8	5	5	7	5	5	3	5	5	1	1	3	2	0	0	0	90
Rural	0	5	6	5	16	7	8	8	4	3	5	1	2	4	6	3	2	3	8	4	2	0	0	102
Mohave:																								
Urban	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Rural	0	0	0	2	1	0	2	1	0	0	0	0	1	0	0	1	1	1	2	0	1	1	0	14
Navajo:																								
Urban	0	0	1	1	1	0	2	0	1	2	1	0	0	0	1	0	1	0	0	1	0	0	0	12
Rural	1	1	1	3	5	3	2	3	1	0	3	2	1	0	1	3	1	2	1	1	0	0	0	35
Pima:																								
Urban	1	0	0	5	3	4	6	10	4	7	2	2	0	6	2	5	0	1	2	1	1	0	0	62
Rural	0	0	2	3	3	1	3	1	0	1	2	0	1	1	1	1	0	1	1	2	1	2	0	27
Pinal:																								
Urban	0	0	0	0	0	0	0	0	0	0	1	0	0	2	0	0	0	0	0	0	0	0	0	3
Rural	1	0	1	2	6	4	4	1	0	1	0	1	0	3	3	1	3	1	2	1	1	1	0	37
Santa Cruz:																								
Urban	0	0	3	0	0	3	2	1	1	1	1	1	1	0	0	0	0	0	0	6	0	0	0	14
Rural	0	0	0	3	5	1	1	1	0	1	0	0	0	1	2	0	1	0	2	1	0	1	1	21

Yavapai:																								
Urban	0	0	1	0	2	3	1	6	3	3	2	4	0	0	1	1	2	0	1	0	0	0	0	30
Rural	0	1	3	4	9	6	3	1	3	3	1	2	2	1	1	3	1	0	2	1	0	0	0	47
Yuma:																								
Urban	0	0	1	0	4	4	2	1	4	0	1	0	2	1	0	0	0	0	0	0	0	0	0	20
Rural	0	0	2	2	4	1	3	1	0	2	2	1	1	0	0	4	0	0	1	0	1	0	0	25
Total:																								
Urban	2	5	20	24	40	44	48	46	42	39	31	23	16	30	19	17	12	8	9	5	1	0	0	481
Rural	4	8	31	47	65	42	38	32	20	16	17	18	10	24	21	28	21	15	32	18	12	11	2	532

Salaries.—Table 77 presents the salaries of all teachers in Arizona as given in the directory of the State department of education published in November, 1916. The salaries of superintendents are omitted, although principals and special teachers are included; 1,546 salaries in all are included; those for high schools, city schools, and rural schools are given separately. It will be noted that all are entered under such amounts as $75, $80, $85, etc. In a very few cases salaries were paid between these amounts, but all are tabulated under the nearest multiple of 5.

In studying the figures in this table it should be remembered that there are practically no school terms less than 8 months in length. The great majority of teachers are paid for 9 months, although some, particularly in city districts, are paid for 10 months. There is but one teacher receiving less than $70 per month, and but 15 receiving less than $75 a month. The most frequent salary paid urban teachers is $90 per month, and the most frequent salary paid rural teachers is $85 per month. Twenty-nine teachers receive $160 or over. Most of them are, as might be expected, high-school principals and city-school principals. Six in Cochise County include one principal at $160, two at $180, one at $190, one manual-training teacher at $167, and one at $211. In Gila County one principal receives $168. In Maricopa, of the 13 receiving $160 and over, 2 are supervisors of industrial work, 4 are teachers, and 7 are principals. The two supervisors receive $178 and $189, respectively; the four teachers, all in high-school work, receive $160, $167, $178, and $185, respectively; the seven principals receive $167, $167, $170, $180, $180, $222, and $250, respectively. In Navajo County, one principal receives $161 and one instructor in manual training $166. In Pima one principal receives $205 and three teachers receive $167. In Yavapai one principal receives $165 and in Yuma one principal receives $222.

TABLE 77.—*Salaries per month of all full-time Arizona teachers, 1916–1917.*[1]

Counties.	$60	$70	$75	$80	$85	$90	$95	$100	$105	$110	$115	$120	$125	$130	$135	$140	$145	$150	$155	$160	Over $160.	Total.
Apache:																						
High school	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Urban	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Rural	0	0	11	4	5	7	1	4	0	2	1	0	0	0	0	0	0	0	0	0	0	35
Cochise:																						
High school	0	1	0	0	1	1	0	3	5	1	4	4	3	7	0	0	0	1	0	1	5	43
Urban	0	1	8	12	14	25	21	38	9	2	3	3	3	7	0	2	0	2	0	0	0	143
Rural	1	0	6	22	31	47	5	9	1	1	0	0	4	1	0	0	0	2	0	0	0	130
Coconino:																						
High school	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Urban	0	0	0	3	6	7	0	4	0	3	0	1	1	0	1	0	0	0	0	0	0	25
Rural	0	0	1	2	1	3	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	9
Gila:																						
High school	0	0	0	0	0	1	0	2	0	4	2	2	3	1	0	0	0	0	0	0	1	24
Urban	0	0	0	0	0	0	13	9	2	8	0	2	1	0	0	1	0	0	0	0	0	49
Rural	0	0	0	3	12	12	5	11	2	1	0	0	2	0	0	0	0	0	0	0	0	47
Graham:																						
High school	0	0	0	0	2	2	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	5
Urban	0	0	0	2	6	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11
Rural	0	1	13	25	11	6	0	5	2	0	0	0	0	0	0	0	0	0	0	0	0	64
Greenlee:																						
High school	0	0	1	0	0	0	0	3	0	2	0	0	0	0	0	0	0	0	0	1	0	19
Urban	0	0	0	0	3	21	6	2	1	2	1	2	5	0	2	2	1	2	0	0	0	49
Rural	0	0	0	2	7	6	1	7	0	2	0	1	3	0	0	0	0	0	0	0	0	28
Maricopa:																						
High school	0	0	0	2	1	6	3	0	2	12	1	9	5	1	0	0	3	0	2	1	7	55
Urban	0	5	2	12	17	16	33	39	2	18	2	7	2	2	4	2	1	0	1	0	4	167
Rural	0	5	8	35	18	23	6	10	4	3	1	1	4	0	1	2	1	0	0	0	1	123
Mohave:																						
High school	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Urban	0	0	0	1	2	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	5
Rural	0	0	0	2	2	3	1	3	0	1	0	0	0	0	0	0	0	0	0	0	0	19
Navajo:																						
High school	0	0	0	0	0	0	0	0	0	2	0	0	1	0	0	1	0	0	1	0	1	6
Urban	0	0	0	3	0	1	0	3	0	2	0	0	0	0	0	0	0	0	0	0	1	19
Rural	0	0	7	7	8	7	1	4	1	3	0	2	0	0	0	0	0	0	0	0	1	40
Pima:																						
High school	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	0	1	0	1	0	4	11
Urban	0	0	2	2	20	10	17	0	2	0	0	1	0	0	2	0	0	0	0	0	0	11
Rural	0	1	3	4	23	6	3	2	0	3	1	0	0	0	0	0	1	0	0	0	0	47

[1] Taken from the directory published by the State department of education. Principals included; superintendents omitted.

TABLE 77.—*Salaries per month of all full-time Arizona teachers, 1916–1917*—Continued.

Counties.	$60	$70	$75	$80	$85	$90	$95	$100	$105	$110	$115	$120	$125	$130	$135	$140	$145	$150	$155	$160	Over $160.	Total.
Pinal:																						
High school	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1	0	0	1	0	0	0	4
Urban	0	0	0	0	9	0	0	0	0	0	0	2	1	0	1	0	0	0	0	0	0	13
Rural	0	0	2	4	17	24	2	0	1	0	2	1	3	0	1	0	0	0	0	0	0	57
Santa Cruz:																						
High school	0	0	0	0	0	0	0	2	1	1	1	1	0	0	0	1	0	0	0	0	0	7
Urban	0	0	3	14	1	4	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	24
Rural	0	0	4	10	9	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	26
Yavapai:																						
High school	0	0	0	0	0	0	0	4	0	2	0	3	3	0	1	1	1	1	0	0	1	17
Urban	0	0	0	4	14	11	3	7	3	1	0	0	1	0	0	1	0	0	0	0	0	45
Rural	0	0	0	11	14	11	2	9	2	3	0	0	1	1	0	0	0	0	0	0	0	54
Yuma:																						
High school	0	0	0	0	0	0	0	1	1	0	1	3	0	0	0	0	0	1	0	0	1	8
Urban	0	0	0	8	4	5	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	19
Rural	0	0	1	10	9	2	2	3	0	0	0	1	1	0	0	0	0	0	0	0	0	30
Total:																						
High school	0	0	1	2	4	10	3	21	9	25	9	23	28	10	8	5	6	6	6	3	20	199
Urban	0	6	15	61	102	125	100	104	19	43	8	18	12	3	7	4	3	4	1	0	5	640
Rural	1	8	56	148	169	159	29	69	11	18	6	6	16	2	3	3	1	2	0	0	1	707
Per cent—																						
High school	0	0	0.5	1	2	5	1.5	10.5	4.5	12.5	4.5	11.5	14	5	4	2.5	3	3	3	1.5	10	.....
Urban	0	0.9	2.3	9.5	16	19.5	15.6	16.2	3	6.7	1.2	2.8	1.9	1.4	1.5	0.6	0.4	0.6	0.1	0	0.8	.....
Rural	0.2	1.1	7.9	20.9	23.8	22.5	4.0	9.7	1.5	2.5	0.9	0.9	2.2	0.3	0.5	0.5	0.2	0.3	0	0	0.2	.....

Boarding places.—In connection with salaries, the price of board should be considered. Urban teachers pay in Arizona from $30 to $40 per month. Table 78 gives figures paid for board by 285 rural teachers; the average is $26. A very few reported that they pay less than $20.

The table shows also that 221 of the rural teachers reporting are living with their own families or are boarding themselves. This includes married men and women who have their own families with them, younger men and women living with their parents, and also a considerable number, probably between 20 and 25 per cent of the total, who are living in cottages or rooms either rented by them or furnished free by the school districts, and are boarding themselves.

While the table would indicate that the boarding places on the whole were satisfactory, there is considerable doubt whether or not this is really true. A large number did not report on this item. It is probable that the majority of them, if required to express themselves, would have reported their boarding places unsatisfactory. Many letters were received from rural teachers in regard to this matter. Experienced teachers who have taught in several parts of the State reported that they had been unable to get satisfactory boarding places anywhere, and also that teachers of their acquaintance reported universal dissatisfaction with the places in which they were required to live.

TABLE 78.—*Boarding conditions of Arizona teachers.*

Counties.	Living with own family or boarding themselves.	Boarding in district.	Boarding out of district.	Boarding place satisfactory.			Paying for board, per month—				
				Yes.	No.	Not reporting.	$20 or less.	$25.	$30.	$35.	$40 or more.
Apache	12	12	2	11	2	13	3	5			
Cochise	37	50	2	39	7	39	26	16	10	4	
Coconino	4	10		12	0	2	4		4		
Gila	10	16	2	16	6	7	4	5	5	2	
Graham	20	30	0	22	9	21	9	9	8	1	2
Greenlee	11	16	3	13	5	9	2	3	6	7	
Maricopa	53	39	16	50	6	53	6	16	16	3	
Mohave	5	10	1	5	2	9	2		4	1	2
Navajo	10	28	0	16	5	15	12	6			1
Pima	6	21	1	10	0	21	6	4	2	1	
Pinal	16	20	2	18	5	15	5	5	5		[1]
Santa Cruz	10	12	0	11	5	15	2	5	2	1	
Yavapai	16	22	7	25	6	16	4	11	9	2	3
Yuma	11	13	1	14	1	10	3	2	6	1	1
Total	221	299	37	262	59	245	88	87	77	23	10

[1] This one pays $60.

Chapter III.

SUMMARY OF RECOMMENDATIONS RELATING TO PUBLIC ELEMENTARY AND SECONDARY SCHOOLS.

1. *Centralization of the State school system, placing the responsibility of the administration of the public-school system definitely upon the State board of education and the State department of education working in cooperation with the county boards of education and school-district trustees.*

The State should exercise a sufficient degree of administrative control to assure that schools are maintained wherever needed and that all schools are efficient. This can be done best through the following organization:

1. For the State, a State board of education and a State department of education, the State superintendent of public instruction being the executive officer of the State board and the actual head of the department.

2. For each county, a county board of education to assume general control over the schools in the county, with the county superintendent as its executive officer.

3. For each local district, urban and rural, a local board of trustees.

The State and county superintendents should be professional officers, selected and appointed by the State and county boards, respectively, as city superintendents are now selected and appointed by city boards.

2. *Reorganization of the State board of education conferring upon it enlarged powers.*

The State board of education should be composed of seven members, men and women of affairs, scholarship, and business ability, but not necessarily engaged in education. They should be appointed from different parts of the State by the governor with the approval of the senate, or elected by the people. The term of office should be eight years, not more than two terms expiring each biennium. The members should serve without pay, except perhaps a reasonable per diem, and should receive their actual traveling and other expenses.

3. *Provision for a nonpolitical State superintendent who shall be the head of an enlarged and more effective State department of education.*

The State superintendent of public instruction should be selected and appointed by the State board of education in a manner similar to the selection and appointment of city superintendents by city boards of education and college presidents by college boards of trustees. He should be selected for his particular fitness for the position, regardless of whether or not a resident of the State at the time of appointment. The appointment should be for a specified term sufficiently long to insure the most efficient service, the State board having power to remove him from office for inefficiency or malfeasance. The salary should be fixed by the State board and should be sufficient to secure a suitable person with adequate professional education and experience in teaching, supervision, and school administration. The department should have, in addition to the State superintendent, at least two general assistants as field agents to inspect schools under control of the State board and others receiving State aid for special purposes and to act as advisors and assistants to the State superintendent. Also a State school architect, an expert statistician, a chief of a division of certification, one person in charge of textbook distribution, and the necessary clerical assistants.

4. *Provision for county control of county school funds through county boards of education and nonpolitical county superintendents.*

There should be in each county a county board of education charged with the general management of the schools of the county. That board should fix district boundaries and the location of schoolhouses; and employ or approve the employment of all teachers. It should be composed of five persons not engaged in school work, elected by popular vote from various parts of the county. The term of office should be at least six years, not more than one-third of the terms should expire each biennium, and not more than one member of the board should be a resident of any city district. The board should appoint the county superintendent, who should be its executive officer and the supervisor of all schools except those in city districts employing superintendents. The county board should determine from the estimates made by the county superintendents the amount of money to be levied by the county commissioners for school purposes.

It should apportion an equitable portion of the State and county funds to independent city districts, and all expenditures for schools in the county except those in such districts should have its approval.

The county board should purchase through the county superintendent all supplies of an instructional nature used in the county except in the city districts with superintendents. County superintendents should be appointed for their particular fitness for the office, and only persons with adequate professional training and experience should be eligible. They should be appointed for a specific term, the board having power to remove him from office for inefficiency or malfeasance. The board should fix the salary, determine the number of assistants to be employed, fix their salaries, and employ them on the recommendation of the superintendent.

Local school districts should remain as at present, and the county should have power to consolidate, divide, and change district boundaries at its discretion. Local trustees should be elected as at present to act as custodians of the school building, to attend to repairs and upkeep, and to be immediate overseers of the school. They should be agents of the county board, and agents of their districts to make recommendations to the county board relating to supplies and equipment needed and to teachers desired. The local districts should be permitted to employ special teachers in addition to those employed by the county, if they desire to do so, and to meet the necessary expenses incurred.

City systems employing full-time superintendents should be independent of the county board in general administration and supervision. They should be required to report to the county superintendent and county board all statistical information needed by the county board and the State department of education, and to submit evidence that they are complying with all State school laws before any part of the State and county funds is apportioned to them.

b. Reorganization of the method of apportioning State funds on a basis which recognizes county and local effort.

No decrease should be permitted in the amount per school child distributed from the State school fund. Its method of distribution to the counties should be changed, as the present method is on a basis which bears little relation to the ability of the several counties to support schools, or to what they are already doing in education. Each county should receive a fixed sum for every teacher employed in public elementary and secondary schools, the remainder of the State school fund being apportioned to the counties on the basis of the aggregate attendance. Before distribution a portion should be withheld from each county sufficient to pay for the textbooks and other instructional supplies purchased by the State for the public schools in that county. This arrangement is necessary on account of the lack of responsibility felt by county and district authorities for the proper care of books under the present plan.

The support of the State department of education should be provided by direct appropriation. The appropriation should be in a lump sum, so that the State board would be able to pay necessary salaries and determine the number of assistants. All funds for special purposes, such as for teachers' pensions, vocational education, etc., should be provided by direct appropriation and not be taken from the State school fund.

When a county board of education is provided to assume general management of the schools of the county, the county board should pay over to city districts with full-time superintendents an equitable portion of the State and county funds. The rest of the funds the county board should expend to maintain schools as nearly equal as possible in all parts of the county where schools are needed.

Local school districts should continue as at present to raise funds for special purposes to supplement the county funds, and to provide bond issues for building and other permanent improvements.

High-school districts and elementary school districts should be coterminous. All common-school districts now included in union high-school districts should be consolidated into one district for both elementary and high-school purposes, and under the same management and control. In dividing State and county funds between the independent city districts and the rest of the county, average daily attendance in high schools should be included as well as that in elementary schools. High schools in independent districts would therefore be supported largely by State and county funds and should be free of tuition to all pupils of the county.

6. *Requirement of a higher standard of general and professional education for teachers, a revision of the method of certification, establishment of a certification division in the State department of education, which shall be also a teachers' employment bureau.*

The State should require that all new teachers employed after a certain date should have general education not less than the equivalent of a four-year, standard, high-school course and a stated amount of professional work in education, consisting of classroom instruction in a recognized institution for training teachers. One year after the passage of such an act a minimum of six weeks of such professional education should be required, and the amount required in each succeeding year should be gradually increased until by 1924 the amount required should be equivalent to that obtained in a two-year normal-school course. This means a total of six years of secondary and professional education beyond completion of the eighth grade.

The State board of examiners should be abolished and its work done by a division of certification in the State department of educa-

tion. Certificates should be issued by the State board on the recommendation of the certificating division. The kinds of certificates and the requirements for each should be fixed by the State board and not by the State legislature. Certificates should be issued as far as possible on credentials of education and experience.

The diplomas of the State normal schools should be recognized as teaching certificates valid for two years and renewable by the State board of education on presentation of evidence of satisfactory teaching and the completion of the minimum amount of professional reading determined by the State board of education.

The division of certification of the State department should be also a teachers' employment bureau to assist teachers in procuring positions and to assist local authorities in obtaining teachers. A small fee for certificates and a fee for registration should be charged.

7. *Means to encourage the erection of suitable school buildings and to prevent the erection of undesirable ones.*

The plans for all school buildings to be erected in the State should be submitted to the State department of education for approval before work is begun. The department should employ a school architect to consider such plans and also to prepare plans and specifications for school authorities anywhere in the State at the fees ordinarily charged for such work. The architect should be paid a fixed salary and the fees collected should be turned into the State treasury.

8. *Rearranged course of study especially to meet the conditions in the one-teacher schools.*

The State course of study should be arranged in such a way as to make it adaptable to one-teacher schools, to two-teacher schools, and to schools with three or more teachers. The course should be gradually revised to make it fit more closely the conditions peculiar to the State.

9. *Provision for expert supervision of rural schools.*

The supervision of the instructional work in all schools outside of those in independent cities employing full-time superintendents should be under the direction of the county superintendent. He should be an able educator, fitted by experience and training, and have adequate office help and assistant supervisors when necessary. The assistant supervisors, when qualified for the work, might be engaged for part of their time and paid part of their salary by the State agricultural college as leaders in the junior agricultural club work. The club work is primarily education, not agriculture, and in this way can be made a definite part of the school work and of the highest educational value.

10. *Reorganization of the method of handling State textbooks to prevent unnecessary losses.*

One person should be employed in the State department to devote his entire time to the care and delivery of textbooks. County superintendents should be responsible for the requisitions submitted by the school districts in order that only necessary books be included. District clerks should be bonded and held responsible for the care and delivery of the books to the school, which delivery in many cases can be made directly from the publishers. Each county superintendent should have on hand a supply to be issued in emergencies. The cost of textbooks furnished to each county by the State should be deducted from the State funds after apportionment to the counties, but before distribution. Careful investigation should be made of the advantages of handling the State books through a State depository to determine whether the method should be continued or whether the books should be purchased direct from the publishers by the State department, the State department itself acting as depository. If after the investigation the depository is retained, the representative of the State department in charge of books should have office room in the department building and have immediate oversight of the shipment and return of books.

CHAPTER IV.

THE STATE NORMAL SCHOOLS AND DEPARTMENT OF EDUCATION IN THE STATE UNIVERSITY.

Section 1.—FUNDAMENTAL PREMISES.

Organization and function of the State normal schools determined by State needs.—The public normal schools in any State must be considered an integral part of the State system of higher education. These schools are organized for all a State's citizens, and are maintained through public taxation. They do not belong to any one community, but to the State as a whole. How the normal schools should be organized, what kind of services they should render, can properly be determined, therefore, only by present State-wide requirements and in no wise by sectional or local desires.

It is manifestly unfair to measure the present status of the Arizona State normal schools by similar schools in the Middle West and East. Because of the newness of the State, its sparse population, great distances, and small number of well-organized high schools, the normal schools have from the first been burdened with tasks which are unknown to the well-established normal schools in the older States. How far these tasks and responsibilities have been necessary, and how far self-imposed and unnecessary, will appear in a later discussion of the internal organization of the schools.

Before examining in detail the present status of the Arizona State normal schools, the committee desire to lay down a few general premises bearing on the fundamental purposes and limitations of all State normal schools, thus better to indicate the lines of development to be followed by normal schools in this State.

Résumé of normal-school organization in the United States.—The first efforts to prepare elementary-school teachers in the United States were made about 85 years ago by the State of New York, which subsidized a few of its private academies for this important task. Shortly afterwards Massachusetts and other States began to prepare elementary and grammar school teachers in regular normal schools. At that time teachers needed for the academies (there being practically no other high schools) were educated for the most part in the colleges and universities. The policy thus established has been

adhered to consistently down to the present time in the northeastern section of the country. The replies to a recent questionnaire on normal-school functions show that practically all the normal schools in New England and New York and practically all in Pennsylvania confine their energies to the preparation of teachers for schools below high-school rank, leaving the training of high-school teachers to the departments of education in colleges and universities.

In the Middle West and Western States the normal schools have generally developed contemporaneously with the State universities and colleges and have often become well established as the chief institutions for teacher training, while the universities were struggling to lay good foundations for college courses in arts and sciences. In some of these States the normal schools have developed into colleges of education, competing for prestige and patronage with the schools of education in the universities and colleges.

The paramount purpose of the normal schools.—From the point of view of the economical and effective use of the State's educational machinery, the policy represented by the Northeastern States is unquestionably the wiser one.

The teaching force and physical equipment of normal schools all over the country have been selected and the general professional atmosphere developed with a view to one paramount purpose, namely, the training of elementary teachers. Whatever the ambitions of certain institutions, the momentum of the normal school is in this direction. The peculiar and exacting nature of this task prevents the successful adaptation of the normal school to secondary work. The committee's dictum on this point is based on the study of many normal schools in all parts of the country. It is convinced that not until the normal schools of a State have accomplished with some fullness their chief function—the preparation of elementary teachers—may they profitably devote their surplus energies and equipment to preparing teachers for higher schools. Normal schools have not satisfied this important function so long as the State is obliged to accept large numbers of teachers without sufficient professional preparation, who enter the service by the examination route, or so long as the normal schools are unable to give a specialized preparation to both rural and other elementary teachers.

Moreover, certain other considerations should not be forgotten. The physical equipment required in preparing teachers for elementary schools is comparatively inexpensive, but the laboratories and other equipment needed to prepare teachers for high schools are much more costly. For a normal school to provide facilities for higher teacher training often entails an expense out of proportion

to the results attained. Schools which embark upon this enterprise generally fall victims also to another tendency equally calculated to defeat their main purpose. The attention of the stronger members of their staffs is concentrated upon a small group of advanced students, while the younger pupils are left to the care of the less efficient and less experienced instructors.

Organization and present scope of Arizona State normal schools.—The citizens of Arizona have the right to demand that their normal schools be administered in such a way as to give the people the largest possible returns in well-equipped teachers without waste of funds and without diverting the schools' energies into channels other than those of teacher training. To the attainment of this end it is essential to define as clearly as possible the purpose of the State in establishing the State normal schools and to show how changing conditions in the new and rapidly developing State have conspired to require changes in the original purpose for which they were established. The two normal schools were organized at different times, each under its own legal enactment. The Tempe State Normal School, the older of the two schools, was created under the normal school act of 1885. The act states the purposes for which the school was founded to be—

> The instruction of persons, both male and female, in the art of teaching and in all the various branches that pertain to a good common-school education; also to give instruction in mechanical arts and in husbandry and agricultural chemistry, and in the fundamental laws of the United States, and in what regards the rights and duties of citizens.

The legislators who thus provided for the establishment of the first normal school intended to give the State an institution broad enough to include in its organization not only the preparation of teachers for the public schools of the State, but also the academic preparation of the children of those sections of the State which had no facilities for high-school instruction. They probably anticipated also that the school might some time, by reason of its location in one of the best agricultural sections of the State, become a college of mechanical arts and agriculture.

The Northern Arizona Normal School, at Flagstaff, was organized under the act of 1898. The purpose of organization is stated in the act in the following language:

> The exclusive purpose and object of the State normal school shall be the instruction and training of persons, both male and female, in the theory and art of teaching and all the various branches that pertain to a good common-school education and in all subjects needful to qualify for teaching in the public schools; also to give instruction in the fundamental law of the State and the United States in what regards the rights and the duties of the citizens.

The clause is somewhat ambiguous. The chief purpose is clearly to prepare teachers for the public schools; at the same time it may be construed to include as one of its objects instruction in general academic courses.

The normal schools largely academic institutions.—The normal schools of Arizona have given the code a liberal interpretation. The reason is not far to seek. The explanation lies in the scarcity of young men and women prepared to enter the professional departments in the normal schools. The State has only 24 well-organized four-year high schools. Should the advantages of normal schools be limited to the few communities so fortunate as to have schools strong enough to provide a good academic foundation for the professional work? Or should the normal schools offer, in addition to their regular professional courses, academic subjects for young people who desire to prepare for teaching but live in communities without necessary high-school facilities? The normal schools have declared in favor of the latter policy and are offering combined academic and professional courses especially organized for pupils from eight-year elementary schools.

It may be asked whether the Arizona normal schools are justified in maintaining academic departments for pupils who do not expect to prepare for teaching as a profession, even though they came from communities where there are no high schools. The lines must be drawn somewhere. An educational institution which gives the greater part of its energies to academic instruction and a majority of whose students are immature as to years and life purpose will find it difficult to do well the tasks indicated in its chief function—that of preparing public-school teachers. To what extent the Arizona normal schools carry their secondary-school activities will appear in detail later.

What the State expends for normal-school maintenance.—Before proceeding with a discussion of the internal organization of the normal school, it is well for the State to know how it ranks in regard to normal-school expenditure. The following table gives the amount spent annually in every State for normal schools for each 100 children 5 to 18 years of age and the amount spent for normal schools for each $1,000 spent for public schools.

TABLE 79.—*Value of property in the several States—Expenditures for normal schools.*

States.	Total value of property, in millions.	Value of property for each child 5 to 18 years of age (1913).	Number of adults for each 100 children 5 to 18 years of age (1910).	Number of men 21 years and over for each 100 children 5 to 18 years of age (1910).	Amount spent for normal schools for each 100 children 5 to 18 years of age (1913–14).	Amount spent for normal schools for each $1,000 spent for public schools (1912–13).
North Atlantic Division:						
Maine	$1,030	$5,900	241	[illegible]	$77.57	$25
New Hampshire	613	6,300	252	123	46.95	25
Vermont	497	9,500	237	119	23.89	10
Massachusetts	5,753	7,300	246	116	61.71	19
Rhode Island	893	6,600	231	111	50.71	25
Connecticut	2,154	7,900	231	115	47.35	16
New York	21,913	9,900	239	117	22.44	9
New Jersey	5,362	8,100	222	110	22.63	8
Pennsylvania	14,137	6,900	208	105	12.53	5
North Central Division:						
Ohio	8,552	7,300	227	113	8.18	3
Indiana	4,951	7,200	211	106	20.88	9
Illinois	14,596	10,000	213	108	43.36	14
Michigan	5,169	7,100	214	109	61.14	20
Wisconsin	4,282	6,400	183	93	157.41	58
Minnesota	5,267	8,900	185	99	48.50	17
Iowa	7,437	12,700	195	98	4.40	2
Missouri	5,546	6,300	196	98	39.22	27
North Dakota	2,038	10,900	166	93	93.77	47
South Dakota	1,331	7,500	175	96	85.95	31
Nebraska	3,605	10,700	182	95	77.75	28
Kansas	4,394	9,400	190	98	66.28	24
South Atlantic Division:						
Delaware	294	5,700	215	107	.....	.....
Maryland	2,002	5,700	196	94	14.07	10
Virginia	2,175	3,400	153	74	36.16	28
West Virginia	2,180	5,800	161	84	42.46	35
North Carolina	1,745	2,200	133	63	23.66	37
South Carolina	1,301	2,500	124	58	23.32	42
Georgia	2,299	2,600	137	66	18.30	21
Florida	1,015	4,300	165	87	.....	.....
South Central Division:						
Kentucky	2,152	3,100	160	79	23.74	21
Tennessee	1,834	2,700	152	74	21.16	25
Alabama	2,050	2,900	138	67	14.77	20
Mississippi	1,300	2,100	160	65	7.04	18
Louisiana	2,057	3,800	144	70	18.57	15
Texas	6,552	5,000	142	72	19.89	14
Arkansas	1,758	3,400	139	70	16.60	21
Oklahoma	4,321	7,300	145	78	36.86	31
Western Division:						
Montana	1,113	12,300	261	165	64.77	9
Wyoming	345	10,200	269	179	.....	.....
Colorado	2,286	11,100	231	125	19.36	6
New Mexico	502	4,700	162	88	62.44	52
Arizona	**487**	**8,600**	**213**	**129**	**210.30**	**52**
Utah	735	6,300	160	85	.....	.....
Nevada	441	28,400	269	180	.....	.....
Idaho	591	5,900	190	113	93.09	21
Washington	3,055	10,400	255	151	90.49	16
Oregon	1,843	11,100	253	148	26.05	6
California	8,023	15,500	301	169	108.66	13

[1] Cents not included.
[2] Amounts spent for public normal education not included.
[3] Recent reorganization accounts for low figures.

The table discloses that Arizona spent $210.30 on its normal schools for each 100 children of school age, which is considerably more than is expended on this basis of calculation in any other State in the Union. The sum includes maintenance funds and also a liberal sum for new buildings, which makes the amount slightly larger than for an average year. Similarly, the State is exceeded

only by Wisconsin and tied for second place with New Mexico in the amount spent on its normal schools for each $1,000 spent for public schools. Relatively, to be sure, a new, sparsely peopled State must expend more per capita for higher educational institutions than the older States, but even with this allowance the normal schools of Arizona are very generously supported.

But this must not be construed to mean that the schools have received from year to year all the funds they could use to advantage. That is not the case. In schools expanding as rapidly as the Arizona normal schools, a liberal policy of financial support is necessary. Such a relatively large expenditure will naturally lead to other questions. Does the State get proportionately good returns from its investment? What proportion of the funds is actually utilized in teacher training? And what proportion for other educational purposes? Are the teachers trained in the normal schools equally well fitted to instruct the children who live in the ranching and agricultural sections and the children who live in mining and other industrial centers?

The State normal schools are still in the formative stage, but they are far enough advanced to warrant the adoption of a definite policy for the future, permitting each school to develop along the line required by its location in the State, and avoiding expensive duplication and unnecessary courses.

Section 2.—CONTROL AND ORGANIZATION OF THE ARIZONA NORMAL SCHOOLS.

Normal school control.—The normal schools of the State are under the general control and management of separate "boards of education," although the ex officio State board of education prescribes regulations for entrance requirements and minimum courses of study. The normal school boards are, in fact, local boards, for each is composed of the State superintendent, and two citizens residing at the seat of the normal school. It is difficult to see any reason for thus localizing the interests of these important boards. It is the committee's belief that this organization explains in large measure the feeling throughout the State that the normal schools are primarily local and not State institutions. That impression causes serious loss to the normal schools, both in support and prestige. It must be recognized by all that the normal schools are a definite part of the public-school system, as they are the professional schools which train teachers for the other schools in the system.

The normal schools should be under a single State board for reasons of business management. Such a readjustment would eliminate rivalries of the institutions before the State legislature in their efforts to secure appropriations, and would make it easier for each to obtain

the funds and equipment it may require. That single board should be the State board of education proposed elsewhere in the survey. It is recommended that the proposed board have charge of the general school system and, therefore, of the normal schools which prepare teachers for the public schools. The new State board of education should supersede the two local boards of education and the ex officio State board of education in normal-school control and management.

Student enrollment and distribution.—The Tempe Normal School is situated at Tempe, within a half hour's drive from Phoenix, in a rich agricultural section in the south central section of the State. The Northern Arizona Normal School is at Flagstaff, in the north, in a region devoted to lumbering, grazing, and dry farming. Geographically and strategically, the schools are probably as well located as could be desired. The growth in student attendance has been uniformly good in both the normal schools, as may be seen from the following table giving their student attendance annually for 5 years closing 1916–17:

TABLE 80.—*Enrollment at State normal schools.*

Schools.	1911–12	1912–13	1913–14	1914–15	1915–16	1916–17[1]
Tempe	267	321	365	603	393	422
Flagstaff	142	132	152	214	266	320

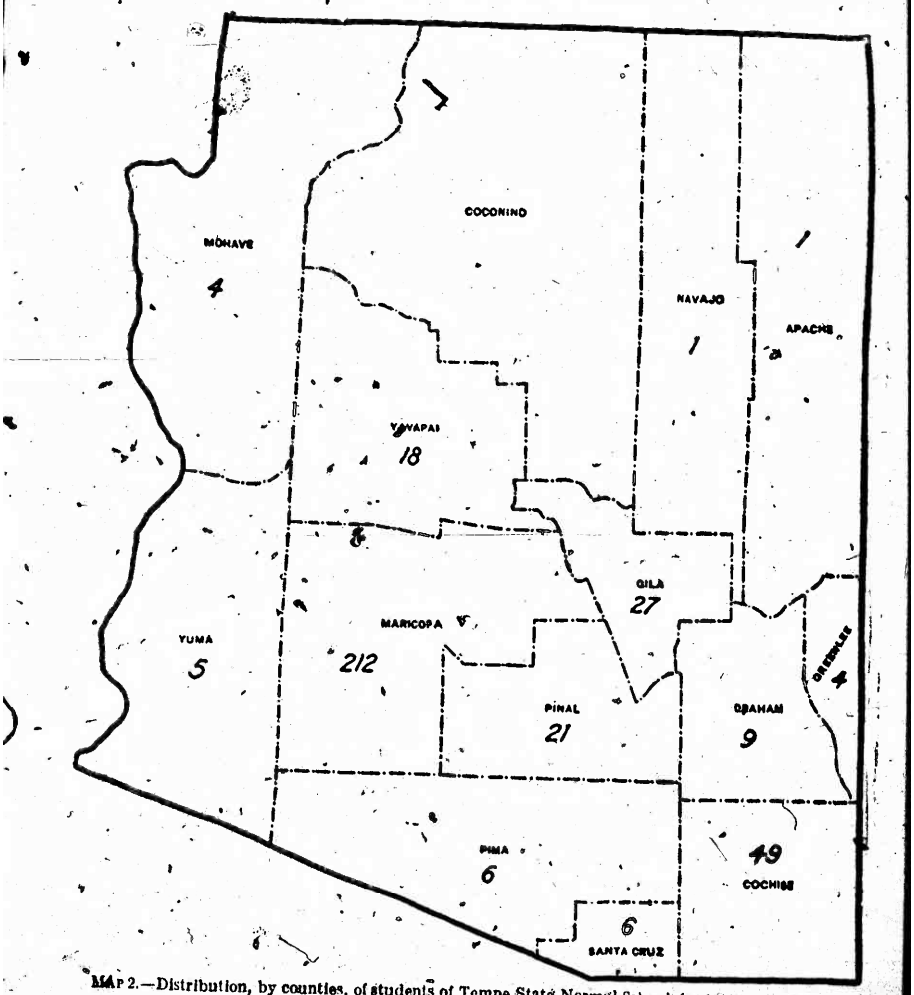
[1] First semester only.

The Northern Arizona Normal School, by reason of its excellent summer climate, maintains a summer school in addition to the regular school term. The summer school also has shown a satisfactory growth. In 1912, 90 students were in attendance; in 1913, 124; in 1914, 158; in 1915, 203; in 1916, 226. The maps reproduced herein indicate graphically the distribution of the students over the State.

It appears that the Tempe Normal School has drawn its 1916–17 attendance from every county except Coconino. Maricopa County heads the list with 212 students, or more than one-half of the entire school attendance, but this is explained largely by the fact that Maricopa County contains about one-sixth of the entire population of the State. Likewise, a large number of people who send their children to the normal schools make the seat of these schools their home while their children attend school.

The Northern Arizona Normal School drew its 1916–17 attendance from all except three counties. This attendance is even better distributed over the State than that of the older school. This is due to the fact that this school alone has a summer school. Many students who take their first work in the institution during the summer

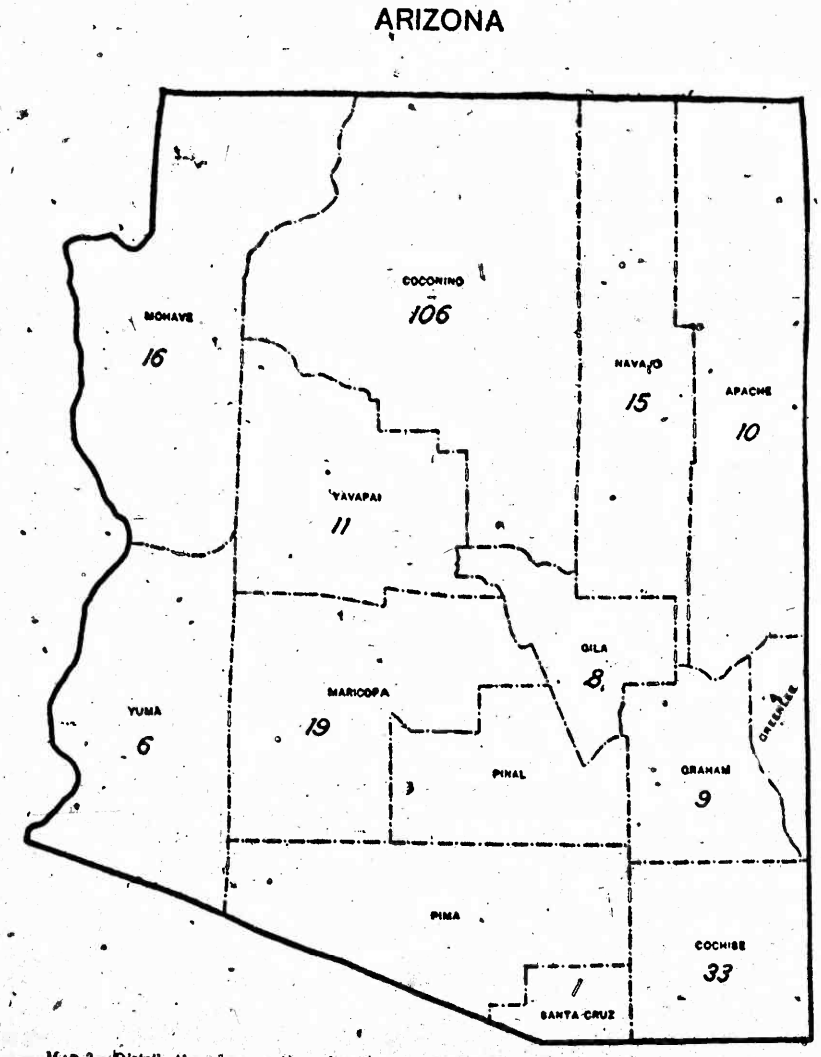
session reenter later as matriculants of the regular school year. An examination of map 4 discloses that both Maricopa and Cochise



MAP 2.—Distribution, by counties, of students of Tempe State Normal School, for 1916-17. Arizona counties, 363; other States, 59; total, 422.

Counties have more students in the Flagstaff summer school than Coconino County, the home of the school.

From this it is clear that so far as actual distribution of students goes, the two normal schools reach well enough every part of the State. For many years to come, at least, there seems no reason

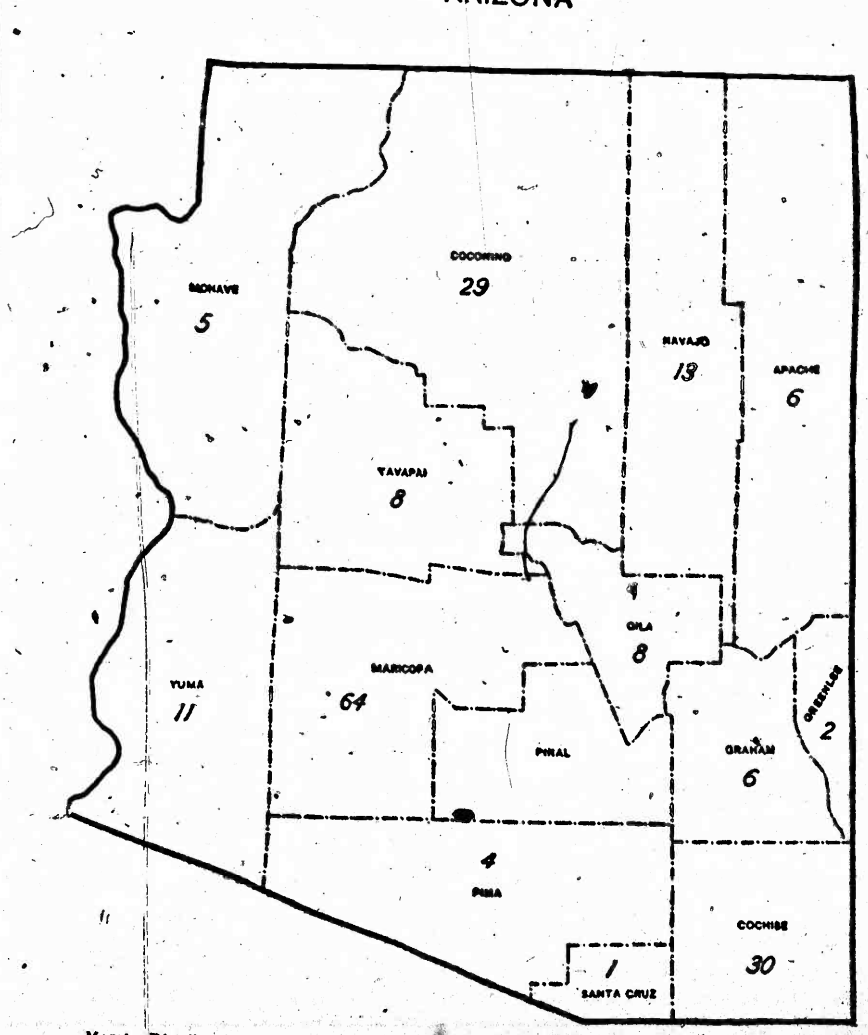


MAP 3.—Distribution, by counties, of students of Northern Arizona Normal School, for 1915-16. Arizona counties, 234; other States, 34; total 268.

for planning for additional normal schools for elementary teacher training.

Justification for the presence of academic students in the Arizona normal schools.—The school attendance enumerated above includes

all the students in the two schools. It comprises three classes of students: Graduates of four-year high schools in full professional standing; students of the so-called "five-year course," taking both



MAP 4.—Distribution, by counties, of summer school students of Northern Arizona Normal School for 1916. Arizona counties, 187; other States, 39; total, 226.

the academic and professional work in the school; and students pursuing regular academic and commercial courses.

In a total present attendance of 422 students at Tempe, 210 are classed as belonging in the professional group, and at Flagstaff, in

a total attendance of 320, only 106 are in the professional group. The nonprofessional group is unduly large. At Tempe 165 are classed as such, and at Flagstaff 135. The normal schools are justified in making provision for all students coming from communities without high-school facilities who wish to pursue the normal school courses, since it would be impossible otherwise to obtain a sufficiently large number of academically prepared students for the professional courses. It is even felt that the establishment of the high-school courses has in the past been justified on the ground that many sections of the State which are taxed for the maintenance of the normal schools have no local high-school facilities and have, therefore, the choice between sending their children to the normal schools or depriving them of a secondary education.

There comes a point, however, when it is necessary to consider whether the State gains the more by continuing these courses or loses the more by absorbing a large part of the energy of the schools in academic instruction. The committee believe that the normal schools should discourage the matriculation of high-school students, and exclude them altogether as soon as high-school facilities shall have been provided generally over the State. The high-school department should be distinct in every way from the regular normal school departments, and students admitted to it should be classified and catalogued in the publications of the schools under the caption of high-school students.

The Northern Arizona Normal School not justified in offering high-school facilities to Flagstaff.—There is reason to believe that the Arizona normal schools have encouraged rather than discouraged academic student attendance. This working for mere numbers is at best unprofitable. The normal schools may have been tempted to do this since the public is inclined to judge a school's usefulness to the State by the size of its enrollment.

Attention is called to the fact that 52 students classed as "purely academic" are enrolled from Flagstaff and Coconino County. This is in addition to a large number enrolled locally in the "five-year" group. These students are permanent residents of Flagstaff and Coconino County. Flagstaff is a town with a population of between 2,000 and 3,000 and yet has no organized high school of its own. Here is a plain case of a well-to-do community taking advantage of a State-maintained institution for its own local ends. This condition should be remedied without delay. Flagstaff will be better served by having its own high school and the normal school will be enabled to devote its energy more fully to professional work. The professional tone at Flagstaff is impaired by the large number of immature students of high-school rank. The attainment of a real professional

atmosphere is difficult, and the individual initiative and self-reliance that such a school should inculcate in its students is lacking. The committee recommends, therefore, that steps be taken immediately to rectify this condition.

Organization of departments within the normal schools for students from communities without high-school facilities who wish to prepare for normal-school entrance.—Time and maturity of years are both essential elements in teacher preparation and to teaching success. Arizona should be satisfied with nothing short of the choicest teaching material. To acquire this there should be a distinct demarkation of the normal-school courses and the preparatory courses in the schools. The committee, acting upon the policy accepted by the most progressive normal schools, recommend that all students seeking entrance to the normal schools be required to complete a four-year high-school course before being accepted to normal-school standing. For the large group of students coming from communities where there are no high-school facilities the normal schools should maintain a distinct four-year high-school department, to be designated as the "prenormal school" or "high-school department." All such students should be expected to devote at least two years to professional study in the normal school proper after their graduation from the high-school department.

Professional preparation of Arizona teachers.—In 1916–17, 1,546 teachers were employed for the rural, other elementary, and high schools of the State. Of those reporting to the committee nearly 11 per cent were teaching their first te[illegible]62 [illegible] cent held college or normal-school diplomas from Arizona or from other States; 14 per cent held first-grade certificates through examination.

A study of all the rural teachers of the State shows that four-tenths of 1 per cent have been limited to an elementary school education; 16.2 per cent have had a partial high-school education; 15 per cent have the equivalent of a full high-school education; 60.8 per cent have completed the high school and have had some college work, or a full or partial course in normal schools; 7.6 per cent are college graduates. Finally, 70 per cent have had at least one year of professional training either in colleges or normal schools. Some of them received this year of professional training in normal schools not requiring high-school graduation for entrance and are not included in the 68.4 per cent with more than the equivalent of a high-school education. Of elementary school teachers of cities and of high-school teachers, 89 per cent have had at least one year professional preparation in normal schools or colleges. A study of all the teachers in Cochise County shows the following: 13.17 per cent have been trained at the Tempe State Normal School and 9.69 per cent at the Northern Arizona Normal School; 47.28 per cent have

had their preparation in normal schools and schools of education in States other than Arizona; 29.86 failed to report and could not be considered. This shows that fully 70 per cent of all the teachers in Cochise County have had a reasonable degree of professional preparation.

Extent to which the two normal schools supply teachers for the schools.—Investigation indicates that in the past only a comparatively small number of Arizona teachers received their preparation in Arizona professional schools. It is true, of course, that while the State receives many teachers from other States, some Arizona-trained teachers likewise seek professional positions in adjoining States.

During the school year 1915–16 the Tempe Normal School graduated in all courses 86 students, of whom 68 are teaching in Arizona; during the same period the Northern Arizona Normal School graduated 43, of whom 36 are teaching in the State. This makes only about one-third of the teachers actually needed; the rest must be drawn from other States or certificated upon examination. It is, therefore, apparent that the normal schools have not yet filled their function in teacher training as fully as the State has reason to expect. The State will continue to increase in population for years to come, and the normal schools will be taxed to keep pace with the demands upon them for well-trained elementary teachers.

Section 3.—COURSES OF STUDY—CONTENTS AND STANDARDS TO BE ATTAINED.

Uniform courses of study required by the regulations of the State board of education.—The Arizona State board of education has established the following regulations to comply with the State law requiring that the normal schools of Arizona maintain uniform courses of study for the regular normal-school diploma:

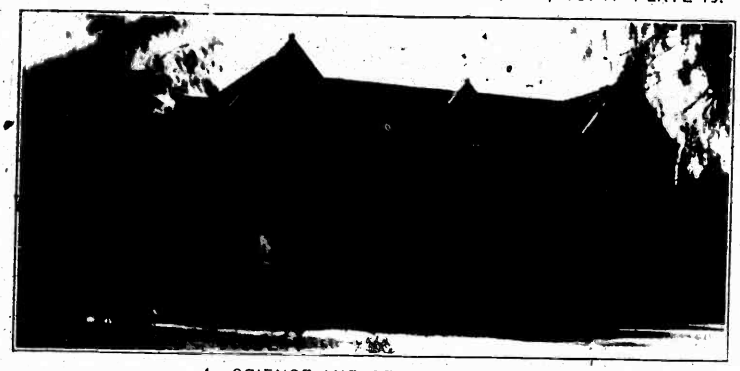
1. The length of the regular school year shall be 38 weeks, exclusive of summer school.

2. There shall be two regular courses leading to graduation for the purpose of securing a diploma to teach in the schools of the State—a minimum of five years for graduates from the eighth grade of the public schools and a minimum of two years for graduates of a four-year high-school course.

3. Students who are graduates of a four-year high-school course and in addition thereto have taken some professional work in a college, university, or normal school, and who have had one year's experience in teaching in the public schools may receive credit on the two-year course, but in all such cases students will be required to take at least one year's work in residence before receiving a normal-school diploma.

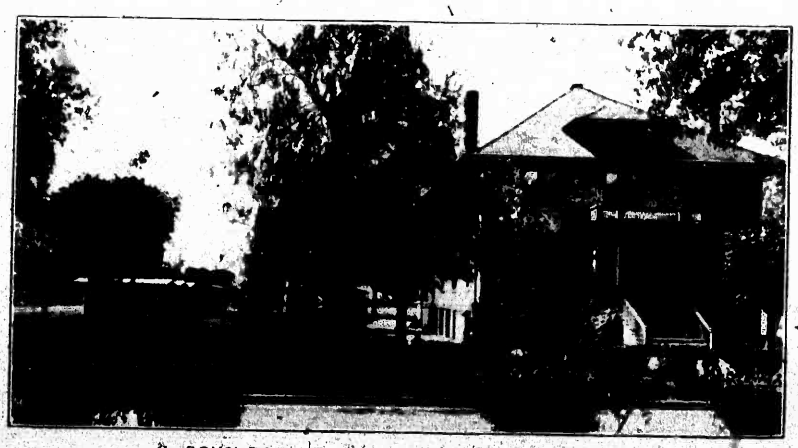
Organization of study courses at Tempe.—Aside from complying with the minimum requirements prescribed by the State board of education, the normal schools are in other respects governed in the growth and expansion of their study courses by what appears as

MODEL SCHOOL, STATE NORMAL SCHOOL, TEMPE.



A. SCIENCE AND OFFICE BUILDING.

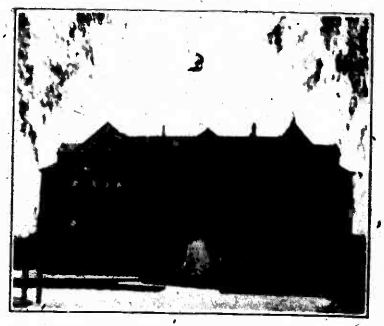
B. A COTTAGE UNIT OF THE GIRLS' DORMITORY GROUP.



C. BOYS' DORMITORY AND OVERFLOW COTTAGES.

STATE NORMAL SCHOOL, TEMPE.

A. GYMNASIUM AND AUDITORIUM.

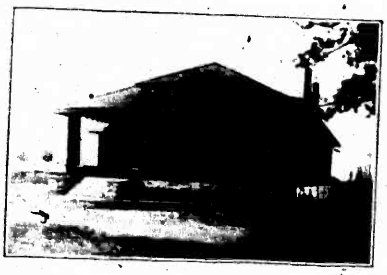


B. MAIN LECTURE BUILDING.

C. MANUAL ARTS BUILDING.

D. A SECTION OF THE LIBRARY.

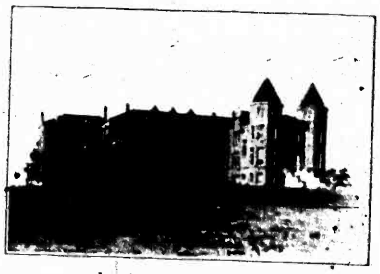
STATE NORMAL SCHOOL, TEMP



A. DINING HALL.

B. BOYS' HALL.

C. A GIRLS' DORMITORY.



D. MAIN BUILDING.

E. VIEW FROM THE MAIN BUILDING.

NORTHERN ARIZONA NORMAL SCHOOL, FLAGSTAFF.

urgent public demands. The Tempe school, being the older of the two, has had time to develop and enlarge its courses to a degree commensurate with the needs of the State. The school is organized into three departments: (1) The normal school; (2) the training school; and (3) the school of industrial arts.

The normal school offers four courses, one of these being the four-year high-school course mentioned elsewhere, which should not be counted as a part of the normal school department. Of the others, Course A and course B are practically one course excepting that A devotes more time to science and industrial subjects, and course B more time to language study. The courses are:

A. Five-year professional course for graduates of the grammar schools;

B. Five-year professional course for graduates of the grammar school, which includes languages (Latin, German, and Spanish).

C. Two-year professional course for graduates of a four-year high-school course.

D. Four-year academic course for students who do not desire to prepare for teaching.

A normal-school diploma is granted to all students who complete either one of courses A, B, or C. This is a life certificate and entitles the holder to teach without examination in the public schools of Arizona and in other States which accept teaching credentials of this kind. The normal-school diploma requires a minimum of 15 academic units and 10 professional units for its completion. A "unit" is defined as denoting a subject studied through one school year with five recitations per week, each 45 minutes long, throughout 38 school weeks. The actual amount of time devoted to study compares favorably with other good normal schools of the country for similar courses studied by the committee.

The two five-year courses allow students a reasonable freedom of election for their chosen field. Course A emphasizes the mother tongue to the exclusion of other languages and includes a satisfactory amount of modern science and the new industrial subjects.

In addition to the regular normal-school courses, the Tempe school offers special vocational courses in (1) school art, (2) industrial arts, (3) home economics, (4) agriculture, (5) commerce, and (6) kindergarten training. These courses are offered partly in the normal school proper and partly in the school of industrial arts. They are two-year courses leading to graduation and a special diploma. Requirements for entrance to the special vocational courses are sufficiently rigid, demanding (1) completion of three years of the regular five-year course (course A), including one unit of vocational work corresponding to the special line selected; or (2) graduation from a standard four-year academic course, together with a recommendation for special ability along the line of the particular vocational

course selected; or (3) the equivalent of requiremnt for all who are not graduates of a standard high school under such conditions as the heads of the respective departments may require.

The vocational courses are well organized and thorough. The subjects are taught mainly in the new industrial arts building, which has exceptionally good equipment for this purpose. The students pursuing the courses in agricultural education have the use of good experiment facilities, including experimental gardens and a well-stocked school farm.

The vocational courses are planned for special-subject teachers and for supervisors. The graduates go into the elementary public schools and in a few instances into the smaller high schools. Some of the supervisors thus prepared are obliged to instruct in both elementary and high-school work. These cases are few, however, and should not affect the general policy of limiting the normal school activities in the main to the elementary school field until such time as the latter has been more fully occupied than now.

The new department of commerce has been established to meet a demand for trained young men and women in commercial activities. This is clearly not the field of the normal school, and if the department must be operated as a school of commerce because no other educational institution in the State offers this valuable work, it should be considered a distinct department and not an integral part of the normal school.

On the other hand, the normal school should require a certain amount of instruction in bookkeeping, farm accounting, etc., of all rural and other elementary teachers. It is essential that simple work of this kind be included in all elementary school courses. The committee elsewhere in this report has recommended strengthening the department of education of one university.

With the one exception of specialized training for rural teaching, the Tempe school has made ample provision for differentiated courses and elective subjects. Some work for rural teachers is provided in the regular pedagogical courses and in connection with agricultural education, and a rural practice school is maintained, but the school has no special rural school department and offers no special rural school diploma, both of which are desirable in a State like Arizona.

Organization of study courses at Flagstaff.—Four courses are offered by the Northern Arizona Normal School, as follows: (1) Two-year and five-year normal courses; (2) a four-year academic course; (3) a commercial course.

The four-year academic course is the high-school course described in a preceding section. The commercial course "is designed to fit students for actual work in the business world," to quote from the

school announcement for 1916–17. Commercial subjects are also elected in the high-school course and other courses. It is clearly not the business of a normal school to prepare young people for business careers. The only legitimate purpose of a commercial department in a normal school is to prepare teachers in commercial subjects so far as these are taught in the regular elementary schools. To this field it is recommended that the commercial department of the Northern Arizona Normal School be limited.

The two and five year normal school courses are patterned largely upon the traditional college courses and provide very little flexibility for election of subjects. It is a notable fact that agriculture, domestic science, manual training, and similar subjects are not required in any of the courses except as "hand work" in the last year of the professional group. Moreover, the list of required subjects is so large as to practically preclude all election of other subjects. The committee urge that these courses be thoroughly reorganized to give the new sciences and the vocational subjects a larger place on the daily program. It further recommends that the work be differentiated as courses for elementary teachers, rural teachers, special-subject teachers, etc., which would give all teachers in training the desired opportunity to follow their own natural bent.

Total number of students in the two normal schools pursuing the several subjects.—The following table includes all the subjects given at the two normal schools for the first semester of the year 1916–17, with the number of students taking each subject. This shows definitely the difference in the trend of the two institutions.

TABLE 81.—*Students in the several courses at the Arizona normal schools.*

	Tempe.	Flagstaff.
Agriculture	104	4
Drawing and industrial art	221	121
Biology and bacteriology	90	11
Commerce:		
Typewriting	28	.....
Stenography	13	.....
Bookkeeping	12	.....
Commercial law	46	.....
Total	99	121
Education:		
Psychology	103	57
Pedagogy	80	19
School law and economy	46	.....
History of education	49	.....
Methods	84	60
Practice teaching	84	.....
Kindergarten	23	.....
Total	420	185
Geography and physiography	85	91
History, civics, and sociology	151	66
Home economics	86	34

TABLE 81.—*Students in the several courses at the Arizona normal schools*—Con.

	Tempe.	Flagstaff.
Manual training:		
Woodwork	57	
Ironwork and mechanical drawing	33	
Total	90	35
Mathematics	233	210
Military drill	101	
Music:		
Vocal	136	
Instrumental (band and orchestra)	68	
Total	204	130
Languages:		
English	282	215
Latin	54	11
German	1	
Spanish	70	50
Total	407	276
Penmanship (Palmer system)	99	
Physical training (young women)	278	
Physics	56	5
Chemistry	33	
Reading	37	
Spelling		89

[1] Subject division not specified.

The table shows that at Tempe 101, or about one-fourth of all the students, take one or another of the agricultural education courses, while at Flagstaff only 4 students in 322 take agriculture. At Tempe 90 take manual training; at Flagstaff, 35. Professional subjects head the list at Tempe with 420 students; language comes second with 407; physical training (for women) third, with 278; and mathematics fourth, with 233. At Flagstaff language stands first, with 276; mathematics second, with 210; education third, with 185; and music fourth, with 130. Flagstaff offers no courses in physical education aside from athletics during the fall season, and the school lacks facilities for this work.

Standardization of normal-school cources as two and three-year courses about high-school grade.—It should be the desire of all normal schools to raise the entrance requirements to their courses as soon as the public schools of the State are sufficiently organized to permit this to be done. In the older States, with their well-established high schools, no normal schools should be permitted to accept students who have not completed a standard four-year high-school course or its equivalent. Arizona, however, has not yet reached this condition. It will be some time before the normal schools can hope to get all the students they need from fully-equipped high schools. In the meantime, provision can be made for other students in prenormal or academic courses as suggested elsewhere.

Meanwhile, it is important for the schools to consider increasing the professional requirements for graduation.

The teaching profession will profit more by having the normal schools adhere closely to their chief function of preparing elementary teachers well than to be ambitious to cover a larger field than their equipment allows them to do satisfactorily. The standard in the most progressive States now requires an academic minimum of four years of high-school preparation or its equivalent, and two years of professional study above high-school graduation. The committee believes that the Arizona normal schools should make a beginning for higher professional standards as soon as possible, and to this end recommends that, beginning with the school year 1918-19, only differentiated two and three-year professional courses be offered by the two normal schools.

Provision for specialized departments in which to prepare rural teachers.—It is not sufficient that teachers in rural schools should have as much general education and professional schooling as teachers in the elementary city schools. In addition they need a knowledge of many subjects not necessary for elementary teachers in the city schools. Rural teachers must understand the underlying problems of country life and must have correct vision and point of view, and zeal to undertake the trying tasks of modern rural teaching. This calls for a many-sided specialized preparation which can not be acquired in the general pedagogical courses. Specialized departments in charge of rural life experts are required to solve this problem.

The Tempe Normal School has already taken the first steps toward organizing such a department. It maintains a well-organized practice school within 10 minutes' ride from the campus, to which the rural teachers in training are conveyed at the school's expense. At Flagstaff no special department is maintained or courses offered for rural teachers. The committee recommends that distinct departments for training rural teachers be established in connection with both normal schools; that the organization include (1) a head of department, (2) an extension service, and (3) one or more rural practice or critic teachers; that the rural school course of study be organized around such subjects as rural sociology and economics and special methods of teaching and school management for rural schools.

Section 4.—TRAINING OF TEACHERS IN SERVICE.

A two-fold extension service.—The responsibility of the normal schools does not stop with the graduation of their teachers in training. If teaching is to be a definite profession, the teacher in service must continue to receive professional direction from the normal

schools. To this end, each of the two Arizona normal schools should organize an extension service, each operating within its own normal school extension district, the boundaries of which may be determined by the State board of education or by the administrative heads of the two schools. The purpose of this extension service should be twofold: (1) To assist all teachers now in service to attain the gradually increasing requirements for permanent certification, whether the teachers are normal-school graduates or not; (2) to provide advanced work for normal-school graduates now in service.

Help for teachers in service working to attain new certification standards.—It would be unfair for the State to require the higher certification standards proposed by the committee (see p. 183) and not to offer the means by which these requirements could be attained without abandoning the teaching field. Many teachers in the service of the State are mature instructors with families and others depending on them for support, which would prohibit actual school attendance on their part. To reach this large group of teachers is the primary purpose in recommending an extension service in the normal schools. The committee feels that this extension work can be made an important part of the normal-school service to the State. A director of extension should be appointed for each school with a sufficient number of assistants to establish week-end study centers within convenient reach of the teachers.

A similar extension service has recently been recommended by the Bureau of Education in its surveys of the educational systems of Washington and North Dakota. The details of the service must be conducted in the manner best suited to the needs of each extension district and the State. The committee believes that a modified form of the so-called "Iowa plan" organized by the Iowa State Teachers' College for that State would meet Arizona requirements.

For the next few years the summer school for teachers held at Flag-taff should offer special courses for teachers-in-service who are working to meet new legal requirements for certification.

Advanced work for graduates.—Graduates from the professional courses of the Arizona normal schools receive a normal-school diploma granted for life, which entitles the holder to teach without examination in any public school in Arizona. Unfortunately, graduation from a normal school, however good, is no guarantee that the students will make successful teachers. Certain European countries never grant permanent certificates until the candidate has served a successful apprenticeship of two or more years, during which much time must be devoted to professional reading under Government direction. The committee believes that the professional standards of the Arizona teachers would be greatly improved if a limited

license only were granted on the basis of a normal-school diploma, but that this license should be converted into a life certificate after the graduate shall have proved both his ability to teach and his willingness and ability to carry forward cultural and professional study without the constant oversight of teachers and other school helps. To this end the committee recommends an extension service for normal-school graduates much like the service proposed by the Bureau of Education in its educational surveys of Washington and North Dakota, namely:

1. That for all graduates of the normal schools who hold diplomas valid as certificates to teach in the State, the State board of education shall, with the assistance of the presidents of the normal schools and the head of the department of education in the university prepare thoroughgoing courses of study, including both professional and cultural subjects, which may be completed within a period of three years from the time of beginning study; that examinations on portions of these courses be held from time to time, and that no person receive a permanent license to teach in the public schools of the State until after he has passed a final examination in all courses prescribed; the final examination should be passed not earlier than two nor later than five years after the time of leaving the normal school.

2. That State, county, and city superintendents and supervisors be required to give special attention to young teachers who are pursuing these prescribed courses of study and have not yet received a permanent license to teach. Before granting the permanent license to any teacher, the State board of education should require a statement that such teacher has passed a satisfactory examination on the prescribed course of study, and also a specific report from a qualified superintendent, supervisor, or inspector that this teacher has taught satisfactorily not less than 16 months in the schools of the State. And this report should be accompanied by detailed records of the work done, showing its excellence and its defects within the past eight months.

3. That the same policy in regard to permanent licenses to teach in the elementary schools of the State be pursued with teachers entering the service from other States. The first license granted to any such teacher should be a temporary license. To secure a permanent license the candidate should be required to pass an examination on the prescribed courses of study proposed in 1 and 2 above.

Minimum salaries as a reward for high professional standards.—In order to encourage young men and women of the best native ability to prepare themselves for and to enter and remain in the work of teaching in the schools of Arizona the State should, when standards of admission to and graduation from the normal schools have been

adopted and when provisions have been made for continued study as recommended, fix by law minimum salaries for teachers holding the normal-school diplomas, and should provide for a definite increase in the minimum salaries of the teachers when they have complied with the requirements for and have received permanent licenses. Such a law should apply to teachers from other States as well and should not be so construed as to discriminate on the one hand against teachers from the Arizona State normal schools or on the other hand to discourage good teachers from other States from entering the service of this State.

Section 5.—TEACHING STAFF AND FUTURE POLICY.

Teaching staff, salaries, number of subjects taught, size of classes, etc.—The following summary, giving (1) the number of regular instructors, (2) salaries for the regular school year of 38 weeks, (3) average number of subjects taught, (4) number of teaching hours per instructor, (5) average number of students per hour, and (6) average number of student clock hours per week, furnishes a more exact basis for a comparative study of the two schools:

TABLE 82.—*Number, salaries, and work of the instructors.*

Institutions.	Regular normal school instructors.	Average salary for regular school year.	Average number of subjects taught.	Average number classes per week.	Average number students per class.	Average student clock hours per week.
Tempe	26	[1] $1,794.00	2.00	20.0	29.0	454.0
Flagstaff	16	[2] 1,555.20	3.25	20.3	21.5	417.7

[1] Omits 9 training-school teachers whose average salary is $1,388.88.
[2] Omits 5 training-school teachers whose average salary is $1,130.

The summary shows that the teaching staff of the Tempe school is considerably larger than that of the Flagstaff institution, which explains the ability of the former to offer differentiated courses and a larger amount of elective work. There is a considerable difference in the average salary paid the instructors in the two schools. The average in both, however, is lower than is required for living in comfort in this time of excessive cost of living. The salaries should be scaled up to the standard suggested in the next paragraph. In the number of subjects taught per instructor, Flagstaff shows 3¼ to 2 for Tempe. Naturally, because its faculty is smaller, the Flagstaff institution offers less opportunity for specialization. In other respects, the summary shows substantially similar conditions in the two schools. The following are detailed statements of the two schools, covering the same data as in the foregoing summary:

TABLE 83.—*Salaries and work of teachers in the Tempe Normal School of Arizona.*

Instructors, designated by letters.	Salary per annum.	Subjects taught.	Classes per week.	Average number of students per class.	Total number of student hours per week.
A	[1] $4,000				
B	2,500	3	13	52	676
C	2,000	1	12	22	264
D	1,600	1	16	32	512
E	2,000	3	20	39	780
F	2,000	1	20	14	280
G [2]	2,000	1	22	7	154
H	1,600	2	3	11	[3] 33
I [4]	1,600	2	25	14	350
J	2,000	2	12	6	72
K	2,200	1	4	6	[3] 24
L [5]	2,000	1	15	43	645
M [6]	1,450	2	5	47	235
N	2,000	4	14	24	336
O	2,000	2	14	8	[3] 112
P	1,300	1	15	21	315
Q	1,500	3	6	5	[3] 30
R	1,250	1	20	38	760
S	1,600	2	9	23	207
T	1,700	3	20	46	920
U	1,900	4	20	33	660
V	1,600	2	45	11	495
W	1,350	2	26	5	130
X	1,000	1	13	52	676
Y	1,400		40	5	200
Z	1,100				
Average	1,794	2	20	29	454

[1] Residence on campus furnished rent free.
[2] Director of training school. Conferences with senior teachers and general teachers' meetings; teaches 1 class per day in normal school first semester and 2 classes second semester; 40–45 hours per week.
[3] Practice or training school teaching counted as half subject on half time.
[4] Classes in the grades in training school, twice a week during gardening season. Supervision of 41 Mexican children in home gardening as well as classes at school.
[5] Preceptor and athletic coach. Board and room furnished in dormitory.
[6] Librarian has classes in library methods each 2 weeks during year for freshmen, sophomores, and juniors; and 4 weeks for seniors.

TABLE 84.—*Salaries and work of teachers in the Northern Arizona Normal School.*

Instructors, designated by letters.	Salary, excluding summer school.	Subjects taught.	Classes per week.	Average number of students per class.	Total number student hours per week.
A	$3,333.33	4	19	47	893
B	1,850.00	3	25	24	600
C	1,550.00	3	20	32	640
D	1,550.00	1	23	10	230
E	1,550.00	2	16	19	304
F	1,550.00	1	5	16	80
G	1,400.00	3	20	23	460
H	1,400.00	2	15	25	375
I	1,500.00	5	25	16	400
J	1,500.00	5	25	14	350
K	1,350.00	6	21	25	525
L	1,300.00	6	24	27	648
M	1,300.00	2	20	25	500
N	1,300.00	2	20	26	520
O	1,100.00	5	25	11	275
P	1,400.00	2	21	4	84
Average	1,555.20	3.25	20.3	21.5	417.7

These tables should be studied in the light of the following standards for normal schools now generally accepted by students of education who have given serious study to the internal administration of this class of schools:

1. The average salary of regular instructors should approach $2,000 per annum; the salary of practice school-teachers should approach $1,600;

2. The number of classroom clock hours per instructor should not exceed 20 per week;

3. The number of students per class should not exceed 30 or 35, except in lecture work;

4. The average number of student clock hours[1] carried by an instructor may reach between 300 and 400, the reasonable load in any case being determined by the kind of work required.

Applying these standards to the Arizona normal schools it appears that:

(*a*) The salaries (excluding the administrative heads) paid in both schools are lower than they should be.

(*b*) The averages for the Tempe Normal School (aside from salary) are close to the standard. The head of the history department teaches too large a variety of subjects; the English, mathematics, and education classes average too many students per class. For both subjects additional instructors should be provided. The total student clock hours in laboratory science and physical education average high, but these are exceptional subjects in which larger groups can be taught to advantage. The Tempe school, according to the standard, is operating to its full capacity, and a continued normal growth will demand additional teaching staff and physical equipment.

(*c*) The averages for Flagstaff (aside from salary) are also close to the standard. The difference in the number of subjects for each instructor is unusually great, varying from 1 to 6. The same is true of the student clock hours, which vary from 80 to 893. At Tempe the administrative head of the school is able to devote all his time to administrative work, which in a school of its size is advisable. At Flagstaff the administrative head, in addition to his routine work, teaches four subjects, with a total of 893 student clock hours—more than other members of the instructional staff. This condition should be corrected by adding at least one full-time instructor in professional subjects. The teacher of agricultural subjects has only 5 classes per week, with a total of 80 student clock hours, and the household arts instructor has an average of 4 students per class for a total of 84 student clock hours. This could be remedied by placing some of the industrial subjects on the required list; or, perhaps,

[1] One student under instruction in lecture, quiz, or laboratory for at least 50 minutes net represents one student clock hour.

better by increasing the number of elective subjects. In other respects the Northern Arizona Normal School is running to its full capacity in the matter of instructors and beyond capacity in the matter of physical equipment.

Section 6.—MAINTENANCE, PHYSICAL EQUIPMENT, AND PRESENT NEEDS OF THE ARIZONA NORMAL SCHOOLS.

(A) THE TEMPE NORMAL SCHOOL.

Maintenance.—The total legislative appropriations for the fiscal year amounted to $104,000, of which $90,000 was for regular maintenance, $4,000 for a new hospital building, $5,000 for repairs, and $5,000 for ground improvements. The actual income of the school from all sources amounted to a little more than the $90,000 stated above, largely from the receipts from the school farm, the sale of miscellaneous school furniture, etc. The actual receipts and expenditures for the fiscal year 1915–16 are shown below:

RECEIPTS, 1915–16.

Taxes		$88,314.27
Vocational aid		2,500.00
Department of Agriculture		2,653.73
Miscellaneous:		
School desks, Santa Cruz County	$15.00	
Manual training desks, district No. 17	105.00	
Lumber to prison	53.35	
Radiators to Insane Asylum	200.00	
		373.35
Total		93,841.35

EXPENDITURES, 1915–16.

Administration	120.40
Agriculture	7,166.82
Home economics	338.02
Electric light	1,165.77
Electric power	008.42
Electric supplies and repairs	1,276.99
Faculty salaries	46,808.00
Furniture and equipment	6,085.12
Grounds[1]	4,408.68
Heating	2,853.76
Incidentals	617.29
Insurance	063.00
Janitors	2,093.00
Library	1,039.17
Manual training	700.33

[1] In addition to this amount, $1,522.40 was expended on grounds, but refunded from 1916–17 appropriation for grounds, making the total amount expended $95,880.05.

EXPENDITURES, 1915–16—continued.

Printing	$873.72
Repairs	12,399.19
Stationery and postage	442.13
Supplies	2,232.39
Telephones and telegrams	445.69
Water	918.10
Total	93,863.59

TABLE 85.—*Approximate value of lands, buildings, and equipment, Tempe Normal School of Arizona.*

Property.	Buildings.	Equipment.	Total.
LANDS.			
Campus of 32 acres, highly improved, with cement walks, driveways, lawns, shrubbery, and sewerage system			$55,500
BUILDINGS AND EQUIPMENT.			
Main building	$80,000	$15,500	95,500
Auditorium and gymnasium	30,000	4,850	34,850
Science building	30,000	15,750	45,750
Training school	35,000	5,000	40,000
Industrial-arts building	90,000	22,000	112,000
East Hall	48,000	8,000	56,000
North Hall (including solar heater)	20,000	3,000	23,000
South Hall (including gas heater)	20,000	3,000	23,000
Boys' dormitory	15,000	3,000	19,800
Seven small cottages	1,800		
Dining hall	8,000	2,500	10,500
President's residence	6,000	1,500	7,500
Hospital (now under construction)	6,000		6,000
Heating plant (including 2 boilers)			30,000
Grand stand	1,200		1,200
Barn and silo, Department of Agriculture	1,000		1,000
	422,000	84,100	506,100
STOCK.			
Department of agriculture, including horses, cattle (some thoroughbred Holstein), swine, and poultry			4,000
Grand total			565,600

Physical equipment.—The school grounds embrace 32 acres, exceptionally well planned and improved, valued at $55,500. The building equipment includes 13 buildings used for instruction and lodging. The detailed valuation of the school plant appears in the appended statement. The buildings and equipment are valued at fully half a million dollars. In addition to this, the school rents certain farm lands utilized by the department of agriculture. The school farm is well stocked with pedigreed cattle and other stock.

Grounds and campus.—The campus is well adapted to its purpose, having an excellent location and being in every way well developed. It is well platted, as appears from the attached plan. Provision has been made for outdoor recreation. There are numerous tennis courts, basket-ball courts, a large athletic field containing space for baseball, football, and running track. A large portion of the grounds

is utilized as school garden and experiment plats, which afford opportunity for training students in agriculture and at the same time provide fresh vegetables for the school kitchen. The school has shown foresight in platting its grounds with a view to future enlargement.

Main building.—The main building, Science Hall, and the auditorium inclose three sides of the front quadrangle. The main building was erected in 1894 and is the oldest of the group of buildings now standing. It is used mainly for classroom instruction. The library of 10,000 volumes is also housed here. This structure was, unfortunately, built at a time when more attention was paid to outward appearance than to adaptation to practical use, the result being that classrooms are not satisfactory from a sanitary and practical point of view. The toilet facilities in the building are passable only. The valuable library, housed here, is exposed to danger from fire, for the building is not fireproof. The library should, at the earliest possible date, be housed in a structure of its own.

Science Hall.—Science Hall is small and well built, housing the laboratories for physical, chemical, and biological sciences. The laboratories are well equipped with working materials, but are overcrowded as the result of the rapid growth in school attendance and popularity of these courses. The quarters now used by the science departments should be enlarged. This building is also used for administrative purposes, the president, registrar, and secretary of the faculty being housed on the main floor of the building. These quarters also have become cramped because of the rapid expansion of the institution. An administration building should be provided.

Auditorium and gymnasium.—This building is satisfactory for its purpose, containing a large gymnasium fairly well planned and well equipped. An auditorium, 72 by 100 feet, lies above the gymnasium. It is well planned, and has a seating capacity for 600 to 700 people. The auditorium is entirely satisfactory.

Training school.—This building (H in the general plan) is unique in structure, containing a large central assembly room with classrooms arranged around it on three sides. Most of the classrooms, however, are small and incorrectly lighted. This building, also, was constructed at a time when little attention was paid to proper lighting and ventilation. The toilet facilities have recently been improved and may now be termed satisfactory, though small. The practice school building is overcrowded and should be rebuilt at an early date.

Industrial arts building.—This is a new fireproof structure measuring 130 by 135 feet. It is 3 stories high, including basement. It is a substantial building, constructed on scientific lines. Here are housed the departments of home economics, manual training, agriculture,

fine arts, and commerce. The building has cost the State $90,000. The equipment is complete, and includes among other things provision for work in sheet metal, forging, and foundry work.

Dormitories.—It is the policy of the normal school to provide home comforts for the young men and women who attend the school from a distance. There are two groups of dormitories for women and one group for men. The main dormitory for women is a satisfactory building, although not so well lighted as the new dormitories on the unit plan. The main dormitory accommodates about 135 persons, with 2 in each room. A group of new dormitories has been planned to be erected on the three sides of a large patio, or court, and two of them have been completed and in use for one and two years, respectively. These two units are now fully occupied and a third unit should be constructed at an early date. A feature of all the dormitories is the large sleeping porches provided for all lodging in them. This is necessary on account of the high temperature in this section of the State. It is an excellent and commendable feature.

The dormitory for young men is an old, 2-story structure, with basement. The building in no sense accords with modern ideas. It is neither sanitary nor practically arranged. Because of the rapid growth of the school, it has been necessary to lodge young men in insanitary basement quarters in this building and to make temporary arrangements for others in rooms in the main building and in the basement of the new industrial arts building. This is an unfortunate condition, and should be remedied at the earliest opportunity. Ample provision should be made by the legislature for a new building for this purpose.

Dining hall.—This is an inexpensive structure. It is daily filled to capacity, although not yet crowded. If the school continues to grow the next few years as it has done during the last decade, additional facilities must be provided.

Hospital.—The hospital building was not yet in use at the time of the inspection. It will be a valuable addition to the school plant.

President's residence.—The State has constructed an ample residence for the president of the school. It is substantial and commodious, and easily accessible from all parts of the grounds. It is a commendable feature of the school.

Rural practice school.—The normal school has entered into agreement with an adjoining rural-school district whereby it takes over the district's school, placing a well-prepared critic teacher in charge of it. The school plant is gradually being converted into a model, both as to building and grounds. It is used for practice and observation by all teachers in training who expect to work in rural communities.

The central heating plant.—This plant was constructed at a time when no one expected the school to expand as it has done in recent years, and the plant can no longer supply heat to all the buildings without straining the capacity of its two boilers. The heating plant is unsightly and lies in the center of the grounds in the most attractive part of the campus. It should be removed to another location and enlarged.

Recommendations for new equipment:

1. A new dormitory for men.
2. Administration building and library.
3. One additional unit dormitory for women.
4. Enlargement of the science building.

The most urgent need of the normal school is a well-constructed and commodious dormitory for men. It is impossible to find satisfactory lodging facilities in Tempe, and it is imperative for the State to make provision for the young men who attend the normal school. The building should be large enough to provide for future growth. It should make provision for shower baths, swimming pool, and recreation rooms, all of which would add materially to the health and comfort of the students. The gymnasium is used chiefly for the young women of the institution, the climate being such that the young men can get most of their necessary exercise out of doors. On account of the high temperature and dust accumulation, due to the dry climate, baths and swimming pools are essential to the cleanliness and comfort of the dormitory students.

Plans should be made for a combined administration and library building. This need not be large, but should be fireproof, to safeguard the school's valuable library and documents. Provision should also be made for another unit dormitory for young women, to be constructed during the next biennium. If this is not done, the dormitories for women will again become overcrowded. The science building can conveniently be enlarged by moving out the rear wall, making an extension of 20 to 30 feet, all of which can probably be done at an outlay of about $8,000.

The State should continue its liberal policy toward its normal schools. It is appreciated that the State is doing exceptionally well now, considering its wealth and population. Funds for the stated expansion could probably better be procured by means of a bond issue than through immediate legislative appropriation. These bonds could be issued and sold from time to time as buildings are imperatively required.

(B) NORTHERN ARIZONA NORMAL SCHOOL.

Maintenance.—The legislative appropriations and other incomes of the school for the fiscal year 1915–16, with corresponding outlays, are as follows:

Appropriations, etc., for year 1915-16		$60,071.50
Expenditures for year 1915-16:		
Pay roll—faculty	$30,763.20	
Pay roll—employees	9,340.60	
Repairs	666.21	
Agriculture	886.29	
Manual training	452.38	
Art	106.62	
Domestic science	265.74	
Power plant	6,573.89	
Administration	1,198.35	
Telephones	418.40	
Dining hall	495.85	
Light, etc	675.49	
Books, stationery, and printing	2,393.70	
Science	87.80	
Geography	86.94	
Disinfectants	412.90	
Insurance	1,119.20	
Water	1,632.27	
		57,625.82
Balance in treasury		2,445.68

This school, which is younger and smaller than the Tempe Normal School, receives a relatively smaller appropriation from the State. The growth of this institution also has been so rapid that added facilities are urgently required.

Physical equipment.—The approximate value of lands and buildings exceeds $300,000, divided as follows:

A. Lands, 120 acres at $350 per acre		$42,000
B. Buildings:		
Main building	$165,000	
Heating plant	19,000	
Dining hall	15,000	
Boys' hall	25,000	
Bury Hall	35,000	
Morton Hall	48,000	
New Hall	48,000	
		255,000
C. Equipment		10,000
Total value		307,000

Administration building.—This was erected orginally for other than educational purposes, which explains its unsuitable arrangement. The auditorium is entirely too small and badly arranged for

the 318 students assembled there. The seating capacity was intended for about 200. Under these conditions additional auditorium facilities are urgently needed. The administration building contains all the class rooms, the library, laboratories, and rooms of the president and faculty. The practice school also is housed in this building, in basement rooms, which are small, stuffy, and insanitary. The toilet facilities are inadequate and insanitary, forming a positive menace to health.

Central heating and lighting plant.—This is adequate, having been planned for future expansion. It will heat and light a much larger number of buildings than the school occupies at the present time.

Dining hall and kitchen.—The dining hall is an attractive, well-arranged structure, although taxed almost to its capacity. The adjoining kitchen, however, is small and crowded and impractically arranged. It should be enlarged and rearranged to save labor.

Dormitories.—The most commendable feature of the organization of the normal school is its three halls or dormitories for women. All of them are well planned, commodious, and comfortable. The sanitary appliances are modern and wholesome. Each hall is in charge of an experienced preceptress who looks after the welfare of the students in her charge. The system can scarcely be improved.

One hall, the oldest in the group, has been set aside as a dormitory for male students. The president and his family also make this their home, the president's wife acting in the capacity of housemother for the young men. It would unquestionably be better for all concerned if the State would build a home for the president, on the campus, as it has done at Tempe. In this way only can he be spared the petty annoyances and disturbances sure to arise occasionally in any dwelling used for lodging healthy young men. All four dormitories are now used to their capacity, so that in the near future additional facilities must be provided.

Grounds and farm land.—The school owns 120 acres of land, valued at $42,000. Much of this should be utilized by the rural and agricultural departments of the school. Up to the present time very little attention has been given this important phase of work.

Recommendations for needed enlargement.—Steps should be taken to enlarge the administration building by adding a wing on the west to complete the structure as originally planned. This would provide urgently needed classroom and gymnasium facilities. Attention is called to the fact that the school has no gymnasium of any kind. Since the north Arizona winters are long and the snow deep, it is practically impossible to give the students any physical exercise in the wintertime. A well-planned gymnasium would satisfy this de-

mand. It is essential that a separate training school be erected as soon as possible, since the quarters now used for this purpose are both insanitary and too crowded for the proper development of such a school. A rural practice and observation school is also needed and should be erected on the campus if possible.

These improvements are ranked below according to the urgency of the need:

1. Wing built to administration building to give additional classroom facilities, auditorium, and sanitary toilets.
2. Gymnasium to be included in the wing or to be erected as a separate building.
3. Training school. This is absolutely essential for the normal development of the school.
4. Rural practice and observation school to be erected on the campus because of the remoteness of other rural schools.

Section 9.—DEPARTMENT OF EDUCATION IN THE UNIVERSITY OF ARIZONA.

Present status.—The department of education in the University of Arizona is of recent origin, and is still in the process of organization. The department is organized for the purpose of training high-school teachers and special supervisors. There is no indication that the department has any desire to prepare teachers other than these, and that policy should be closely followed. In its present state of development the department is unable to occupy fully the field of secondary teacher training in the State. Facilities are too limited. The enrollment of university students in the department for the past years is shown in the following table:

TABLE 86.—*Enrollment in the department of education of the university.*

Years.	Men.	Women.	Total
1911-12	4	8	12
1912-13	6	14	20
1913-14	6	6	12
1914-15	10	34	44
1915-16	29	28	57
1916-17	35	47	82

The attendance, though small, shows encouraging growth. The number of graduates for 1915–16 was only 12, while the number of new high-school teachers required in the State was 65. The number of high-school teachers required in the State is increasing rapidly. The need will, no doubt, continue for some time to be met, as in the past, by procuring teachers prepared and certified in other States, but the university must and should prepare an increasing number of them.

The department of education occupies no special building of its own, but is quartered in the agricultural building. The class instruction is given by one full-time and one part-time instructor. The greatest hindrance to satisfactory instruction is the lack of a practice school. Until this want is met, little practical teaching can be done.

Future policy.—The State should take the necessary steps to provide the department of education in the university sufficient facilities to enable it to satisfy the demands upon it from over the State for well-equipped high-school teachers and special-subject instructors and supervisors. This demand will probably increase rapidly during the next few years to keep pace with the growth of the State's high-school system.

It is essential that the department of education provide training for professional men and women to administer and supervise the county and town systems of schools and to instruct as special-subject teachers and supervisors in the high schools. Such teachers should preferably be graduates of the normal schools, who, by reason of special fitness, should be encouraged to continue their preparation in the university courses. The department of education is not now equipped to do this work satisfactorily, but should be urged to take early steps to meet the demand.

It is essential also that the students pursuing educational courses have access to a well-organized practice school of secondary rank. Without such a teaching laboratory good results can not be expected. The State ought to make immediate provision for the establishment of a good secondary practice school.

Section 8.—SUMMARY OF RECOMMENDATIONS FOR THE NORMAL SCHOOLS AND DEPARTMENT OF EDUCATION IN THE UNIVERSITY OF ARIZONA.

1. The establishment of a single board of control for the two normal schools, to supplant the two local boards and the ex officio State board of education.
2. Restriction of the field of the State normal schools to preparation of elementary school teachers and instructors in special subjects for elementary schools until the demand for professionally trained elementary school teachers shall have been satisfied.
3. Restriction of the department of education in the university to preparation of high-school teachers and special supervisors.
4. Gradual elimination of the purely high-school students from the normal schools.
5. Organization of four-year prenormal departments within the normal schools for students coming from communities without high-school facilities who wish to prepare for normal-school entrance.

6. Discontinuance of the arrangement under which the Northern Arizona State Normal School offers high-school facilities for the children of Flagstaff.
7. Provision for further differentiation of courses of study in the normal schools, but particularly in the Northern Arizona Normal School.
8. Gradual increase in the normal-school entrance requirements to graduation from a four-year high-school course.
9. Standardization of the normal school courses as two and three year courses above high-school grade.
10. Provision for specialized departments in which to prepare rural teachers. Arizona being predominantly rural, the preparation of teachers for rural schools should be the principal function of these normal schools.
11. Division of the State into extension service districts, one for each normal school, within which each school shall organize extension service for the teachers of the State.
12. Enlarged material facilities and equipment in both normal schools to meet the rapid expansion of the institutions.
13. Establishment of a practice school of secondary grade as a working laboratory of the department of education in the University of Arizona.
14. Funds for the improvements contained above should be raised by an issue of State bonds.

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