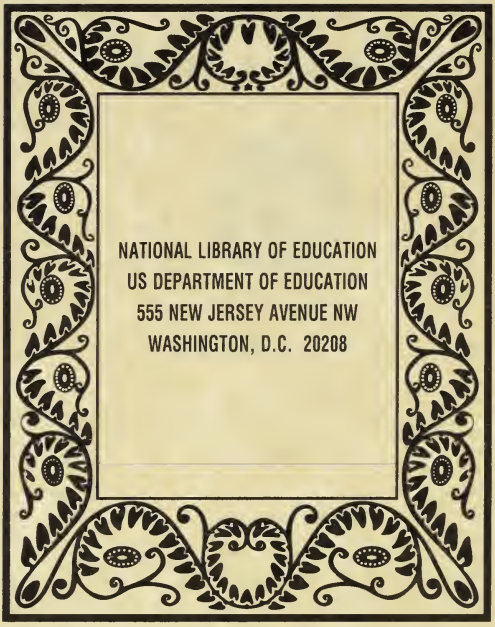

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BIENNIAL SURVEYS OF EDUCATION IN THE UNITED STATES

1938-42, vol. 1

1938–40
1940–42

IN TWO VOLUMES
VOLUME I

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BIENNIAL SURVEY OF EDUCATION IN THE UNITED STATES
1938-40

HIGHER EDUCATION

VOLUME I
CHAPTER III

FEDERAL SECURITY AGENCY
U. S. OFFICE OF EDUCATION

BIENNIAL SURVEY OF EDUCATION

IN THE UNITED STATES

1938–40

HIGHER EDUCATION
1936–1940

VOLUME I

CHAPTER III

By

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FEDERAL SECURITY AGENCY

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HIGHER EDUCATION, 1936–1940

HIGHER EDUCATION in the United States today may be likened to a well-organized mass movement of citizens, mainly composed young men and young women, guided by trained leaders, which largely is concerned with the more efficient and full participation of its members in the activities and responsibilities that constitute the life and trust of American democracy.

The center of this movement is found in the colleges of arts and sciences which direct the intellectual effort of nearly 700,000 individuals. On one side are the professional schools, responsible for almost 600,000 more, and on the other side are the university and college extension services involving approximately 300,000 additional persons. Back of all these are the graduate schools and related research departments which are responsible for more than 90,000 persons. These bodies together aggregate a total of nearly 1,650,000.

The principal source of this mass movement is found in the secondary schools with their enrollment of 6,700,000 students. Of these 1,120,000 were graduated in 1938 and according to estimates, 370,000 entered college in 1939.

In 1938 the number engaged in giving instruction to this body of college and university students included nearly 125,000 teachers, and the receipts for carrying on the educational and institutional activities reached over $500,000,000, while back of this was property valued at more than $2,500,000,000.

I. Statistics of Higher Education

As a partial background for the presentation of recent developments in institutions of higher education, data have been assembled from various sources that bear on enrollments, degrees, teaching staff, finances, and property of the institutions under consideration.

The statistics of the Office of Education for the years 1935–36 and 1937–38 cover the entire group of institutions of higher education numbering 1,690 for the latter year. The data summarized include all of the subjects indicated above.[1]

More specific data are given based upon the annual reports made by President Walters of the University of Cincinnati. These data

[1] Statistics of higher education, 1935–36. ch. IV, vol. II, Biennial survey of education (Bulletin 193) No. 2), and the corresponding chapter of the Biennial survey of education, 1937–38 (Bulletin 1940 No. 27 published by U. S. Office of Education.

cover approximately 650 institutions—all on approved lists. The data cover enrollments for the years 1936 to 1940, inclusive.[2]

This is followed by a brief summary of the 10-year growth in enrollments and degrees in 326 institutions based on a special report of the American Association of Collegiate Registrars.[3]

Statistics of the U. S. Office of Education

General Distribution of Enrollments.

The total regular resident attendance reported in 1937–38 by 1,690 universities and colleges was, 1,350,905. The corresponding figure for 1935–36 was 1,208,227, reported from 1,628 institutions.

In 1937–38 the ratio of college students to young people (ages 18–21) in the United States was 1 to 7.2. In 1900 the ratio was 1 college student to practically 25 youths (24.9).

The ratio of college students to secondary school students is as follows:

Year	*College students*	*Secondary school students*
1900	1	2. 9
1930	1	4. 4
1936	1	5. 3
1938	1	4. 9

The following tables show the distribution of attendance of students in arts and sciences and professional study on both graduate and undergraduate levels for 1937–38.

TABLE 1.—*Undergraduate level*

Undergraduate students	Colleges of arts and sciences		Professional schools		Total	Percent
	Enrollment	Percent	Enrollment	Percent		
Men	374,147	54. 28	381,203	65. 6	755,350	58. 84
Women	315,143	45. 72	199,981	34. 4	515,124	41. 16
Total	689,290	100. 00	581,184	100. 00	1,270,474	100. 00
Percent	54. 25		45. 75		100	

According to table 1, on the undergraduate level the percentage of men exceeded the percentage of women enrolled in colleges of arts and sciences by 8.56; the percentage of men exceeded the percentage of women enrolled in professional schools by 31.2; the percentage of men exceeded the percentage of women enrolled in both colleges of

[2] Walters, Raymond. Statistics of registration in American universities and colleges. School and Society: Dec. 18, 1937; Dec. 17, 1938; Dec. 16, 1939; and Dec. 14, 1940.

[3] Kerr, Fred L. A 10-year study of enrollments and degrees. Journal of the American Association of Collegiate Registrars, vol. 16, No. 1, October 1940.

arts and sciences and professional schools by 17.68; the percentage of the total number enrolled in colleges of arts and sciences exceeded the percentage of the total number enrolled in professional schools by 8.5.

TABLE 2.—*Graduate level*

Graduate students	Graduate arts and sciences		Graduate professional study		Total	Percent
	Enrollment	Percent	Enrollment	Percent		
Men	29,065	59.40	26,789	63.97	55,854	61.51
Women	19,852	40.60	15,095	36.03	34,947	38.49
Total	48,917	100.00	41,884	100.00	90,801	100.00
Percent	53.87		46.13		100	

According to table 2, on the graduate level the percentage of men exceeded the percentage of women enrolled in graduate arts and sciences by 18.8; the percentage of men exceeded the percentage of women enrolled for graduate professional study by 27.94; the percentage of men exceeded the percentage of women enrolled in graduate study of all types by 23.02; the percentage of the total number enrolled in graduate arts and sciences exceeded the percentage of the total number enrolled in graduate professional study by 7.74.

TABLE 3.—*Total enrollments*

All students	Arts and sciences		Professional study		Total students	Percent
	Enrollment	Percent	Enrollment	Percent		
Men	403,212	54.62	407,992	65.48	811,204	59.58
Women	334,995	45.38	215,076	34.52	550,071	40.42
Grand total	738,207	100.00	623,068	100.00	1,361,275	100.00
Percent	54.22		45.88		100	

According to table 3, on the basis of total enrollments, the percentage of men exceeded the percentage of women in the arts and sciences by 9.24; the percentage of men exceeded the percentage of women enrolled in professional study by 30.96; the percentage of men exceeded the percentage of women in the total number of students enrolled by 19.16; the percentage of arts and sciences students exceeded the percentage of students in professional study enrolled by 8.34.

Professional Education, Enrollments, and Degrees

Comparative statistics covering 11 professions or professional fields are available for the years 1933–34, 1935–36, and 1937–38. The figures are limited to the number of students enrolled and the number of degrees granted. The graduate and undergraduate figures are combined.

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The tables are ranked according to size of enrollments:

Education

Year	Enrollments	Degrees
1933–34	197, 411	32, 227
1935–36	212, 631	34, 224
1937–38	212, 651	39, 461

There has been a relatively small increase in the number of students of education between 1934 and 1938. The increase has been a little less than 7.7 percent. The increase in the number of degrees granted has been much greater, namely, more than 22 percent.

Commerce and Business

Year	Enrollments	Degrees
1933–34	64, 995	7,.504
1935–36	81, 352	8, 002
1937–38	100, 418	10, 758

This table shows a remarkable increase in enrollments in Commerce and Business and in the number of degrees granted. The percentage of increases in enrollments and degrees granted for the period covered are respectively, 54 and 43.

Engineering

Year	Enrollments	Degrees
1933–34	65, 406	12, 375
1935–36	74, 618	11, 623
1937–38	92, 724	11, 838

Enrollments in engineering have increased during the period indicated by nearly 42 percent while the number of degrees granted has declined by less than 4.3 percent.

Law

Year	Enrollments	Degrees
1933–34	36, 445	8, 577
1935–36	36, 791	7, 893
1937–38	37, 254	8, 415

Enrollments in law have increased during the period indicated by slightly more than 2 percent. The number of degrees granted has decreased by 2 percent.

Agriculture

Year	Enrollments	Degrees
1933–34	13, 377	2, 705
1935–36	19, 840	2, 745
1937–38	29, 171	4, 528

Enrollments in agriculture have more than doubled during the period indicated, or 118 percent, and the number of degrees granted has increased 67 percent.

Medicine

Year	Enrollments	Degrees
1933–34	24, 741	5, 507
1935–36	24, 706	5, 793
1937–38	25, 435	5, 716

Enrollments in medicine show a slight increase for the period, namely 2.8 percent, and the number of degrees granted show a slight increase, namely, about 2 percent.

Home economics

Year	Enrollments	Degrees
1933–34	10, 485	1, 863
1935–36	13, 871	2, 096
1937–38	17, 814	2, 633

Enrollments in home economics show a substantial increase for the period indicated, namely, about 70 percent, while the number of degrees granted likewise show a substantial increase, namely, more than 40 percent.

Theology

Year	Enrollments	Degrees
1933–34	11, 477	1, 637
1935–36	11, 935	1, 673
1937–38	12, 814	1, 766

Enrollments in theology show a gain of 11 percent over the period indicated, while the number of degrees granted show an increase of nearly 8 percent.

Pharmacy

Year	Enrollments	Degrees
1933–34	7, 813	1, 073
1935–36	8, 244	1, 303
1937–38	8, 306	1, 529

Enrollments in pharmacy show a gain of more than 6 percent for the period indicated and the number of degrees granted show an increase of 40 percent.

Nursing

Year	Enrollments	Degrees
1933–34	6, 330	111
1935–36	6, 398	374
1937–38	8, 216	480

Enrollments in nursing on the college level show a marked increase, approximately 30 percent for the period indicated, and the number of degrees granted show an increase of more than 300 percent.

Dentistry

Year	Enrollments	Degrees
1933–34	7, 554	1, 912
1935–36	7, 665	1, 772
1937–38	7, 527	1, 804

Both enrollments and degrees show a slight falling off during the period indicated. The decline in enrollments is almost negligible. The decline in degrees granted is a little more than 5 percent.

Other Professions

Year	*Enrollments*	*Degrees*
1933–34	42, 462	6, 716
1935–36	66, 528	7, 323
1937–38	71, 849	9, 733

Both enrollments and degrees show large increases over the period for all other professions combined. Enrollments have increased nearly 70 percent and the number of degrees nearly 45 percent.

Summarizing, we find that the percentage increases in enrollments in professional studies rank as follows: Agriculture, 118 percent; home economics, 70; commerce and business, 54; engineering, 42; nursing, 30; theology, 11; education, 7.7; pharmacy, 6; medicine, 2.8; law, 2. Only dentistry shows a very slight decline in enrollments.

As to percentage increases in the number of degrees granted in professional studies, we find the following ranking: Nursing, 300 percent; agriculture, 67; commerce and business, 43; pharmacy, 40; home economics, 40; education, 22; theology, 8; and medicine, 2.

The number of degrees granted in dentistry has declined 5 percent, in law 2 percent, and in engineering 4.3 percent.

Teaching Staff.

On the basis of 1,690 institutions, the full-time equivalent of 123,677 faculty members was reported in 1937–38. This figure excludes clerical and custodial help. In 1935–36 the corresponding figures for 1,628 institutions was 110,225.

Degrees.

The total number of degrees conferred in course in 1937–38 by 1,690 institutions was 189,503. Of these 164,943 were bachelor's degrees or equivalent, 21,628 master's or comparable first degrees in engineering, and 2,932 doctorate degrees. In addition to these, 1,800 honorary degrees were conferred.

In 1935–36, the corresponding figures for 1,628 institutions were as follows: Total number of degrees conferred in course, 164,127; bachelor's degrees or equivalent, 143,125; master's degrees, 18,302; and doctorate degrees, 2,700. In addition to these, 1,347 honorary degrees were conferred.

Finances.

Receipts.—The reports of 1,586 institutions for 1937–38 show total receipts of $522,108,017 for educational, general, and plant-extension purposes. Of this sum, 36 percent came from public sources and 34.3 percent from student fees. Receipts designated for the increase of

permanent funds reached the sum of $49,583,420, of which 83.5 percent went to privately controlled institutions.

In 1935–36, the reports of 1,541 institutions show a total income of $491,105,551 for educational, general, and plant-extension purposes. Of this sum, 37.4 percent came from public sources and 32.2 percent from student fees. Receipts for the increase of permanent funds reached $47,038,548, of which 77.9 percent went to privately controlled institutions.

Expenditures.—The total expenditures in 1937–38 of the 1,586 institutions for educational, general, and for plant-extension purposes was $545,657,300, of which $475,191,638 went for educational and general purposes. Of the latter sum, 11.9 percent was for administration and 58.3 percent for instruction and related activities. Of the $70,465,602 spent on capital outlays about three-fifths was reported by publicly controlled institutions.

In 1935–36 the total expenditures for all purposes in 1,540 institutions was $467,252,240. Of this $419,882,852 went for educational and general expenses, and of the latter figure 11.4 percent was spent for administration and 58.4 percent for instruction and related activities. The amount spent on capital outlays was $47,309,407, of which about two-thirds was spent by publicly controlled institutions.

Property and Funds.

The reports for 1937–38 covering 1,343 institutions show the total value of plant and plant funds to have been $2,556,074,571. Endowment funds were reported at $1,652,620,181. The total amount for funds, including annuity and loan funds reached $1,721,841,136.

In 1935–36, the reports from 1,362 institutions show the total value of plant and plant funds (physical property) to have been $2,359,418,489. Endowment funds were reported at $1,553,610,393. If annuity and loan funds are included, the total amount of funds reaches $1,623,105,600.

Statistical Studies of President Walters

The figures that are gathered as of November 1 of each year by President Walters embrace approximately 650 institutions of higher learning on approved lists. In certain tables of the compilations, the total enrollments of the same institutions are compared for 2 successive years, consequently accurate comparisons are available on that basis.

Total Enrollments (Resident).

The tables following show biennial comparisons for the years 1935–36 to 1939–40, inclusive. The comparisons are shown under three categories, namely, full-time enrollments, full-time and part-time enrollments, and freshman enrollments. The percentages have been added by this Office.

TABLE 4.—*Full-time enrollments*

(1) Classification	1936	1937	Percent of increase
57 Universities (public)	246,037	256,772	+4.4
50 Universities (private)	175,703	180,560	+2.8
372 Colleges	199,868	204,330	+2.3
49 Technological institutions	73,329	79,579	+8.5
65 Teachers colleges	54,087	54,588	+.9
Total	749,024	775,829	+3.6

(2) Classification	1937	1938	Percent of increase
55 Universities (public)	254,605	273,291	+7.3
50 Universities (private)	180,560	184,569	+2.2
355 Colleges	203,370	214,291	+5.4
42 Technological institutions	73,888	81,068	+9.7
67 Teachers colleges	54,775	64,587	+17.9
Total	767,198	817,806	+6.6

(3) Classification	1938	1939	Percent of increase or decrease
55 Universities (public)	268,844	275,458	+2.5
51 Universities (private)	187,196	184,766	−1.3
401 Colleges	229,177	236,915	+3.4
48 Technological colleges	91,596	97,361	+6.3
71 Teachers colleges	67,826	73,152	+7.9
Total	844,639	867,652	+2.7

(4) Classification	1939	1940	Percent of increase or decrease
57 Universities (public)	275,685	274,912	−0.3
53 Universities (private)	187,383	189,343	+1.0
414 Colleges	241,005	241,090	+.4
52 Technological colleges	100,488	102,742	+2.2
76 Teachers colleges	76,172	75,507	−.9
Total	880,733	883,594	+.3

Between 1936 and 1937 (table 4 (1)) there was an increase of 26,805, or 3.6 percent, in full-time enrollments for the 593 institutions listed. The largest increase was found in the publicly supported universities with 10,735, or 4.4 percent, and the smallest increase was found in the teachers colleges with 501, or 0.9 percent.

Between 1937 and 1938 (table 4 (2)) there was an increase of 50,608, or 6.6 percent, for the 569 institutions listed. The greatest increase was found in the publicly controlled universities with 18,686, or 7.3 percent, and the smallest increase in the private universities with 4,009, or 2.2 percent.

Between 1938 and 1939 (table 4 (3)) there was in increase of 23,013, or 2.7 percent, for the 626 institutions listed. The greatest increase was found in the colleges with 7,738, or 3.4 percent, and the smallest increase in the teachers colleges with 5,326, or 7.9 percent. During the same years a loss of 2,430, or 1.3 percent, was shown for the private universities.

Between 1939 and 1940 (table 4 (4)) there was an increase of 2,861, or 0.3 percent, for the 652 institutions listed. The greatest increase was shown in the technological institutions with 2,254, or 2.2 percent, and the smallest increase in the colleges with only 85, or 0.04 percent.

During the same years a loss of 773, or 0.3 percent, was shown for the public universities and 665, or 0.9 percent, for the teachers colleges.

TABLE 5.—*Full-time and part-time enrollments*

(1) Classification	1936	1937	Percent of increase or decrease
57 Universities (public)	354,364	371,072	+4.7
50 Universities (private)	311,623	327,888	+5.2
372 Colleges	270,460	279,963	+3.5
49 Technological institutions	96,682	101,459	+4.9
65 Teachers colleges	110,561	109,949	−.6
Total	1,143,690	1,190,331	+4.1

(2) Classification	1937	1938	Percent of increase
55 Universities (public)	367,419	396,450	+7.9
50 Universities (private)	327,888	335,206	+2.2
355 Colleges	275,127	294,152	+6.9
42 Technological institutions	92,324	102,309	+10.8
67 Teachers colleges	110,562	125,483	+13.5
Total	1,173,320	1,253,600	+6.8

(3) Classification	1938	1939	Percent of increase or decrease
55 Universities (public)	391,076	393,051	+0.5
51 Universities (private)	337,445	333,877	−1.1
401 Colleges	321,231	329,643	+2.6
48 Technological institutions	117,828	125,831	+6.8
71 Teachers colleges	132,359	133,533	+.9
Total	1,299,939	1,315,935	+1.2

(4) Classification	1939	1940	Percent of increase
57 Universities (public)	393,288	394,159	+0.2
53 Universities (private)	337,437	342,086	+1.4
414 Colleges	335,053	337,219	+.6
52 Technological institutions	130,106	134,055	+3.0
76 Teachers colleges	138,715	139,627	+.7
Total	1,334,599	1,347,146	+.9

Between 1936 and 1937 (table 5 (1)) there was an increase of 46,641, or 4.1 percent, in total enrollments, full time and part time for the 593 institutions listed. The largest increase was found in the private universities with 16,265, or 5.2 percent, and the smallest increase in the technological institutes with 4,777, or 4.9 percent. A loss of 612, or 0.6 percent, was shown for the teachers colleges.

Between 1937 and 1938 (table 5 (2)) there was an increase of 80,280, or 6.8 percent, for the 569 institutions listed. The largest increase was found in the colleges with 19,025, or 6.9 percent, and the smallest increase in the privately controlled universities with 7,318, or 2.2 percent.

Between 1938 and 1939 (table 5 (3)) there was an increase of 15,996, or 1.2 percent, for the 626 institutions listed. The largest increase was found in the colleges with 8,412, or 2.6 percent, and the smallest increase was found in the teachers colleges with 1,174, or 0.9 percent. A loss of 3,568, or 1.1 percent, was shown for the private universities.

Between 1939 and 1940 (table 5 (4)) there was an increase of 12,547, or 0.9 percent, for the 652 institutions listed. The largest increase was found in the private universities with 4,649, or 1.4 percent, and the smallest increase was found in the publicly supported universities with 871, or 0.2 percent.

TABLE 6.—*Freshman enrollments*

A. LIBERAL ARTS

(1) Classification	1936	1937	Percent of increase or decrease	(2) Classification	1937	1938	Percent of increase or decrease
50 Universities (public)	30,684	29,954	−2.4	51 Universities (public	34,600	35,715	+3.2
46 Universities (private)	19,223	19,293	+.4	49 Universities (private)	22,396	22,057	−1.5
368 Colleges	64,281	56,319	−12.4	360 Colleges	65,367	70,445	+7.8
47 Technical institutes	3,209	3,234	+.8	40 Technical institutes	2,546	3,103	+21.9
19 Teachers colleges	5,029	5,197	+3.3	16 Teachers colleges	5,150	6,182	+20.0
Total	122,426	113,997	−6.9	Total	130,059	137,502	+5.7

(3) Classification	1938	1939	Percent of increase or decrease	(4) Classification	1939	1940	Percent of increase or decrease
57 Universities (public)	40,389	41,472	+2.7	56 Universities (public)	38,430	37,916	−1.4
51 Universities (private)	22,931	22,351	−2.5	53 Universities (private)	23,238	23,805	+2.4
400 Colleges	73,503	75,571	+2.8	410 Colleges	76,840	74,349	−3.2
45 Technological institutions	5,015	5,369	+7.1	50 Technical institutions	4,585	4,720	+2.9
70 Teachers colleges	5,568	5,879	+5.6	74 Teachers colleges	5,249	5,282	+.6
Total	147,406	150,642	+2.2	Total	148,342	146,072	−1.5

Between 1936 and 1937 (table 6A (1)) there was a loss of 8,429, or 6.9 percent, in freshman enrollments in liberal arts in the 530 institutions listed. The greatest loss was found in the colleges with 7,962, or 12.4 percent, and the smallest loss was found in publicly controlled universities with 730, or 2.4 percent. The greatest increase in freshman enrollments was found in the teachers colleges with 168, or 3.3 percent.

Between 1937 and 1938 (table 6A (2)) there was an increase of 7,443, or 5.7 percent, in freshman enrollments in liberal arts in the 516 colleges listed. The greatest increase was shown in the colleges with 5,078, or 7.8 percent. The smallest increase was shown for the technological institutions with 557, or 21.9 percent. A loss of 39, or 1.5 percent, was shown for the privately controlled universities.

Between 1938 and 1939 (table 6A (3)) there was an increase of 3,236, or 2.2 percent, in freshman enrollments in liberal arts in the 623 institutions listed. The greatest increase was shown for the colleges with 2,068, or 2.8 percent. The smallest increase was in the teachers colleges with 311, or 5.6 percent. A loss of 580, or 2.5 percent, was found in the privately controlled universities.

Between 1939 and 1940 (table 6A (4)) there was a loss of 2,270, or 1.5 percent, in freshman enrollments in liberal arts for the 643 institutions listed. The greatest loss was found in the colleges with 2,491, or 3.2 percent. The greatest increase was found in the private universities with 2.4 percent.

TABLE 6.—*Freshman enrollments*—Continued

B. ENGINEERING

(1) Classification	1936	1937	Percent of increase or decrease	(2) Classification	1937	1938	Percent of increase or decrease
50 Universities (public)	9,296	10,129	+9.0	51 Universities (public)	10,964	10,558	−3.2
46 Universities (private)	3,323	3,812	+14.7	49 Universities (private)	3,560	3,524	−1.0
368 Colleges	1,218	1,432	+17.6	360 Colleges	1,361	1,515	+11.3
47 Technological institutions	10,894	11,910	+9.3	40 Technological institutions	12,024	12,718	+5.8
19 Teachers colleges	146	134	−8.2	16 Teachers colleges	40	61	+52.5
Total	24,877	27,417	+10.2	Total	27,949	28,376	+1.5

(3) Classification	1938	1939	Percent of increase or decrease	(4) Classification	1939	1940	Percent of increase
57 Universities (public)	11,001	19,344	+75.8	56 Universities (public)	11,450	11,691	+2.1
51 Universities (private)	3,897	4,435	+13.8	53 Universities (private)	4,436	4,909	+10.7
400 Colleges	1,311	1,480	+12.9	410 Colleges	1,521	1,775	+16.7
45 Technological institutions	11,901	12,479	+4.9	50 Technological institutions	13,252	13,895	+4.8
70 Teachers colleges	82	61	−25.6	74 Teachers colleges	50	51	+2.0
Total	28,192	37,799	+34.1	Total	30,709	32,321	+5.2

Between 1936 and 1937 (table 6B (1)) there was an increase of 2,540, or 10.2 percent, in freshman engineering enrollments taken from among the 530 colleges listed. The technological institutions in this group showed an increase of 1,061, or 9.3, and the publicly controlled universities showed an increase of 833, or 9 percent. The privately controlled universities showed an increase of 489, or 14.7 percent. The figures for the other groups are relatively insignificant.

Between 1937 and 1938 (table 6B (2)) there was an increase of 427, or 1.5 percent, in freshman engineering enrollments taken from among the 516 institutions listed. During this period both the publicly controlled and privately controlled universities showed a loss of 406, or 3.2 percent, and 36, or 1 percent, respectively, while the technological group showed an increase of 694, or 5.8 percent.

Between 1938 and 1939 (table 6B (3)) there was an increase of 9,607, or 34.1 percent, in freshman engineering enrollments taken from among the 623 institutions listed. The publicly supported universities showed the greatest increase with 8,343, or 75.8 percent. The increases in the other groups were relatively small.

Between 1939 and 1940 (table 6B (4)) there was an increase of 1,612 or 5.2 percent, in freshman engineering enrollments taken from among the 643 institutions listed. The numerical increases for the principal groups were relatively small, as follows: 241, 473, 254, and 643, following the order of the table.

TABLE 6.—*Freshman enrollments*—Continued

C. AGRICULTURE

(1) Classification	1936	1937	Percent of increase or decrease	(2) Classification	1937	1938	Percent of increase or decrease
50 Universities (public)	4,837	4,614	−4.6	51 Universities (public)	4,014	4,228	+5.3
46 Universities (private)	464	510	+9.9	49 Universities (private)			
368 Colleges	243	186	−23.5	360 Colleges	383	453	+18.3
47 Technological institutions	4,011	4,124	+2.8	40 Technological institutions	3,531	3,883	+10.0
19 Teachers colleges	47	60	+27.7	16 Teachers colleges	1	1	
Total	9,602	9,494	−1.1	Total	7,929	8,565	+8.0

(3) Classification	1938	1939	Percent of increase or decrease	(4) Classification	1939	1940	Percent of increase or decrease
57 Universities (public)	4,890	5,371	+9.8	56 Universities (public)	5,636	5,260	−6.7
51 Universities (private)	527	520	−1.3	53 Universities (private)	629	619	−1.6
400 Colleges	391	464	+18.7	410 Colleges	413	295	−28.6
45 Technological institutions	4,203	4,513	+7.4	50 Technological institutions	4,859	4,416	−9.1
70 Teachers colleges	83	82	−1.2	74 Teachers colleges	82	57	−30.5
Total	10,094	10,950	+8.5	Total	11,619	10,647	−8.4

The discussion of the section on agriculture is limited to the publicly controlled universities and the technological institutions which include colleges of agriculture.

Between 1936 and 1937 (table 6C (1)) there was a decrease of 108, or 4.6 percent, in freshman enrollments in agriculture in the publicly controlled universities. A small increase of 113, or 2.8 percent, was shown for the technological institutions.

Between 1937 and 1938 (table 6C (2)) there was an increase of 214, or 5.3 percent, in freshman enrollments in agriculture in the publicly controlled universities, and also an increase of 352, or 10 percent, in the technological group.

Between 1938 and 1939 (table 6C (3)) there was an increase of 481, or 9.8 percent, in freshman enrollments in agriculture in the group of publicly controlled universities and an increase of 310, or 7.4 percent, in the technological group.

Between 1939 and 1940 (table 6C (4)) there was a decrease of 376, or 6.7 percent, in freshman enrollments in agriculture in the group of publicly controlled universities and a decrease of 443, or 9.1 percent, in the technological group.

Between 1936 and 1937 (table 6D (1)) there was an increase of 6,625, or 33.4 percent, in freshman enrollments in commerce in the 530 institutions listed. The largest increase was found in the privately controlled universities with 5,131, or 71.4 percent.

TABLE 6.—*Freshman enrollments*—Continued

D. COMMERCE

(1) Classification	1936	1937	Percent of increase	(2) Classification	1937	1938	Percent of increase or decrease
50 Universities (public)	8,100	8,920	+10.1	51 Universities (public)	8,116	7,866	−3.0
46 Universities (private)	7,188	12,319	+71.4	49 Universities (private)	8,853	8,233	−7.0
368 Colleges	2,583	3,108	+20.3	360 Colleges	3,383	3,744	+10.7
47 Technological institutions	1,823	1,930	+5.9	40 Technological institutions	1,914	2,125	+11.0
19 Teachers colleges	139	181	+30.2	16 Teachers colleges	162	171	+5.6
Total	19,833	26,458	+33.4	Total	22,428	22,139	−1.4

(3) Classification	1938	1939	Percent of increase or decrease	(4) Classification	1939	1940	Percent of increase or decrease
57 Universities (public)	8,726	8,564	−1.9	56 Universities (public)	7,940	7,355	−7.4
51 Universities (private)	8,136	8,024	−1.4	53 Universities (private)	8,260	8,068	−2.3
400 Colleges	4,021	4,200	+4.5	410 Colleges	3,856	3,922	+1.7
45 Technological institutions	2,083	2,126	+2.1	50 Technological institutions	2,358	2,247	−4.7
70 Teachers colleges	519	660	+27.2	74 Teachers colleges	389	420	+8.0
Total	23,485	23,574	+.4	Total	22,803	22,012	−3.5

Between 1937 and 1938 (table 6D (2)) there was a decrease of 289, or 1.4 percent, in freshman enrollments in commerce in the 516 institutions listed. The largest loss was found in the privately supported universities with 620, or 7 percent. The largest increase was found in the college group with 361, or 10.7 percent.

Between 1938 and 1939 (table 6D (3)) there was an increase of 89, or 0.4 percent, in freshman enrollments in commerce in the 623 institutions listed. The largest loss was found in the publicly supported universities with 162, or 1.9 percent. The largest increase was found in the college group with 179, or 4.5 percent.

TABLE 6.—*Freshman enrollments*—Continued

E. TEACHERS[1]

(3) Classification	1938	1939	Percent of increase or decrease	(4) Classification	1939	1940	Percent of decrease
57 Universities (public)	2,936	3,337	+13.7	56 Universities (public)	3,426	3,114	−9.1
51 Universities (private)	1,545	1,493	−3.4	53 Universities (private)	2,202	1,996	−9.4
400 Colleges	3,163	3,522	+11.3	410 Colleges	3,394	2,978	−12.3
45 Technological institutions	699	673	−3.7	50 Technological institutions	1,269	1,126	−11.3
70 Teachers colleges	21,775	22,547	+3.5	74 Teachers colleges	24,371	22,875	−6.1
Total	30,118	31,572	+4.8	Total	34,662	32,089	−7.4

[1] Figures available for 1938 through 1940 only.

Between 1939 and 1940 (table 6D (4)) there was a loss of 791, or 3.5 percent, in freshman enrollments in commerce for the 643 institutions listed. The greatest loss was found in the publicly supported universities with 585, or 7.4 percent. The largest increase was found in the college group with 66, or 1.7 percent.

Between 1938 and 1939 (table 6E (3)) there was an increase of 1,454, or 4.8 percent, in freshman students in education for the 623 institutions listed. The largest increase was found in the teachers college group with 772, or 3.5 percent. The largest decrease was found in the privately controlled universities with 52, or 3.4 percent.

Between 1939 and 1940 (table 6E (4)) there was a decrease of 2,574, or 7.4 percent, in freshman students in education for the 643 institutions listed. None of the groups listed showed any increase. The greatest loss was found in the teachers college group with 1,496, or 6.1 percent.

Summary.—Gains in freshman enrollments are shown as follows for the totals for the years indicated:

Liberal arts, 1937–38, 1938–39; Engineering, 1936–37, 1937–38, 1938–39, and 1939–40; Agriculture, 1937–38, 1938–39; Commerce, 1936–37, 1938–39; Teachers, 1938–39.

Losses in freshman enrollments are shown as follows for the totals for the years indicated:

Liberal arts, 1936–37, 1939–40; Agriculture, 1936–37, 1939–40; Commerce, 1937–38, 1939–40; Teachers, 1939–40.[4]

Rank of Institutions by Enrollments.

The rank of the larger institutions according to enrollments with 10,000 or more is shown in the following tables.

There are now 11 universities in this country with full-time resident enrollments of more than 10,000. (Table 7A.)

With respect to full-time students, it will be noted that the University of California has stood at the head of the list during the years indicated. In 1940, the enrollment of the university for the first time was divided by President Walters between the Berkeley and Los Angeles units. Notwithstanding this division, the Berkeley unit still stands at the head of this list. Columbia University which was second in 1937 is now the third, having been passed by Minnesota.

In 1938, the University of Washington passed the 10,000 mark and in 1940, the University of Texas passed it.

There are now 23 universities in this country with total enrollments of resident students (full-time and part-time) of more than 10,000. (Table 7B.) During the years indicated, New York University has headed the list with a total of 35,623 for 1940. Columbia follows in second place, with the University of California at Berkeley in third

[4] Note table covers only half of entire period covered by other groups.

place. Of the universities listed, New York University, Columbia University, the College of the City of New York, Hunter College, and Brooklyn College, five in all, have resident full- and part-time enrollments of more than 10,000. The aggregate enrollment for these New York institutions is 108,854.

In 1938 Harvard University passed the 10,000 mark of resident students full- and part-time, and in 1940 the University of California at Los Angeles and Pennsylvania State College passed the same mark.

TABLE 7.—*Rank of institutions by enrollment (10,000 resident students or more)*

A. FULL-TIME RESIDENT STUDENTS

Institution	1937		1938		1939		1940	
	Enrollment	Rank	Enrollment	Rank	Enrollment	Rank	Enrollment	Rank
1	2	3	4	5	6	7	8	9
University of California	22,955	1	24,809	1	26,004	1	[1] 16,946	1
							[2] 11,049	11
Columbia University	14,683	2	14,980	3	14,211	3	14,384	3
University of Minnesota	13,691	3	15,148	2	15,301	2	15,167	2
University of Illinois	13,647	4	13,872	5	13,510	4	13,351	4
New York University	13,377	5	14,257	4	12,745	6	12,585	6
Ohio State University	12,744	6	13,148	6	13,231	5	12,890	5
University of Michigan	10,952	7	11,475	7	12,098	7	11,952	7
University of Wisconsin	10,864	8	11,438	8	11,268	8	11,397	8
University of Washington			10,393	9	10,129	9	10,014	10
University of Texas							10,091	9

B. ALL RESIDENT STUDENTS (FULL- AND PART-TIME)

New York University	37,255	1	38,744	1	36,880	1	35,623	1
Columbia University	28,335	2	28,446	3	27,628	3	26,529	2
University of California	26,923	3	29,727	2	31,932	2	[1] 20,028	4
College of the City of New York	21,915	4	23,252	4	22,775	4	21,970	3
Northwestern University	20,705	5	18,397	5	18,136	5	19,085	5
Ohio State University	16,285	6	17,106	6	17,064	6	17,019	6
University of Illinois	16,085	7	16,534	8	16,157	7	16,491	7
University of Texas	15,513	8	16,669	7	15,294	9	13,742	12
University of Southern California	14,490	9	15,487	9	15,207	10	15,196	9
University of Michigan	14,438	10	15,332	10	15,793	8	15,736	8
University of Wisconsin	14,415	11	15,054	11	14,778	11	14,780	10
University of Pennsylvania	14,154	12	14,590	12	14,602	12	14,275	11
University of Washington	13,785	13	14,319	13	13,673	13	13,564	13
Hunter College, City of New York	12,226	14	12,205	15	11,560	17	11,392	18
Wayne University	11,718	15	12,159	16	11,917	16	11,995	16
Brooklyn College	11,404	16	12,882	14	13,410	14	13,340	14
University of Cincinnati	11,135	17	11,855	17	11,525	19	11,689	17
Boston University	11,061	18	11,319	19	11,529	18	10,604	20
University of Pittsburgh	10,993	19	11,741	18	12,014	15	12,404	15
University of Chicago	10,296	20	10,646	21			10,425	21
Western Reserve University	10,134	21	10,224	22	10,108	21		
Harvard University			11,137	20	10,571	20	10,339	22
University of California, Los Angeles							11,049	19
Pennsylvania State College							10,069	23

[1] Berkeley.
[2] Los Angeles.

Statistics of the American Association of Collegiate Registrars

Recently the American Association of Collegiate Registrars published a 10-year study of enrollments and degrees. This is an extension of a similar study made 4 years ago, covering a period of 6 years.

The present study has comparable data based on 326 institutions of which 92 are universities, 167 liberal arts colleges, 18 junior colleges, 31 teachers colleges, and 18 are professional and technical schools. One of the most interesting portions of this study is the tabulation of enrollments and degrees by years, beginning in 1929–30 and closing 1938–39.

In order that a general view of the changes that have taken place during this period of 10 years may be shown, a summary table is given herewith. The yearly data has been eliminated except for the last year.[5]

TABLE 8.—*Enrollments and degrees with increases since 1929–30*

Type of institution	Men	Percent of 10-year gain	Women	Percent of 10-year gain or loss	Total	Percent of 10-year gain	Degrees	Percent of 10-year gain
1	2	3	4	5	6	7	8	9
Universities (92)	276,397	+31.00	134,150	+19.96	410,547	+27.17	65,216	+37.43
Liberal arts colleges (167)	40,405	+16.56	64,895	+12.27	105,400	+13.88	16,337	+22.21
Junior colleges (18)	4,999	+93.80	4,603	+59.83	9,602	+75.89		
Teachers' colleges (31)	14,025	+59.21	22,090	−0.54	36,115	+16.43	4,952	+81.13
Professional and technical schools (18)	29,546	+28.88	6,587	+83.70	36,133	+27.90	5,199	+39.05
Total	365,472	+30.50	232,325	+16.14	597,797	+24.51	91,700	+36.27

Considering the totals, the percentage growth of men enrolled is nearly double the growth in the number of women enrolled. The grand total shows an increase of nearly 25 percent during the 10-year period. The total number of degrees granted shows more than 36 percent increase for the period. The percentage increase of men enrolled in teachers' colleges is worthy of notice. The enrollment of women shows a small loss. The percentage increase of attendance in the junior colleges has been larger than for any other group.

National Youth Administration Aid to College Students [6]

The number of youth participating in NYA college programs between the years 1926 and 1940, inclusive, is shown herewith:

Year ended	*Undergraduate*	*Graduate*	*Total*
April 1936	128,055	7,395	135,450
April 1937	140,699	5,416	146,115
April 1938	99,144	2,598	101,742
April 1939	110,068	2,899	112,967
April 1940	122,778	2,980	125,758

[5] Kerr, op. cit., p. 5–7.

[6] Figures supplied by the NYA.

Future of College Enrollments.

Students of population trends have been calling attention for a number of years to the probable future of college enrollment. Provost Smith of New York University who is continuously studying this question has pointed out the following:

> Population trends may be compared to a tide. In some places the movement of expansion has reached high tide; in a few it is already on the ebb; in the Southwest it still comes in but at a slackening pace. In some regions the change from high to low will be very moderate; in others it will resemble the tide at St. John's, New Brunswick. The enrollment tide has been running out in the elementary grades for several years; it is near flood in the high schools; colleges and universities are still uncertain as to the turn of the tide, since a few years will intervene before high tide. The force of the tide in its time element varies geographically; it varies qualitatively; it varies according to the concentration of population. Yet it is clear that institutions of higher learning in a few years will dip into a diminishing reservoir of high-school graduates, for now there are some 1,700,000 fewer boys and girls in the elementary schools of the United States.[7]

Losses in undergraduate full-time enrollments may be overcome in part by increased attendance at evening classes, continuation classes, and graduate schools and other advanced courses. Professional standards are being raised in nearly every profession stimulated by professional organizations and by State Boards. Such action doubtless will increase the demand for professional education.

It has been pointed out that if enrollments increase, the influx will tend to bring in students of lower intellectual caliber, consequently the colleges in the absence of other agencies, will have to function as custodians of youth as well as educational institutions. At present it appears that fully 15 percent of college students lack the ability to succeed with present college requirements. Even though the American Youth Commission has found that two-fifths of all high-school graduates would be justified by ability in going to college, yet only about half of this group enter college.[8]

II. The Colleges

The Junior College

The Growth of the Junior College.[9]

The junior college is passing through a period of extraordinary growth. This refers especially to the separately organized junior college. In 1930 there were 429 with an enrollment of 67,627. In 1935 there were 521 with an enrollment of 107,807. In 1940–41 the number of junior colleges reached 610 with enrollments for 1939–40

[7] Smith, Rufus D. The tide of youth. Educational record, 21:54, January 1940.

[8] Reports from the Fourteenth Annual Institute for Administrative Officers of Higher Education, The University of Chicago, July 12, 1939.

[9] The main source of the data given in this section is the *Directory of Junior Colleges for 1941*, compiled by Walter Crosby Eells and Priscilla Winslow, Washington, D. C.

given at 236,162, which is 20.5 percent greater than for the year 1938–39 with 196,710. These enrollments include those attending evening classes open to adults. Dr. Eells and Miss Winslow report an increase during the past decade of 40 percent in the number of junior colleges and 219 percent in their enrollment.

The 610 junior colleges may be classified by type as follows: 1-year, 1; 2-year, 561; 3-year, 6; 4-year, 41; and 5-year, 1. Of the total, 261, or approximately 40 percent, are privately controlled.

On the basis of the enrollment figures for 1939–40, the following summary shows the number of junior colleges according to frequencies in enrollment groups as follows:

TABLE 9.—*Distribution of frequencies of enrollments in junior colleges* [1]

Enrollment	Number of colleges			Enrollment	Number of colleges		
	Total	Public	Private		Total	Public	Private
0–49	55	6	49	900–999	5	3	2
50–99	122	33	89	1,000–1,999	28	23	5
100–199	149	58	91	2,000–2,999	6	5	1
200–299	74	30	44	3,000–3,999	7	7	0
300–399	61	30	31	4,000–4,999	2	2	0
400–499	44	28	16	5,000–5,999	0	0	0
500–599	22	18	4	6,000–6,999	1	1	0
600–699	7	7	0	7,000–7,999	1	1	0
700–799	7	3	4	8,000–8,999	1	1	0
800–899	3	2	1				

[1] Directory of Junior Colleges, 1940.

The largest enrollment in junior colleges is found in San Bernardino Valley Junior College, Calif., with 8,689 students. The high enrollment of this college as well as in seven other institutions in California is caused in part by special students who take advantage of the extensive adult education classes available. The largest regular enrollment is found in the Los Angeles City College with 7,205 attending.

The average enrollment in 1940 for all junior colleges reporting enrollment figures was 397. For publicly controlled colleges, it was 652; for privately controlled 202. The number of freshmen in all institutions was 105,663, the number of sophomores 57,128, and the number of special students 73,371; the percentages are respectively 44.7, 24.2, and 31.1.

The number of instructors has increased during the past year. In 1938–39, there were 6,341 full-time and 3,495 part-time instructors. In 1939–40 there were 8,602 full-time and 4,943 part-time instructors in 600 junior colleges. The average in 1939–40 was 22.4 instructors as against 18.1 in 1938–39.

The accredited status of the junior colleges is indicated for 533 institutions. Those accredited by the regional accrediting associations are classified as follows:

New England Association of Colleges and Secondary Schools	8
Middle States Association of Colleges and Secondary Schools	15
Southern Association of Colleges and Secondary Schools	64
North Central Association of Colleges and Secondary Schools	45
Northwest Association of Secondary and High Schools	12
By State department of education or other State agency	389
Nonaccredited	77
Total	610

The total number on accredited lists is 533 of which 144 are on regional association lists. Those on State department or other State lists number 389. The nonaccredited junior colleges number 77.

The junior college curriculum has expanded greatly in attempting to meet the requirements of professional schools, the senior colleges, as well as the special needs of local communities. This is shown in the several preparatory and professional curricula, as well as terminal or semiprofessional curricula, offered by a great many junior colleges.[10]

The preparatory and professional curricula include liberal arts, agriculture, business, dentistry, engineering, home economics, journalism, law, medicine, music, nursing, pharmacy, religion, science, and teaching.

The terminal or semiprofessional curricula include general cultural, general agriculture, agriculture, forestry, architecture, art, business education (general), business education (salesmanship), business education (secretarial), engineering and technology (general), aviation engineering, electrical engineering, mechanical engineering, home economics, journalism, librarianship, medical secretarial, music, nursing, physical education, recreational leadership, social service, and teaching.

American Association of Junior Colleges.

As an aid in solving the problems of the junior colleges, in stimulating their growth, and in making them more efficient as a part of our national education system, there was organizd in 1920 the American Association of Junior Colleges. For 17 years the Association developed rapidly under its secretary, Doak Campbell of the George Peabody College for Teachers, who carried on his secretarial duties along with his other educational work. By 1938 it was found desirable to set up permanent headquarters and to employ a full-time staff to carry on the growing activities of the Association. Washington was chosen as the location of the head office and Walter C. Eells of Stanford University became the full-time executive secretary.

[10] American junior colleges. Edited by Walter Crosby Eells. First edition 1940. American Council on Education, Washington, D. C., p. 516–17.

Since 1928 the Association has printed annually a *Junior College Directory* and it published in 1940 for the first time a large handbook entitled *American Junior Colleges* which is a companion volume to the fourth edition of *American Universities and Colleges* published by the American Council on Education.

At the present time the Association is conducting a series of exploratory studies bearing on the terminal function of the junior college. This has been made possible by the General Education Board which granted the Association $25,000 for the purpose. The studies are being conducted under a commission of 11 persons.

The first of the studies completed is entitled "The Literature of Junior College Terminal Education," by Lois E. Engleman and Walter C. Eells. This annotated bibliography contains 1,800 references.

The 4-Year College

Notwithstanding the long period of experiment and change through which college programs have been passing within the past decade or longer, it is possible to observe the characteristics of these programs to detect evolving curriculum patterns, as well as certain trends.

Horizontal Division of College Curricula.

College programs in the arts and sciences include in general two types: First, those whose 4-year curricula are divided on a horizontal basis of 2-year units, and second, those whose curricula are more or less integral in their organization at least from an external point of view.

The practice of horizontally dividing the college program dates back about 40 years to the time of the beginning of the junior college movement. By 1935 the programs or curricula were found to be divided horizontally in more than 200 colleges, while today there are at least 264 of a total of 758 colleges, or about 34 percent that are thus organized.

These plans are given according to the classifications named in the college catalogs as follows:

Colleges having lower divisions and upper divisions	127
Colleges following the freshman-sophomore and junior-senior year plan	75
Colleges organized on a junior college and senior college basis	41
Colleges having a general college unit	15
Colleges making the dividing line between the freshman year and the last 3 years	6

In certain institutions more than one of these plans may be found in combination. In some cases the general college unit is a part of the lower division but separate from the junior college. It may also be independent of the junior college from the standpoint of general

administration. In a number of the smaller colleges, the lower and upper divisions operate without a division of administrative authority.

The location of these colleges according to the groups indicated above may be of interest. Of the 127 colleges operating with lower and upper divisions, 47 are in the North Central area, 43 in the West, 23 in the South, and 14 in the East.[1]

Of the 75 colleges with definite freshman-sophomore and junior-senior year plans, 28 are in the South, 23 in the East, 20 in the North Central area, and 4 in the West.

Of the 41 colleges divided as junior colleges and senior colleges, 24 are in the North Central area, 12 in the South, 3 in the West, and 2 in the East.

Combining all colleges that have some definite form of horizontal division, we find 99 in the North Central area, 68 in the South, 51 in the West, and 40 in the East.

Comparing these figures with those of the 491 colleges that do not feature a definite horizontal division, we find that 129 colleges of the latter type are in the East, 126 in the North Central area, 121 in the South, and 15 in the West.

The proportions of both types of general organization by regions is as follows:

Region	*Horizontal plan*	*Nonhorizontal plan*	*Percentage—ratio*
North	99	126	44:56
South	68	121	36:64
East	40	126	24:76
West	51	15	77:23

According to the percentage-ratio the horizontal plan greatly dominates in the West; it affects more than half of the colleges in the South, less than half of those in the North, and only about one-fourth of those in the East.

An investigation made in 1938 by Laura-May Spain, editorial assistant of the Association of American Colleges, based on a study of the catalogs of 657 institutions, brought out facts bearing on the horizontal divisions existing in these institutions. It was found that for this smaller group, 220, or 33 percent, had lower divisions in their curricula. The Spain classification was made on the basis of private, church, and State control. Of the 152 privately controlled colleges, 64, or 42 percent, have lower divisions; of the 404 church colleges, 103,

[1] The States included in the boundaries indicated above are as follows:
North Central: Alaska, Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Nebraska, North Dakota, Ohio, South Dakota, West Virginia, and Wisconsin (13).
Western area: California, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, Washington, and Wyoming (9).
East: Connecticut, Delaware, District of Columbia, Maine, Massachusetts, New Hampshire, New Jersey. New York, Pennsylvania, Rhode Island, and Vermont (11).
South: Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, Missouri, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia (15).

or 25 percent, have lower divisions; and of the 101 State institutions, 53, or 52 percent, have lower divisions. It was also found that among these colleges with lower divisions, 19 grant the degree of associate in arts, 12 grant a junior certificate, and 8 a certificate.

Comprehensive examinations are required in 23 cases for promotion from the lower to the upper division of the college in addition to successful completion of the first 2 year's work.

> These institutions having separate requirements for the first 2 years of college have required courses in the various curriculum groups; namely, the humanities, the natural sciences, and mathematics, and the social sciences. For example, in the State institutions, 100 percent of the colleges for men, colleges for women, and coeducational colleges require the students to take courses in the humanities, 100 percent of the men's colleges and women's colleges have courses required in the natural sciences, mathematics, and social sciences, and 92 percent of the coeducational colleges have required courses in natural science and mathematics and 94 percent in social science. The percentage of courses in the humanities, natural sciences, mathematics, and social sciences in the privately controlled institutions and church-related colleges is almost equally high. Especially is this true with respect to the humanities group in the curriculum.[12]

With regard to the colleges that are not organized on a definite horizontal basis, it is the tendency still to prescribe a large percent if not all of the work of the freshman and sophomore years. The selection of majors and minors by the end of the sophomore or the beginning of the junior year prepares the way for specialized courses chosen from group or divisional electives and completed during the senior year.

The college program as it stands today is no longer limited to one curriculum. In the majority of institutions two to five curricula are offered. This is not only noticeable in the large colleges but also in the small privately controlled or church colleges. It is also evident that a great many colleges are directing their programs toward immediate vocational outlets for their students.

Evolving Patterns of College Curricula.

Although the 4-year college has been for many years in a state of flux, it is also true that several curriculum patterns have definitely evolved. According to Chen,[13] six patterns or plans may be recognized.

First pattern.—The first pattern eliminates as far as possible the consideration or the statement of its requirements in mere quantitative terms such as credit hours, lectures, etc. Typical among the features of this pattern are: The introduction of new methods of

[12] Spain, Laura-May. Curriculum divisions in the colleges. Bulletin of the Association of American Colleges, November 1939. P. 453–56.

[13] Chen, Theodore Hsi-En. Developing patterns of the college curriculum in the United States. Southern California Monograph No. 10. The University of Southern California Press, Los Angeles, Calif., 1940.

——— Current methods of approach in the reconstruction of the college curriculum. Journal of the American Association of Collegiate Registrars, October 1940. Pp. 18–26.

teaching; bringing into closer personal relationships the students and teachers; laying the responsibility of education upon the student; judging of the student by demonstrated ability as shown through comprehensive or general examinations.

This pattern may be illustrated in its various aspects by the plans in operation at such colleges as Harvard, Swarthmore, Stanford, Vassar, Bowdoin, Antioch, Dartmouth, and others.

Second pattern.—The colleges following the second pattern seek to overcome the evils of narrow departmental specialization by breaking down rigid lines of separation between certain departments either through administrative or educational reorganization. Typical of those colleges with a broader divisional organization are Carleton College, Northfield, Minn., and Reed College, Portland, Oreg. It is claimed for this type of pattern that: The problems of the division can be isolated and discussed; duplication and overlapping of courses in the several departments can be avoided; students can select their majors on a broader basis; and broad introductory courses can be utilized to advantage.

Typical of the colleges with broad interdepartmental courses are Columbia College, Columbia University, New York, and Colgate University, Hamilton, N. Y. It is claimed that well-organized interdepartmental courses encourage close relationship between departments; assist the student toward obtaining a synthesis of knowledge; meet the need of the average citizen rather than the scholar only; give a preview of the fields of knowledge as well as of real life leading the student to a more intelligent choice of a field of specialized interest.

Third pattern.—The third pattern has for one of its objectives that of bringing unity into the subject matter of the curriculum. This plan was foreshadowed more than 10 years ago in the Experimental College of the University of Wisconsin under the leadership of Dr. Alexander Meiklejohn.

At present the college best representing this pattern is St. John's College, Annapolis, Md. This pattern emphasizes classical studies with the cultivation of the intellect as the principal objective. Use is made of 100 masterpieces which cover the great cultural periods of history.

Among the advantages claimed for this pattern is its definiteness of aim. It avoids those studies bearing on the transitory needs of the day, giving attention especially to "first principles" and "permanent truths" as illustrated by the great civilizations of the past. Discipline of the mind obtained through rigorous thinking is esteemed of more value than amassing knowledge concerning modern and contemporary life, and really constitutes the best preparation for meeting the problems of the present day.

Fourth pattern.—The college of the fourth pattern organizes its curriculum on the basis of the content of broad fields of knowledge which has been organized by leaders in the principal fields of scholarship. Typical of this pattern are the following: The College of the University of Chicago, the General College of the University of Florida, and the College of Letters and Science of the University of Southern California.

In general the colleges following this pattern carry out a number of the reforms indicated in the patterns already described. These are combined in a single plan whereby the student gains largely through his own power and initiative a knowledge and understanding of the broad fields of knowledge. The grounding of such plans is found in the programs of general studies which prepare the way for specialization. (*See section on* General Education in Colleges.)

Fifth pattern.—The pattern of this type of college includes a definite acquaintance with those problems of the student that bear on contemporary life rather than on learning in the academic sense. Great attention is given to student guidance in schools of this pattern such as the General College of the University of Minnesota and Stephens College, Columbia, Mo.

On the basis of special investigations of the backgrounds and the personal and social relations of selected groups of students and of graduates, important curriculum revisions have been made. (*See discussion under section on* General Education in Colleges.)

Sixth pattern.—The sixth pattern attacks the problem of education from the standpoint of the individual student, giving careful consideration to his unique character and development. Among the colleges representing this pattern are Bard College, Annandale-on-Hudson, N. Y., Sarah Lawrence College, Bronxville, N. Y., Bennington College, Bennington, Vt., and Black Mountain College, N. C.

> The vital curriculum cannot be a Procrustean bed; it must be worked out for every student according to his or her individual needs and interests. Unity in the curriculum is to be achieved, not by means of external devices or new courses of instruction, but through the intrinsic motivation of the learner who sees the significance of his studies in relation to his purposes. The curriculum may be reorganized in terms of either broad fields of knowledge or functions of living, but unless the individual learner sees the significance of his studies in relation to his personal plans and problems, reorganized subject matter may remain as foreign to the experience of the learner as the departmental offerings of the traditional college.[14]

[14] Journal of the American Association of Collegiate Registrars, October 1940. Pp. 24–25.

North Central Association Study of Curriculum and Instruction.

A comprehensive study bearing on the college curriculum and college instruction was published in 1940 [15] by the North Central Association of Colleges and Secondary Schools. The study deals with certain practices carried on by 276 of its member institutions as well as opinions of staff members as to educational policies affecting the curriculum as well as instruction.

The principal topics considered include: Theories and points of view relating to the curriculum; extramural influences affecting it; the content of the curriculum, including general education, advanced education, professional and vocational education; the organization of the curriculum—its organization for instruction as well as for administration, also curriculum requirements for degrees; provisions for articulation, integration, and concentration in the curriculum, including high school and college as well as the undergraduate and graduate program, the individual student and the curriculum, the institutional concern for good teaching, and the institutional evaluation of curriculum and instruction.

These topics are backed by a series of statistical tables based largely on data derived from 276 member institutions of the Association.

Subjects of Tables

1. Courses or fields of work offered at the level of general education by various percentages of 276 accredited institutions in the North Central Association.
2. Subjects that should be prescribed in a program of general education, according to the judgments of more than 50 percent of 106 faculty members and administrators.
3. Relative emphasis upon certain subject-matter offerings in general education by public and private institutions.
4. Average semester hours offered in various subjects at the freshman and sophomore levels by junior colleges and other institutions in the North Central Association.
5. Range of semester hours offered in various subjects at the freshman and sophomore levels by institutions in the North Central Association.
6. The percentage of 233 colleges and universities in the North Central Association that offer advanced work in the subjects indicated.
7. Comparison of percentages of public and private institutions offering advanced undergraduate education in various subjects.
8. A comparison of the percentage of institutions that offer advanced instruction in certain subjects and the percentage in which these offerings are adequate for an undergraduate major.
9. Percentage of institutions offering instruction leading to the masters' degrees in subjects indicated.
10. Subjects in which work leading to the doctorate is offered by 10 percent or more of the institutions granting the degree.

[15] Brumbaugh, A. J., *and* Haggerty, Wm. J. Curriculum and instruction in higher education. The North Central Association Quarterly, 15: 196–230, April 1940; also October 1940.

11. Subjects arranged in order of percentage of institutions offering them at various levels.
12. Percentage of institutions that offer vocational curricula.
13. The percentage of the 98 institutions in the North Central Association having any form of divisional organization that report the maintenance of specific types of divisions.
14. Percentages of colleges and universities in the North Central Association that maintain particular colleges or schools as a part of their administrative organizations.
15. The percentage in the North Central Association that require courses in the departments indicated in the freshman and sophomore years.
16. The number of degrees granted upon the completion of undergraduate work in liberal arts above the junior college level in 228 higher institutions in the North Central Association.
17. The percentage of institutions that provide for their faculty members various books and periodicals in the field of higher education.

Findings.—A selection of the principal findings of the study are given herewith as quoted or derived from the summary of the study:

Not more than half of the accredited institutions in the North Central area provide a basic curriculum in general education.

At the level of general education most of the institutions offer courses that are definitely departmentalized. Comparatively few have succeeded in unifying their departmental courses into courses that are either interdepartmental in nature or of the broad introductory or survey type.

The subjects that are most generally considered basic for purposes of general education are: English composition, history, English literature, foreign language, psychology, physical education, and economics.

Most institutions offer a sufficiently wide range of courses to provide an ample opportunity for securing basic general education, but the opportunities in this respect vary from one institution to another.

There is a marked differentiation among institutions offering the masters' and doctors' degrees as to the fields in which students may specialize at these higher levels.

The provisions for professional education, at least in some fields, are widely distributed among all institutions that are members of the Association.

There is evidence of a growing dissatisfaction among the college faculty members and administrative officers with the system of recording achievements in time units. * * * There is also evidence of increasing interest in evaluating student progress and achievement by comprehensive examinations or other procedures that render unnecessary the arbitrary and uniform system of credit hours.

The departmental plan of organization predominates in the institutions that are members of the Association.

The divisional plan, comprising either departments grouped into divisions, or a divisional organization without any departments at all, is found in about one-third of the institutions.

* * * The private institutions on the whole tend to grant more different degrees than do those under public control.

Approximately three-fifths of the institutions require that more than one-third of the work for the bachelor's degree must be taken from courses designated primarily for juniors and seniors.

There is an awareness of the need for articulation between the college program and the previous high-school preparation in these institutions.

A comparatively small group of institutions (one-third) depend on counseling and guidance to achieve integration in the programs of students.

A significant percentage, though not a majority, of the institutions have available objective data concerning the abilities of students in their respective student bodies.

Various types of incentives designed to motivate students to maintain a high level of scholastic achievement, the most common of which are honor societies and honor lists, are reported by a number of institutions.

By far the largest percentage of institutions use some system of letter grades in recording student achievement. Approximately one-fourth of the institutions using the letter scale attach a point value to each letter.

Various means are employed to judge the teaching effectiveness of faculty members.

The more common forms of recognition of teaching competence are: Increase in rank or salary, leaves of absence for further study, appointment to administrative committees, and financial aid to attend meetings of learned societies.

Approximately four-fifths of the institutions have committee or staff members charged with the specific responsibility of making continuous study for the purpose of improving their program.

Approximately half the institutions report that they regard research by faculty members to be a function of the institution. Only a little more than one-third, however, allocate any time of the members of the faculty to research activities.

About one-third maintain special research agencies.

In general it may be said that the study contains much material of value which can serve as norms of comparison in connection with institutional surveys.

General Education in Colleges.

In view of its rapid growth, the general college movement perhaps warrants a more extended discussion of the subject than is given in parts of the preceding section.

The key institutions that have had great influence on the development of the general college include the University of Wisconsin Experimental College, the General College of the University of Minnesota, the General College of the University of Florida, and the College of the University of Chicago.

In a recent investigation [16] it was found that at least 53 institutions were carrying on a program of general education in some form. Of these, 35 reported sufficiently to make possible the formulation of definite statements as to objectives, practices, and trends. The institutions included the University of Akron, Alabama College,

[16] The Thirty-Eighth Year Book of the National Society for the Study of Education, Part II—General Education in American College. Prepared under the direction of Alvin C. Eurich, Professor of Education Stanford University. 1939. Bloomington, Ill., Public School Publishing Co. P. 171–93.

Birmingham-Southern College, Brown University, Bucknell University, University of Buffalo, University of Cincinnati, Colgate University, Colorado College, Columbia College, Drew University, Fenn College, Goucher College, Grinnell College, Hamline College, Harvard University, Hendrix College, Howard College (Ala.), State University of Iowa, Judson College, Knox College, Lawrence College, University of Louisville, Morningside College, Muskingum College, Ohio State University, Reed College, University of Rochester, Simmons College, Southwestern College, Swarthmore College, Union College, Wayne University, Wells College, and Yale University.

Since the publication of the Yearbook referred to, a number of other general colleges have been organized.

Because of the different types of general college, it is not easy to supply a definition that is entirely satisfactory. Eurich, however, calls attention to the following causes that are back of the general college:

> (1) a dissatisfaction with higher education as now organized; (2) a reaction against an overemphasis upon specialization in the college; (3) a new body of information regarding the nature of a college and the characteristics of the student body; (4) the current youth problem in society; and (5) a deepened desire to do something that will make education more effective than it has been in the past, in the hope that future generations will be able to solve better such social problems as those that baffle present-day society.
>
> The essential feature of a program of general education is a systematic way of developing courses rather than by adding courses according to the desires and wishes of professors.[17]

In a word, the problem is to provide unity of the curriculum in the midst of an increasing diversity of subject matter in its many forms, and to give greater attention to the realities of modern life without neglecting the past, and to furnish a curriculum or program that will be effective for the individual student.

MacLean has pointed out that general education cannot be conconsidered a popular movement in an evangelical sense. It is rather a return to a more integrated or unified program of study based on a knowledge of life.

The approach to general education in the college is made first, through a careful study of human personality; second, by giving students a better insight into their present-day relations to family as well as to future family and social relationship; third, by vocational orientation, involving the wise preparation of youth for jobs and helping them to make the right vocational choices; fourth, through a better understanding of the training of youth for active participation in community life.[18]

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[17] Ibid., p. 6, 7, 8.

[18] MacLean, Malcolm S. Our stake in general education. North Central Association Quarterly, October 1940, p. 171–73.

The question of general education in the college for some time has assumed the form of a national debate. President Hutchins raised the issue of the return to the original sources of our intellectual heritage, and along with the reforms at the University of Chicago he has given his backing to the reorganized classical program of St. Johns College under President Barr. Other leaders such as Dewey and Bode feel that general education may be gained best through the experimental method and through experience. General education is gained through solving the different problems of life. President Wriston of Brown University however, challenged the general college when he said,

> Today the proponents of general education, which has become the new hypnotic slogan, talk about "the facts necessary for every-day living," but they do not dare talk in terms of values. The spiritual life goes on wholly unrecognized, and cultural values appear only by inference and by apology. Many aspects of the urge to promote general education are self-defeating. Until we sincerely believe that life is more than meat and the body than raiment, we will continue to be defeatists in our fundamental thinking and defensive in our fundamental procedures.[19]

Definition of Objectives.

In view of the different theories and viewpoints that are concerned with the objectives of the colleges, there has been an increasing need for clear statements of objectives on the part of college authorities. This is evident from a study of present-day catalogs compared with those issued 20 years ago. In a catalog study made by this Office in 1920, it was found that few institutions made any statement regarding their objectives especially in the arts and sciences, and these colleges were largely limited to a few denominational or privately controlled institutions. A recent examination of catalogs shows that many colleges and universities are giving considerable space to the objectives of their schools in order that students may gain a preliminary understanding of the programs available. In many of these statements, there is valuable information for the guidance of the student as to preparation for life as well as how particular programs of the college may assist in this preparation.

This recent tendency toward printing the statements of college aims also has been pointed out in the North Central Association study referred to in the preceding section. In that study, a number of typical statements of aims have been brought together and are fairly indicative of the interest of the colleges in giving prospective students a more adequate understanding of their programs.

[19] Wriston, Henry M. Cultural self-reliance and the democratic process. From address before American Council on Education, May 22, 1940.

Expression Arts in the Colleges.

During the past few years, there has developed an increased interest in the various arts of expression. For many decades music and art have been accepted as worthy of a place in the college program and a large proportion of colleges provide curricula and courses of study leading to degrees in these fields. Music and art have been well established and are almost universally recognized as valuable means of education.

Although public speaking and dramatic arts have long had a place in college life and college programs, their importance has greatly increased within the last 20 years or so, partly because of changing social conditions which have tended to give youth more free time for various forms of self-expression, and because of the influence of the radio which has featured along with its musical programs an increasing amount of debate and discussion of public questions as well as dramatic presentations.

Speech and the dramatic arts.—A recent study made in this Office shows that the usual courses in public speaking have been absorbed by departments of speech. In 758 colleges and universities, it was found that 400, or more than half, offered one or more courses in speech. These courses usually include speech technique, essentials of public speaking, argumentation and debate, English phonetics, not to speak of other advanced courses that command professional or graduate credit.

In the majority of institutions courses are offered in the dramatic arts as a part of the program of speech departments. Including separate departments of dramatic arts, there were found 418 institutions that offered one or more courses such as acting, theater technique, drama, play production, play directing, and in some of the larger departments the courses included make-up, costume design, stagecraft, theatrical architecture, history of the theater, pantomime, pageantry, religious dramatics, and high-school dramatics. These courses do not take into account the large amount of dramatic activity in many college theatres which is mainly extracurricular.

Courses in radio.—More recent has been the extraordinary growth in the number of institutions giving courses in radio. In 1938 there were found to be 310 institutions offering such courses and in 1940 this number had increased to more than 500. Among these courses are found the following: General course in radio, radio program planning and production, education by radio, radio script writing, radio announcing, radio speech, radio dramatics, radio music, radio station management, radio advertising, technical courses, television, radio law, and radio as a social institution.[20]

[20] Power, Leonard. College radio courses. Revised list. Published in 1940, by the Federal Radio Education Committee with the cooperation of the U. S. Office of Education. Mimeo.

The extent of interest in radio instruction is shown in the fact that 38 or more institutions of college grade offered summer radio courses in 1940. Radio courses are usually given as a part of the work of the departments of education, speech, dramatic arts, music, journalism, or engineering.

The influence of radio no doubt has been an important factor in stimulating public speaking and speech arts as well as the drama. The influence of speech and drama has also reciprocally affected radio education. College students of the present generation are doubtless the first to have the great opportunity of participating in a large and varied program of subjects relating to artistic expression.

Summary.

Some of the more important developments in the field of college education are summarized as follows:

1. The junior college is still in a state of extraordinary growth. It is broadening the scope of its services in the preparatory and preprofessional fields as well as in the terminal or semiprofessional fields.
2. More than one-third of standard 4-year colleges are built on the structure of a horizontal division of the curriculum with two 2-year divisions. This type of organization prevails in the western colleges.
3. The majority of the standard 4-year colleges not utilizing the horizontal-division plan combine divisional and departmental organization more or less integrated for the entire 4 years through systems of distribution and concentration.
4. The desire to reach the needs of the individual appears in the development of general education on the one hand and the organization of tutorial and counseling procedures that favor independent study on the other hand.
5. The experiences of the four typical general colleges have greatly stimulated the development of general colleges throughout the country.
6. Because of the increasing complexity of college programs, the college catalog is used to a greater extent as a means for the exposition of the educational objectives as well as theories which support the college program.
7. The vast majority of colleges offer more than one curriculum. The curricula include professional and preprofessional programs of various types. The vocational outlook for the student is not overlooked.
8. The expressive arts have gained full recognition in college programs of study.

III. Professional Schools

Standards in Professional Schools

Since 1936 there has been increased activity on the part of a number of organizations that accredit professional schools. New accrediting agencies have been set up and others have been reorganized.

Engineering.

In 1937, the Engineers' Council for Professional Development published its first list of engineering schools with approved curricula. The main objective of this organization is "To formulate criteria for colleges of engineering which will insure to their graduates a sound educational background for practicing the engineering profession." [21]

The Eighth Annual Report of the Engineers' Council for Professional Development shows 125 institutions that have one or more curricula approved by the Engineers' Council for Professional Development. The number of accredited curricula by subjects are as follows:

Subjects	*Number of curricula*	*Options*
1. Aeronautical engineering	12	25
2. Agricultural engineering	3	1
3. Architectural engineering	14	2
4. Ceramic engineering	9	----
5. Chemical engineering	39	----
6. Civil engineering	75	----
7. Electrical engineering	112	----
8. Electrochemical engineering	1	----
9. Fuel technology	1	1
10. General engineering	6	----
11. Industrial engineering	19	9
12. Mechanical engineering	104	----
13. Metallurgical engineering	29	6
14. Mining engineering	31	----
15. Naval architecture and marine engineering	3	1
16. Petroleum engineering	14	6
17. Sanitary engineering	5	23

A special report entitled "The Present Status and Trends of Engineering Education in the United States," was published in 1939, in which is included the data collected in connection with the surveys of the 679 curricula referred to. This report was made possible by a grant of $10,000 given in 1938 by the Carnegie Foundation for the Advancement of Teaching. Prepared under the direction of Dugald C. Jackson, Emeritus Professor in the Massachusetts Institute of Technology, this factual material with interpretation covers nearly every aspect of the conditions relating to engineering education at the present time.

[21] Sixth Annual Report of the Engineers' Council for Professional Development. October 1940.

Aims and scope of engineering curricula defined.—In 1939, the Society for the Promotion of Engineering Education appointed a committee of 12 on aims and scope of engineering curricula to consider questions relating to the undergraduate engineering curriculum. The chairman of the committee was Dean H. P. Hammond of the School of Engineering of Pennsylvania State College. Among the matters considered were the extension of the engineering curriculum to 5 or 6 years in length and the desirability of a preliminary period of study in liberal arts colleges before admission to engineering schools.

Following the careful study of these and other related questions, the committee presented its report which was published in the *Journal of Engineering Education* for March 1940.

The report lists several of the current problems with which the engineering schools are faced and considers a number of controlling factors. Of special interest are the conclusions and recommendations formulated by the committee, which are quoted herewith:

> *Summary of conclusions and recommendations.*—Engineering colleges serve diverse functions and prepare men for a wide range of technical, administrative, and executive responsibilities. Technological education should, therefore, be kept widely available, and engineering colleges must continue to serve a correspondingly wide variety of purposes. They should not limit their aim to preparing young men for professional registration and practice.
>
> The present flexible arrangement of 4-year undergraduate curricula followed by postgraduate work will better meet the needs served by engineering education than will longer undergraduate curricula of uniformly prescribed duration.
>
> Engineering colleges could operate more effectively if briefer and more directly practical forms of technological education were provided by other types of institutions.
>
> Advanced training for the higher technical levels of engineering should be included in the general program of engineering education but should not become its dominating aim.
>
> Undergraduate curricula should be made broader and more fundamental through increased emphasis on basic sciences and humanistic and social studies. This will require greater efficiency in the use of the student's time to be gained by pruning to the essentials of a sound educational program.
>
> Some of the advanced technical subject matter now included in undergraduate curricula should be transferred to the postgraduate period where it may be pursued with a rigor consistent with preparation for engineering specialization.
>
> There are advantages in the parallel development of the scientific-technological and the humanistic-social sequences of engineering curricula. The present integrated type of program extending throughout the entire undergraduate period should therefore be preserved.
>
> No measures taken with respect to engineering education should limit the freedom that now exists for experimentation and change.

Medicine.

In 1939, the American Medical Association published its comprehensive survey of medical education in the United States, covering the period 1934 to 1939.

This survey or study grew out of the social and economic disturbances resulting from the depression which were held responsible in part for retarding the progress that had been taking place in medical education since the early nineties. According to Dr. Ray Lyman Wilbur, Chairman of the Council on Medical Education and Hospitals of the American Medical Association [22]—

> Funds for this survey were authorized by the Board of Trustees of the American Medical Association. Every approved medical school was visited, each department was studied and its staff consulted and all of the institutions concerned were rerated. A score or more had failed to advance or had lapsed in their standards sufficiently to warrant either placing them on probation or withdrawing approval.
>
> As the study progressed marked variations were observed in the strength of departments within a school; great disparities were noted in the support of different parts of the curriculums in some medical schools as contrasted with others. While in the aggregate there had been a striking increase in the amount of research work done by members of the faculties, in the number of clinical teachers with academic status and in the size of libraries, at the same time there had been an abnormal growth in the size of the student bodies in institutions without sufficient clinical, laboratory, or financial resources for their proper instruction. The university hospital had become expensive and had provided insufficient patients for the instruction of more than a small part of the student body. There resulted an increasing tendency to use the patients in public clinics and public hospitals for teaching purposes. There must be a constant growth of endowment funds and of other resources for our medical schools if they are to progress.
>
> * * * The accrediting activities of the Council, which were the first in professional education and which have been supported from the beginning by the medical profession, make it possible to keep not only the personnel of the medical schools and hospitals but also the general medical profession in touch with developments in medical education. The physician realizes, as no one else can, the disasters, personal or communal, that flow from ignorance and improper or incomplete preparation, and these can be prevented only by insistence upon high standards of medical education. The American medical profession has assumed a large part of the responsibility of assuring adequate education for those who care for the sick. There are now sufficient medical schools for the instruction of physicians to meet the needs, as far as can be ascertained, of the public. It is true that a number of students every year fail to obtain admission to existing institutions, but these are for the most part border-line students and those least likely to render useful service in the practice of medicine.

Theology.

On June 1938, the first list of accredited theological institutions was published by the Commission on Accrediting Theological Seminaries and Theological Colleges. The list includes 46 institutions.[23]

Dentistry.

On May 1938, the Dental Educational Council of America voted to discontinue the rating of dental schools because of the failure of

[22] Medical Education in the United States, 1934–1939. Chicago, Ill., American Medical Association, 1940. From Foreword.

[23] Ratcliffe, Ella B. Accrediting in higher education. School Life, 24: 155–56, February 1939.

present ratings to be of sufficient significance. In its place a new organization has been created, The Council of Dental Education of the American Dental Association, which will in the future attempt a new survey of dental education.[23]

Centenary of Dental Education.[24]—In 1840, the legislature of Maryland chartered the Baltimore College of Dental Surgery. The school is the first of its kind in the world. About the same time the National Association of Dentists was organized and in 1839 the first journal of dentistry appeared. This was the *American Journal of Dental Science.* These events were commemorated in Baltimore, Md., March 18–20, 1940.

In the early days, dentistry was merely a craft. Dentists learned through apprenticeship training. The United States has been foremost in the development of one of the most useful professions and most helpful to man.

There are now in this country 39 dental schools, not including 5 located in Canada.

Pharmacy.

In 1937, the American Council on Pharmaceutical Education, Incorporated, set up standards of accrediting. As a result of the 62 applications for inspection, 54 schools were accepted for the new list.

Architecture.

The Association of Collegiate Schools of Architecture in 1917 began to look into the matter of the maintenance of standards by its member institutions. As a result, a survey is now in progress. It has been decided by the Association that no new members will be accepted nor no action will be taken against weaker members until the findings of the survey are available.[25]

General Education and Professional Education

As general education has been given critical consideration on the part of leaders in the colleges of arts and sciences, it has likewise been given consideration by leaders in the several professions. The professions that have given it attention are medicine, law, engineering, architecture, business administration, nursing, and social work.

McGrath has observed that these leaders are generally agreed on the importance of general education as a preparation for professional service. It has come to be recognized among other things that those who have had the advantages of "a broad general experience" are better able to appraise their own professional activities in the light of their cultural experience. It has also been found that the records

[23] Ratcliffe, Ella B. Accrediting in higher education. School Life, 24: 155–56, February 1939.
[24] Blauch, L. E. Dental centenary celebration. School Life, 25: 261, June 1940.
[25] Ratcliffe, Ella B. Accrediting professional schools. School Life, 25: 174–75, 178, March 1940.

of students backed by a general education show them to have equal ability in carrying on their professional programs as compared with those students who have given more time to specialization in fields basic to a profession.

General education helps to overcome the tendency to emphasize verbal mastery of facts often common with those taking professional studies. It develops better ability to think and teaches the student to bring things together in proper relation.[26]

Bigelow has also pointed out the basic importance of general education to teacher education. Referring to the findings of the National Survey of the Education of Teachers, it appears that the Survey not only stressed general education for teachers, but also "urged a more functional approach, more direct attention to student needs—physical, social, and esthetic, as well as intellectual, more concern with contemporary problems, and more experimenting with survey courses and other integrating devices." [27]

Instruction in Higher Education

Until about 10 or 15 years ago, little or no attention had been given to the improvement of college teaching. Teachers colleges and university departments of education provided a variety of courses for the training of elementary and secondary school teachers as well as for school administrative officers. It had been assumed more or less that the college teacher was qualified to teach college students if he knew his subject or if he had been successful in research.

With the rapid growth of colleges and universities many problems arose relating to the improvement of class instruction as well as to the better understanding of various phases of administration. As a result, there began to be offered in a few centers courses on college teaching, and later, courses on various aspects of college and university administration. At the present time, there are at least 21 institutions that offer one or more courses relating to college education. These institutions with the courses offered as for 1939–40 include:

Stanford University:
The American college and university.
The junior college.
The junior college curriculum.
The improvement of college teaching.
Seminar in higher education.
University of California:
The junior college. A practicum. (Berkeley.)
Problems in junior college administration (Los Angeles).

[26] McGrath, Earl J. General Education in Professional Education. *In* General Education in the American College. P. 219–21.
[27] Bigelow, Karl W. General Education and Teacher Education. *In* General Education in the American College. P. 257–75.

University of Southern California:
Junior college education.
Introduction to college teaching.
Problems of deans of men.
University of Colorado:
Problems of higher education.
Yale University:
Problems of American higher education.
Religion in higher education.
Seminar in religion in higher education.
Teaching of religion to college graduates (Divinity School)
Seminar in college education.
Loyola University, Chicago:
History of secondary and higher education (Graduate School).
University of Chicago:
Financial administration of higher education.
Organization and administration of universities and colleges.
The junior college.
Problems in student personnel work in colleges and universities.
Administration of student personnel work in colleges and universities.
Apprentice teaching in science at the junior college level.
Special methods of teaching physics I at the junior college level.
Special methods of teaching physics II at the junior college level.
Apprenctice teaching in physics at the junior college level.
Apprentice teaching in social sciences on the junior college level.
University of Illinois:
The junior college.
The American college.
Indiana University:
Research in higher education.
State University of Iowa:
Seminar in college administration (Personnel management).
University of Kentucky:
Problems in college teaching.
Trends in higher education.
Research problems in higher education.
Bureau of source materials in higher education.
Boston University:
College education in the United States (for college teaching).
University of Michigan:
Current problems in higher education.
Personnel problems in high school and college.
Seminar on personnel problems in high school and college.
Current studies of athletics in colleges and universities.
Teaching of English in colleges.
University of Minnesota:
The problems of college education.
Higher education in the United States.
Curriculum and instruction in higher education.
Student personnel work in college and university.
Administration in higher education.
Measurement and evaluation in higher education.
Professional education of teachers.
Instruction and administration in teacher-training institutions.

University of Missouri:
Junior college administration.
University of Nebraska:
The junior college (Public junior college).
Columbia University (Teachers College):
History of higher education in America (two courses).
Problems of staff personnel.
Administration of student relations programs in institutions of higher education.
Purposes and educational policies of institutions of higher education.
The organization and functioning of institutions of higher education.
The appraisal of institutions of higher education.
Admission and classification of students.
Democratic procedures in college administration.
Observation and practice in administration (college).
Preliminary seminar. Problems of higher education.
Research in administration of higher education.
Research on the functions of higher education.
Curriculum and teaching problems in higher educational institutions.
Organization and administration of adult education.
Administration of teachers colleges.
The development and organization of programs for the professional education of teachers.
Research in the education of teachers.
Research in the nature and extent of graduate work in the education of teachers.
Education of teachers in Europe.
Student personnel administration.
Introduction to student personnel work and its techniques.
Administration of student-relations programs in institutions of higher education.
Relation of student personnel officers to problems of health, discipline, and religion.
Relation of student personnel officers to problems of admission, orientation, and student activities.
Relation of student personnel officers to problems of housing and office organization.
Field work in student personnel administration.
Techniques of work with student groups.
Student residence halls.
Problems in student personnel administration.
Research in techniques of personnel work.
Vocational and educational guidance.
Vocational testing.
Analysis of vocational activities.
Placement and employment office procedure.
Field work in guidance and personnel.
Individual development and guidance.
Research in guidance and personnel.
Improvement of reading in secondary school and college.
Improvement of reading for college students and adults.
Field work in the improvement of reading.
Curriculum problems in professional schools for teachers.
Practice teaching in normal schools and colleges.

Columbia University (Teachers College)—Continued.
Practice in administration of normal schools and teachers colleges.
Curriculum and teaching problems in higher educational institutions.
Proseminar problems in the development of general education in secondary schools and colleges.
Administration of athletics in schools and colleges.
The humanities in general education.
Practice teaching in Latin in normal schools and teachers colleges.
Administration of health and physical education in colleges and universities.
Administration of athletics for women in schools and colleges.
New York University:
Improvement of instruction in teachers colleges and normals schools.
Laboratory school, departments of teacher preparation.
Special work in junior colleges, colleges, and universities.
College education—junior college.
Improvement of teaching in colleges and universities.
College and university administration.
Financial problems of colleges and universities.
Determination of policies of higher education.
Apprentice work in college teaching.
Ohio State University:
Higher education I. II.
Theory and administration.
Curricula and method of higher education.
Teacher training.
Achievement tests in higher education.
Pennsylvania State College:
The junior college.
Problems in collegiate education.
University of Washington:
The junior college.
College problems.
Guidance and counseling.
Improvement in college teaching.

The 122 courses included in the foregoing list may be roughly classified as follows: College teaching 29, Personnel and student relations 27, General problems 19, Administration 16, the Junior college 11, General seminars 4, Measurements 3, Curricula 3, Finance 2, Religion 2, College athletics 2, History of higher education 2, Adult education 1, Buildings 1.

IV. University and College Extension Study

In addition to the services of the graduate schools, the colleges of arts and science and the professional schools, an increasing service is being rendered by higher educational institutions through extension and correspondence courses. During the period covered by this report we find a great increase in the number of people who participate in some form of home instruction or extension study. The figures are shown for the years 1934, 1936, and 1938.

Year	Enrollments
1933–34	208, 507
1935–36	251, 469
1937–38	295, 351

This table shows that the 1936 enrollment was more than 20 percent greater than for 1934. It also shows that the 1938 enrollment was more than 41 percent greater than for 1934.

General Extension Courses

A large number of extension courses are offered in addition to those given in university colleges and other types of "down-town" schools. These extension courses are not only given on the main campus in certain cases, but also in different centers of the State. Usually such classes are given in local high schools at times and hours convenient, such as late afternoons, evenings, or on week ends. The National University Extension Association reported in 1940, 52 universities and colleges, of which 49 are publicly controlled, offering such extension courses. There are approximately 40 institutions in addition to the members of the association that give more or less extension work. Many of the courses offered command college credit and may be applied toward a degree.

Enrollments in extension courses

Year	Men	Women	Total
1933–34	59, 175	86, 569	145, 744
1935–36	89, 211	96, 026	185, 237
1937–38	71, 814	151, 591	223, 405

The enrollments of men and women show large gains between 1933–34 and 1935–36. The loss of men in the 1937–38 enrollments is greatly overcome by the extraordinary increase of women taking extension courses. The gain in the total between 1934 and 1938 is impressive, reaching nearly 70 percent.

Correspondence Courses

There are approximately 50 correspondence departments connected with universities and colleges not including those operated on a proprietary basis.[28] Of the 50 departments, 44 are members of the National University Extension Association. This Association operates in behalf of improved standards of correspondence instruction and for mutual recognition of credits between member institutions.

These institutions now offer nearly 870 courses covering almost every field of knowledge and nearly every subject. Some courses are offered at one institution only while other subjects are offered at several institutions. For example, a correspondence course in "Insti-

[28] The U. S. Office of Education does not collect statistics concerning the so-called proprietary correspondence or home study institutions.

tutional accounting" is available at 1 institution only at the present time, while "Government accounting" may be taken at 5 institutions. The "Psychology of adolescence" can be taken at 10 institutions, while "Archeology" is available only at 2 institutions.

The National University Extension Association Bulletin now provides through its Guide to Correspondence Courses the means whereby students can quickly select the subject or subjects desired and the institution or institutions that give the courses.

Enrollments in correspondence schools (excluding proprietary schools)

Year	Men	Women	Total
1933–34	26, 355	36, 408	62, 763
1935–36	27, 868	38, 364	66, 232
1937–38	26, 393	45, 553	71, 946

The table above shows correspondence school enrollments for the years indicated.

Altogether there has been a fairly large increase in correspondence school enrollments between 1933–34 and 1937–38, but not so great proportionately as in the case of extension enrollments. Men have barely held their own while women have increased their enrollments between 1934 and 1938 by nearly 22½ percent.

Urban Universities

Among the institutions that are very active in general extension work are the urban universities. The Association of Urban Universities organized in 1914 with 14 institutions now counts a membership of 41.

The urban universities have followed two types of educational program. One, general in character, not especially related to or concerned with the urban constituency, and the other, that is mainly concerned with the latter. With respect to the urban constituency we find that the urban universities and a few others that are not members of the Association of Urban Universities have set up different types of colleges or services under the following designations: There are 8 institutions that operate a "University College"; in certain cases these are off the main campus; 4 have the "Down-town Colleges"; in one case the designation is "In-town College," another case "New College." In two cases the down-town unit is named after the city, such as Cleveland College of Western Reserve University, and Dallas College of the Southern Methodist University. The College of William and Mary located in Williamsburg, Va., operates an out-of-town unit in the nearby city of Norfolk known as the Norfolk division of the college.

Three institutions have set up Schools of Adult Education, and two have set up Divisions of Adult Education. Evening courses are

distributed as follows: Evening Sessions, 2; Evening Division, 2; Evening Class Division, Evening Classes, 3 each; Division of Evening Classes, Night Division, 1 each; Late Afternoon Classes, 3; Saturday Classes, 2; College Collateral Courses, 1; University Extension courses, 2. There are a number of other institutions not belonging to the group above that offer evening or Saturday classes.

The courses designed for urban constituencies are usually of two kinds, those that may apply toward a degree, and those that do not. Examples of both kinds of courses are given herewith.

At Hunter College, the City of New York, credit courses, both on the undergraduate and graduate levels, have been added to the existing program. These include Advanced Transcription, Leaders of American Government, Administration of New York City, Housing, Problems in School Administration, History of Central Europe, Portuguese.

New York University in New York City has been giving a program of courses for the training of employees of the State and city; 655 such employees have been enrolled on public service courses since August 1939. Although nondegree courses, they are recognized for educational credit by the New York Civil Service Commission.

The 4-year college program of the Harvard University Extension Courses leads to the degree of Adjunct in Arts. No formal entrance examinations are required for this degree.

The programs of the College of Practical Arts and Letters of Boston University have for their purpose specific occupational goals for women, such as advertising artist or copy writer, assistant in a bank, costume designer, executive secretary, lunchroom or tearoom manager, store buyer, textile or furniture designer, secretary to an editor, to a lawyer, etc.

Graduate courses in engineering are given in the evening to employed engineers by Polytechnic Institute of Brooklyn, New York University, and affiliated schools.

Evening courses in the principal fields of engineering leading to the degree of bachelor of science are offered by Carnegie Institute of Technology. These degree programs are 9 or 10 years in length.

The University of Akron offers courses in the organization and administration of municipal recreation. It also offers a course in industrial recreation, among many other special offerings.

Urban University Enrollments.

In 1939, Walters compared the 1937–38 and 1938–39 enrollments of the group of urban universities that are members of the Association of Urban Universities.[29] The attendance is classified in the table

[29] Walters, Raymond, Statistics of registration in American colleges and universities. School and Society, vol. 787, Dec. 16, 1939.

below according to institutions in cities belonging to four population groups.

	Full-time students		Part-time students		Total	
	1938	1939	1938	1939	1938	1939
1	2	3	4	5	6	7
1. 15 institutions in 5 cities of more than 1,000,000 population	87,872	85,452	109,812	106,790	197,684	192,242
2. 7 institutions in 5 cities with populations between 500,000 and 1,000,000	31,511	31,298	27,331	26,170	58,842	57,468
3. 12 institutions in 11 cities with populations between 250,000 and 500,000	34,523	35,186	21,929	22,341	56,452	57,527
4. 4 institutions in 4 cities with populations between 100,000 and 250,000	9,671	9,426	3,742	4,069	13,413	13,495

In the first population group there was a slight loss in attendance between 1938 and 1939 for both full-time and part-time students. In the second group a slight decline is also shown for all students. In the third group of cities the enrollments show a slight increase. In the fourth group there has been a loss of full-time students, a gain of part-time students, and a very slight gain for the total attendance.

V. Graduate Instruction

Enrollments

Among the more significant developments in higher education in recent times is the extraordinary increase in the enrollment of graduate students. According to the latest figures available we find the following enrollments beginning with 1934:

Enrollments of graduate students

Year	*Men*	*Women*	*Total*
1933–34	43,170	26,101	69,271
1935–36	47,410	31,501	78,911
1937–38 [30]	57,686	35,973	93,659

[30] These figures differ from those under table 2 in that they include for the first time enrollments in professional curricula which in a strict sense are the equivalent of the enrollments in the master's curriculum.

Comparing the total figures of graduate enrollments, it will be noted that the increase between 1935–36 and 1937–38 was 14,748.

The increase in enrollments of men between 1935–36 and 1937–38 was 10,276 or more than double that of the preceding biennium, with only 4,240. On the other hand, the increase in women between 1935–36 and 1937–38 was only 4,472, which is considerably less than the increase of the preceding biennium, with 5,400.

The percentage of men and women enrolled in graduate study for the years indicated is shown as follows:

Year	*Men*	*Women*
1933–34	62.2	37.8
1935–36	60.0	40.0
1936–38	63.0	37.0

There has been comparatively little change in the proportion of men and women enrolled in graduate courses.

Degrees

In 1937–38 there were 98 institutions that granted the doctorate and 303 that granted the master's degree.

Masters' degrees

Year	*Men*	*Women*	*Total*
1933–34	------	-----	18, 304
1935–36	------	-----	18, 302
1937–38	14, 144	8, 487	22, 631

According to the table above there has been a large increase in the number of masters' degrees granted between 1935–36 and 1937–38. The figures show an increase of 4,329.

Doctors' degrees

Year	*Men*	*Women*	*Total*
1933–34	-----	---	2, 819
1935–36	-----	---	2, 770
1937–38	2, 502	430	2, 932

There was a slight decrease in the number of doctors' degrees between 1933–34 and 1935–36, but the loss was more than overcome by 1937–38 when 2,932 doctorates were conferred.

Number and Distribution of Doctorates

From recent studies by Gilchrist,[31] the number and distribution of doctorates by fields and by subjects is quoted below:

TABLE 10.—*Number of doctorates by fields*

Subject field	Years			
	1935–36	1936–37	1937–38	1938–39
1	2	3	4	5
Philosophy	49	52	49	69
Religion	54	60	68	67
Physical sciences	766	810	707	787
Earth sciences	103	74	96	91
Biological sciences	658	618	701	762
Social sciences	667	721	759	756
Literature and art	386	374	338	396
Total	2, 883	2, 709	2, 768	2, 928

The foregoing table shows a drop of nearly 200 doctorates between 1935–36 and 1936–37. The next biennium shows a small increase. But in 1938–39, the figure is the highest recorded. Comparing

[31] Gilchrist, Donald B. Doctoral dissertations accepted by American universities. New York, N. Y., H. W. Wilson Company, 1940. (Published annually.)

1938–39 with 1937–38, we find a considerable increase in the number of degrees in philosophy, physical sciences, biological sciences, and literature and art, with a slight decline in the number of degrees in the fields of religion, earth sciences, and social sciences.

TABLE 11.—*Number of doctorates by subjects, 1935–36 to 1938–39*

Subject	1935–36	1936–37	1937–38	1938–39	Subject	1935–36	1936–37	1937–38	1938–39
1	2	3	4	5	1	2	3	4	5
Philosophy	49	52	49	69	Psychology	118	112	108	123
Religion	54	60	68	67	Zoology	132	98	102	102
Astronomy	5	9	12	5	Anthropology	20	15	18	11
Chemistry	482	497	426	482	Economics	117	127	143	150
Engineering	48	70	59	44	Education	294	290	311	289
Mathematics	84	76	62	91	General history		6		
Physics	147	158	148	165	Medieval history	7	14	18	12
Geography	8	13	13	17	Modern history	129	124	144	138
Geology	64	42	58	49	International law and relations	3	15	14	20
Metallurgy	16	7	7	9	Law	15	7	5	16
Meteorology		1	4	2					
Mineralogy	5	3	5	1	Library science	2	3	1	5
Paleontology	10	8	9	13	Political science	45	71	49	44
Agriculture	53	48	37	40	Sociology	35	49	56	71
Anatomy	15	14	20	17	Art and archaeology	12	14	12	20
					Music	7	6	4	11
Bacteriology	41	46	40	56	General literature	14	3	4	8
Biochemistry [1]			101	127	Classical literature and history	51	66	50	49
Botany	108	88	106	108	English literature	162	165	183	174
Entomology	30	51	33	47	Romance literature	87	79	73	82
Genetics	21	13	31	32	Germanic literature	40	33	51	37
Horticulture	14	21	16	11					
Medicine and surgery	12	1	7	9	Oriental literature	12	6	8	13
Pharmacology	18	14	19	23	Slavic literature	1	2	3	2
Physiology	83	103	66	59					
Public health	13	9	15	8	Total	2,683	2,709	2,768	2,928

[1] Used for first time in 1938.

The 10 subjects that rank above 100 in the number of doctorates granted in 1938–39 are as follows:

Chemistry	482	Modern history	138
Education	289	Biochemistry	127
English literature	174	Psychology	123
Physics	165	Botany	108
Economics	150	Zoology	102

Studies Relating to Graduate Instruction

The address of Dean R. G. D. Richardson of the Graduate School of Brown University before the 37th Annual Conference of the Association of American Universities held at Cornell University, November 7, 1935, was in a sense the precursor of a number of studies and investigations in the field of graduate instruction.

On that occasion he pointed out the need of a constructive review of graduate schools of arts and sciences. Among other matters, the questions were raised as to probable demands for graduate instruc-

tion, the desirability of limiting the number securing the masters' and doctors' degrees, the opportunities, local and Nation-wide for new men in different fields including replacements, the enlistment of the best minds for advanced study, the finding of the true type of graduate student rather than the degree worshiper, the relation of degrees to the type of training, the wise selection of assistants, the promotion of better support for fellowships, and the need for cooperation among universities and with other educational agencies.

Since that time a number of studies have appeared bearing on various aspects of graduate study, including the fields of engineering, teacher education, preparation of secondary school teachers, evaluation of the master's degree, graduate work in the South, medical education, and research methods, some of which are briefly discussed below.

In 1939 five studies were published dealing with graduate study and research with emphasis on history and general principles or objectives. The first of these was published by the Carnegie Foundation for the Advancement of Teaching entitled "Studies in Early Graduate Education," by W. Carson Ryan. In his study, Dr. Ryan has explored the earlier experiences of three institutions that were dominant in the development of graduate study and research, namely, the Johns Hopkins University established in 1876, Clark University started in 1888, and the University of Chicago which began its work in 1890. Reference is also made to earlier efforts in behalf of graduate study at Harvard, Yale, Michigan, Columbia, and brief mention is made of the influence of Brown, Princeton, Virginia, Cornell, and Pennsylvania.

The key to the contribution that the Johns Hopkins University was to make to higher education is well stated by President Gilman in a part of his inaugural address. "What are we aiming at? * * * An enduring foundation; a slow development; first local, then regional, then national influence; the most liberal promotion of all useful knowledge; the special provision of such departments as are elsewhere neglected in the country; a generous affiliation with all other institutions; avoiding interferences and engaging in no rivalry; the encouragement of research; the promotion of young men; and the advancement of individual scholars, who by their excellence will advance the sciences they pursue and the society where they dwell."[32]

As to Clark University and its development, Ryan points out its elements of strength:

> Designation at the start of an educational leader with a background of rich experience, powerful drive, and a broad philosophy of education; a determination to build on the basis of ascertained needs rather than tra-

[32] Ryan, W. Carson. Studies in early graduate education. Bulletin No. 30, 1939. The Carnegie Foundation for the Advancement of Teaching, New York. P. 28.

ditional academic patterns; careful selection of teaching staff and studies in the light of these needs, with emphasis upon "creative" learning and research of graduate quality because that area was not then occupied to any large extent by other higher institutions; an informal relationship between faculty and students, in which the cooperative possibilities of the search for truth was emphasized culminating in a surpassingly effective use of the "seminar" in which were combined the features of coordinated planning and pooled experiences, independent exploration into a wide variety of fields of knowledge, inspired direction of the advanced work of mature students, and magnificent lecturing of an unconventional order.

Some of these were specific for Clark University as to time and place; but most of them involve principles that would have significance for any educational program, especially at the graduate level.[33]

As to the University of Chicago, it developed on principles similar to Johns Hopkins and Clark. It was unique, however, in certain respects, in that the plan was first of all more comprehensive involving the university proper, including undergraduate, graduate, and professional, the university extension work, and the university publication work. Instead of the college year being limited to the customary annual period of 8 or 9 months, the year was divided into 4 quarters each and courses were classified as majors and minors, the major covering 10 to 12 hours of classroom work a week, and the minor 4 to 6 hours. Chicago, however, marked students which Hopkins did not.

The purpose of the new plan was "to free students and faculty alike from the handicaps of the traditional college and enable them to live and work in an atmosphere of scholarship and research." The schedule for each instructor was 8 or 10 hours a week allowing unusual opportunity for study and research. At Chicago, women were given equal opportunities with men as students and members of the faculty. At Hopkins and Clark this was not so in the beginning of their history.

Also of great importance was the idea that the university must adapt itself to problems of the present age. Not only were men wanted "to harness electricity and sound," but men were needed in order to guide in the complexities "of economic and social duties" * * * "with the sole purpose of discovering truth, whatever bearing that discovery may have upon other supposed truth. This requires men of the greatest genius, equipment of the highest order, and absolute freedom from interference of any kind, civic or ecclesiastical. * * * The University touches life, every phase of life, at every point."

The second of these general studies was prepared by President Isaiah Bowman of the Johns Hopkins University. This study[34] is one of the outgrowths of the activities of an advisory committee ap-

[33] Ibid., p. 90.

[34] Bowman, Isaiah. The graduate school in American democracy. Washington, U. S. Government Printing Office, 1939. (U. S. Office of Education, Bulletin 1939, No. 10.)

pointed by the Commissioner of Education which met in Washington, March 29, 1937.

This committee approved the idea of a major study of the graduate school and suggested several topics for consideration. It suggested also the naming of a subcommittee to develop suitable plans for such a project. At a meeting held May 21, 1937, the recommendation was made that attention be centered on the following topic, one of those presented at the March conference, namely, "The development of a clear statement of the functions of the graduate school with reference to its relation to the Nation's resources, both human and material."

It was the view that such a statement, general and inspirational in character, would be most useful at this time.

The committee after careful consideration invited President Bowman to undertake the task of preparing the statement. After meeting with an enlarged subcommittee on two occasions for consultation, President Bowman presented his statement which was published in November 1939.

The bulletin treats the various objectives of graduate study and their definition in the light of the background of American political and social environment. Dr. Bowman has indicated among other matters, the following:

The Nation and the race are dependent on "the incessant single-minded search for truth." The graduate schools in one of the most favorable environments in history have evolved through "growth of intellectual power through a combination of discipline and freedom." In general, higher education has grown out of the past. It must use the past but not take refuge in it.

Closely related to graduate work are the following general objectives:

(1) An understanding of the realities of experience toward which we have an evolving attitude: Knowledge is not a standardized body of fact and doctrine but an incomplete revelation of the world that is constantly enlarged by new investigation.

(2) Experience in critical methods of work: The use of courses, the value of logical processes, the need for analysis, each of which has varying significance according to the nature of the field of investigation.

(3) A knowledge of the history of science and learning: How men made progress in learning to observe and to think and how that progress came to benefit mankind.

(4) An appreciation and some technical study of the environment: Man's geographical surroundings, man working under measurable conditions, man and nature in interaction. The closely associated study of alternative choices, opportunities, limitations, and compulsions of the environment and not the study of civilization in a vacuum, as if man did it all himself without regard to terrain.

(5) An experimental knowledge of the way the modern world works: The applications of humanitarian concepts, the growth of codes, and the origin and present-day operation of social machinery.

(6) The acquisition of an outlook or a philosophy that embraces all men understandingly in their different environments, occupations, and cultures.

It is also important that the graduate school consider carefully the limitations of students' minds as well as their special mental abilities. The student's mind is a conditioning factor meriting more careful study.

Society is an important conditioning factor in the development of graduate study and research. Two phases stand out as important, namely, the *function of the practitioner* and the *function of the scholar.* While both share in human advancement the practitioner is "primarily a selector in the fields of life and learning. * * * A trained practitioner uses learning and may contribute to it, but his expertness is directed mainly to applications of knowledge in fields of action and use. * * * Through accumulated experience the scholar finds probable cause and effect in some chapters of human history, introduces examples of conscious social improvement, and lifts life above the level of fatalism.

The graduate school owes a responsibility to democratic society in that it must set its scholastic goals above the average in order that improvement may result. Talent must be identified and chosen.

The special nature of the graduate school is also important as it has a powerful influence on university life in general and it is also subject to the influence of the university. The graduate school cannot be narrow, must serve not only the student and the university, but it must reach out to society in general. The creative forces loosed in the university must eventually react in social behavior.

The third is entitled "Graduate Work in the South" [35] by Dean Charles W. Pipkin of the State University of Louisiana, who has made a valuable study of facts as well as problems facing the graduate schools in 13 southern States. Figures show that graduate enrollments in State institutions are growing more rapidly both in summer and during the regular session than is the case in privately endowed schools.

The graduate schools are suffering because of the extra burden caused by their growth, which is largely caused by the demand for teachers' certificates and for specialists in industrial and vocational research. The graduate schools have a great responsibility in the future development of the South in almost every field of endeavor.

Closely related to the aforementioned contribution is Dean Pipkin's later study entitled "Some Phases of Graduate Work in the Southern Regions Since 1935." [36] Consideration is given to the resources bearing on graduate study in the southern States as well as criteria

[35] Pipkin, Charles W. Graduate work in the South, 1939.

[36] Pipkin, Charles W. Some phases of graduate work in the southern regions since 1935. State University of Louisiana, 1940.

relating to the improvement of the graduate schools. The relative emphasis given to different fields of advanced study is shown by States.

The fourth is entitled "Research in American Universities and Colleges," by Dr. Raymond M. Hughes, President Emeritus of Iowa State College. In this country the universities are vitally concerned with research because they are the centers where students obtain their preliminary training and experience in research and research methods. Hughes found that of the starred men listed in the first edition of *American Men of Science* published in 1904, 388 are still living as shown by the sixth edition. Of these latter, 72.6 percent hold the Ph. D. or Sc. D. Of the 250 starred for the first time in the sixth edition 76.5 percent hold the Ph. D. or Sc. D. An inquiry made of a prominent industrial organization shows that nearly all of its research men have received the doctorate.

It is also pointed out that between 70 and 75 percent of Ph. D. graduates are employed by universities and colleges and between 25 and 30 percent are employed elsewhere, in industry, business, and the Government.

According to the figures for 1935–36, 150 of 1,450 American colleges and universities spent about $265,000,000. Of this amount about $50,000,000 was devoted to research.

Source of Research Funds.

According to Hughes—

> Research now under way in the universities is financed chiefly from six sources: Appropriations by States, Federal grants, sales of products, endowments, grants from foundations, and special gifts. While only a rough approximation can be made of the amounts received from some of these sources, estimates are suggestive. The figures given attempt to represent the year 1935–36:

Source	*Amount*
Appropriation by States, Department of Agriculture, experiment stations	$7, 283, 000
Estimate of other State appropriations spent for research	7, 000, 000
Federal grants to universities for agricultural experiment stations	4, 995, 000
Sales and other income for research	2, 000, 000
General endowment income	17, 000, 000
Grants from foundations for research	8, 000, 000
Special gifts from outside foundations	4, 000, 000
Total (approximate)	50, 000, 000

> It has also been estimated that expenditures for research in industrial laboratories involve an expenditure of $100,000,000 a year.
>
> The Government spent in the aggregate for its own research activities and those which it subsidized during the fiscal year 1936–37, $120,000,000, including both regular and emergency expenditures.[37]

[37] Judd, Ogburn, and Wilson. Research—A National Resource. 1. Relation of the Federal Government to Research. National Resources Committee, Washington, U. S. Government Printing Office, 1938. p. 177.

The fifth study which treats on the meaning and function of graduate training for secondary schools, appeared under the title "The Master's Degree for Secondary School Teachers," by Paul William Stansbury, Director of Graduate Study, University of Toledo.[38] In this work the present status of the master's degree is summarized with respect to various topics, including: Number of degrees awarded, name of masterate, admission requirements, residence, transfer of credits, time limit, graduate course, standard of work, foreign language, distribution of courses, thesis, or essay, and examinations.

In his study of 5,000 teachers selected mainly from high schools of large cities, Stansbury found that 53 percent were women and 47 percent were men. Other data confirm the predominance of women working for the master's degree in this particular group.

It was also found that 72 percent of the teachers are now teaching subjects in which they majored in their graduate work. As to taking the bachelor's degree at the same institution in which the master's degree was received, it appears that 68 percent of these teachers did not receive both degrees at the same institution. In that sense there was no inbreeding, although in the laboratory sciences the percentage was somewhat lower. It was assumed that the better undergraduate students were kept over as graduate laboratory assistants.

The maturity of these teachers was indicated not so much by chronological age but rather by the fact that 86 percent had taught before receiving their degrees. However, only 28 percent had done their graduate work as full-time students. The other 72 percent took their work as part-time students and during summer sessions and in evening and Saturday classes.

Only 24 percent of the teachers had received the bachelor's and master's degrees within a period of 2 years. Another group constituting 51.6 percent had earned their master's degrees within periods ranging between 3 and 7 years. Another group, 24.6 percent, required more than 8 years for the master's degree after receiving the bachelor's degree.

One of the principal reasons for the selection of a graduate school was given as accessibility or convenience of the institution. Another important reason given was the excellence or standing of the department of the student's field.

It was also found that quite a number continued their formal study after having received the master's degree. The desire for growth seemed to be the main reason for taking another year of advanced study.

In the matter of the master's degree as a fifth year of advanced study, it was stated that—

[38] Published in 1939 by the Ohio State University Press, Columbus.

The fifth year of study serves a useful purpose, but does not require the award of a master's degree. In the professions of law, medicine, ministry, engineering, and a number of other fields of study, the technical courses presuppose a liberal arts degree. While they are comparable to the fifth year plan, a second bachelor's degree is conferred. The master's degree, however, signifies study beyond the first professional degree. Special arrangements and wide latitude may be desirable for various groups of teachers, but a bachelor of education or another first degree would serve the purpose of designation. By this use of academic titles, the master's degree would be preserved in its original connotation—*gradus*—an advanced step in the direction of a profession of teaching.

The master's thesis.—One of the changes that has been taking place with respect to the requirements for the master's degree relates to the thesis requirement. An examination of 211 representative institutions that grant the master's degree indicated the following:

82 require a thesis: No options indicated.
5 do not require a thesis.
29 make the thesis optional.
5 offer a 5-year program leading to the master's degree in the field of education.

The details of a few of the optional plans are as follows:

Case 1. { 9 courses with thesis.
12 courses without thesis.
Cases 2, 3, and 4. (Thesis waived for courses—no figures given.)
Case 5. { 30 semester hours with thesis.
38 semester hours without thesis.
Case 6. { 24 semester hours with dissertation
30 semester hours and essay } for M. Ed.
Case 7. Essay a substitute for thesis.
Case 8. Thesis or seminar course or research course.

On this question, Stansbury found that the proportion of teachers who write theses in connection with the master's degree is lower than the catalog requirements would appear to indicate. He found that nearly 40 percent of the 5,000 teachers that came under his investigation stated that they were not required to write a thesis.[39]

Graduate Instruction in Land-Grant Institutions

For a period of at least 30 years, the Association of Land-Grant Colleges and Universities has had a Standing Committee on Graduate Work. This committee served a useful purpose in keeping alive an interest in the problems of graduate schools. The interest reached the point where the Executive Committee of the Association approved the establishment of a Section on Graduate Study corresponding in organization and authority to such sections as agriculture, engineering, and home economics.[40]

[39] Ibid., p. 8.
[40] Proceedings of the Association of Land-Grant Colleges and Universities, Washington, D. C., Nov. 15–17, 1939. P. 221–23.

In order to bring closer cooperation between the new section and the older ones it was arranged that one session each year is to be a joint session between the Graduate Work Section and one of the other Sections or Sub-Sections of the Association. The Resident Teaching Sub-Section was the first to participate in the joint session.

The objectives and problems which are the principal concern of the Graduate Work Section are as follow:

(*a*) Educational and administrational problems of graduate work in the Land-Grant Colleges.

(*b*) The maintenance and elevation of standards in graduate work.

(*c*) The relation of undergraduate curricula to graduate work, especially in 5-year curricula.

(*d*) Graduate work in absentia.

(*e*) Development of professional training in 4- and 5-year curricula.

(*f*) Professional training in graduate work in contrast to training for research.

(*g*) Cooperation between colleges and intra-college groups in the administration and pursuit of graduate work.

(*h*) Graduate school relations to experiment station, both in respect to graduate theses in experiment-station projects and the training of specialists for experiment-station work.

(*i*) Graduate school relations to extension activities involving the training of specialists for extension work and improvement of personnel through graduate work while employed.

(*j*) Graduate school relations with home economics, engineering, education, and research.

At the first meeting of the Section held in Washington, November 15, 1939, the bearing of graduate study and research on land-grant college education was pointed out by Director R. E. Buchanan of the Agricultural Experiment Station of Iowa State College. He said:

> Three important postulates are laid down and elaborated upon. These are: (1) There can be no satisfactory development of graduate work in an institution, in a field, or in a department without previous, or in some cases concomitant, development of research; (2) there is no essential difference between the grade or level on which research and graduate work are carried on the land-grant college fields and those grades or levels characteristic of other fields; (3) the research facilities of the land-grant institutions make inevitable the development of graduate work in these fields.

It was indicated that every land-grant institution would eventually have some form of organization caring for graduate students. It was not so important that these organizations should follow a single or standardized pattern whether it be a graduate college, a graduate school, a graduate faculty, a graduate committee, a graduate dean, singly or in all possible combinations.

Attention was called to a number of important intramural environmental relationships as well as extramural relationships that should be maintained with the graduate school.

Graduate Medical Education

In recent years considerable attention has been given to questions relating to graduate and postgraduate medical education in this country. In 1940, two reports appeared: One entitled "Graduate Medical Education in the United States, I—Continuation Study for Practicing Physicians 1937–1940," prepared by the American Medical Association,[41] and the second entitled "Graduate Medical Education, Report of the Commission on Graduate Medical Education." [42]

In the first of these reports, a brief historical statement shows the activities of the American Medical Association in behalf of graduate medical education. First mentioned is the 1913–15 survey which investigated the status of graduate teaching. This resulted in an inspection of the more important graduate schools concerned with medical education. In 1919 a further study was made and led to the conclusion that more adequate provision should be made for graduate medical study and that the responsibility of this type of work should be met by the universities rather than by proprietary schools. In 1922–23 another inspection took place. This led to the recommendation that there should be a general adoption of principles of graduate medical education. Short-cuts to special practices of various kinds were condemned. The principles set up involved minimum admission requirements for those who intended to practice a specialty; the importance of adequate records relating to the work of the student, and the adequate supervision of the school were emphasized. Recommendations were made regarding the curriculum and the grading of the instruction offered. Standards were indicated for the teaching force, laboratories, library and museum facilities, hospitals and dispensaries, annual announcements, advanced degrees, diplomas, and certificates.

Since 1936, the American Medical Association has shown increased interest in studies pertaining to graduate study in medicine. According to the findings of the 1937–40 study, practicing physicians had available in or near their home communities 50 itinerant courses in 38 States during 1938–39. Continuation study was provided in 43 States and the District of Columbia and 46 States offered graduate opportunities.

The total attendance at continuation courses and clinical conferences was approximately 37,500 during 1938–39. The subjects of graduate character included pediatrics, obstetrics, medicine, special subjects, and surgery.

The second report grew out of the activities of the Advisory Board for Medical Specialties which created in 1937 the Commission on

[41] Published by the Council on Medical Education and Hospitals of the American Medical Association, Chicago, Ill.

[42] Published by University of Chicago Press, Chicago, Ill.

Graduate Medical Education. It serves to complement the *Final Report of the Commission on Medical Education* which was published in 1932 in order that graduate medical education might be improved. Special attention is given to medical internship and residency, both bearing important relationships to graduate study in medicine.

The findings of the report point out the following basic principles relating to internship:

1. The internship should be regarded as part of the basic preparation for either beginning the general practice of medicine or undertaking advanced training in a specialty.
2. The internship should provide a real educational experience and a period of clinical responsibility under supervision that is designed to complete the clinical clerkship of the medical course.
3. The internship should be an important responsibility of the staff and should be under the direction of those members who are competent to provide the necessary instruction.
4. The internship should be a joint responsibility of the medical schools and of those hospitals that can provide a satisfactory completion of the fundamental preparation for medical practice.

The following statements bring together the basic principles regarding residency: (The term residency includes "all long periods of full-time training in a hospital in one of the specialties following the successful completion of an internship.")

1. The residency should be the most satisfactory method of graduate training for specialized fields of practice.
2. The residency should be organized as a real educational experience provided by qualified teachers who are willing to assume the responsibility for adequate instruction.
3. The residency should provide preparation in the sciences basic to the specialty as well as sufficient clinical experience, under supervision, to ensure real competence.
4. The residency should be a joint responsibility of medical schools and of those hospitals able to provide residences of a satisfactory educational character.

The basic principles relating to postgraduate medical education are summarized as follows:

1. Postgraduate medical education should aim to keep the physician abreast of current knowledge in his present field of practice.
2. Postgraduate medical education, as defined in this report, should not attempt to qualify a physician for entering a specialized field of practice.
3. Postgraduate medical education divides itself into two independent categories which should be clearly differentiated, namely,
   (*a*) Instruction for general practitioners.
   (*b*) Instruction for those who are already qualified as specialists.
4. Postgraduate medical education should be offered only by those who are qualified to provide satisfactory instruction.
5. Postgraduate medical education should be coordinated by existing agencies in each State that are concerned with the health and medical care of the population.

VI. The Problem of Accrediting

In the United States official approval of institutions of higher education does not depend upon the authority of the Federal Government as is the case in many other countries. It depends mainly on national and regional accrediting associations organized on a voluntary basis and without the necessary legal sanctions to enforce standards, because only to a minor extent do States function in these matters. Notwithstanding this lack of legal authority, the fact that each accrediting agency includes in its organization the outstanding scholars and administrators pertaining to it, professional pride and integrity on the part of officials have made the several accrediting organizations reflect high ideals and promote good practices. As advancements have been made in educational and professional fields changes in standards have ultimately followed.

This procedure of accrediting higher educational institutions through voluntary group action is typical of the freedom existing in American democracy. The accrediting organizations have developed without legal restraints and only recently have certain States attempted to challenge their authority with respect to local State institutions.

These methods of accreditation have evolved through urgent need because of the absence of Federal authority relating to institutions of higher education and because of general lack of suitable machinery and sometimes of interest on the part of most of the States.

In the early days before the Civil War, the problem of accreditation was not urgent because of the relatively small number of colleges and because of the similarity of most of their programs. By 1870, the number of institutions of higher education had reached nearly 350, and by 1900, more than 600 were in existence. The establishment of 250 or more colleges and universities within a period of 30 years scattered through the several States involved many problems relating to the evaluation and recognition of the academic offerings and degrees of these institutions both within and without their home States, especially on the part of the older and better established schools. About this time, foreign universities began to feel the need of some national authority which could guide them in their appraisal of our colleges and universities in view of the increasing number of students who desired to carry on their advanced studies abroad.

Institutional Status Gained

The answer to these questions began to take form through the establishment of the Association of American Universities in 1900. This body included 14 well-established universities that were strong in the fields of research and graduate study.[43] By 1913, the North

[43] In 1940 it included 33 institutions, 2 of which were in Canada.

Central Association of Colleges and Secondary Schools began its work of regional accreditation and was followed by other accrediting associations including those approving professional schools.

Considerable relief was felt as these associations began to function. More uniform standards were set up. Weaker institutions were strengthened, some were consolidated with other schools, a few closed their doors, the scandals of counterfeit universities were exposed leading to their prosecution and their closing through the cooperative action with the United States Postal Authorities.

Institutions gained a recognized professional status by inclusion on approved lists. The accrediting movement became more and more popular even though it sometimes worked hardships on some of the institutions involved. Gradually, however, the increase in the number and types of accrediting associations created burdens which began to inferfere with normal institutional development and administration.

Criticism of Accrediting Agencies

By 1924, a reaction against accrediting organizations made itself felt in the resolutions presented at the annual meeting of the National Association of State Universities.

The introduction to these resolutions states:

> The National Association of State Universities has viewed with increasing concern the number and variety of organizations which have undertaken to standardize procedures and policies in one or another branch of higher education. Not only does it feel that actions in matters vitally affecting the policies of State institutions have too often been taken by such organizations without sufficient provision for consultation with the institutions concerned, but it is further of the opinion that the movement toward standardization in higher education in America, while it has accomplished great good, is assuming such a character as seriously to limit both local initiative and that freedom of experimentation which is necessary for educational advance.[44]

This led to the naming of a special committee of three members of the Association who were to:

> Bring the attitude of the Association to the attention of the organizations and agencies exercising control over educational procedures and policies within the field covered by the State universities, or which are seeking financial support from State universities. It shall be the duty of this committee to confer with such organizations and agencies both as to the larger participation by State universities themselves in the formulation and administration of educational policies affecting their work, and as to the confinement of the work of such organizations within limits that shall leave ample scope for local initiative and experimentation. The committee shall further confer with those educational organizations in which representation is held both institutional and by individual membership, with a view to the working out of an agreement which shall restrict the voting of individual members to matters not affecting institutional policies.

[44] Transactions and Proceedings of the National Association of State Universities in the United States of America. Vol. 24, 1926, part 11, p. 1. *See also* Coordination of Accrediting Agencies. American Council on Education Studies. October 1939. Series 1, vol. 111, No. 9.

The committee, in this connection, obtained the assistance of Dr. F. J. Kelly, at that time Dean of Administration of the University of Minnesota, in making a careful study of the accrediting situation. He examined the standards of each of the accrediting agencies and analyzed their objectives. It was found that professional organizations tended to state in unnecessary detail the educational requirements which a school must meet in order to gain admission to the approved list. Standards were at first largely opinions or recommendations. Compliance with these was enforced within a short time by the publishing of lists of approved schools or by excluding nonconforming institutions from membership in national associations. The tendency was toward uniform standards on a Nation-wide basis, and institutions with many schools and colleges were under pressure which had its serious effects on the wise administration of funds throughout the entire organization.[45]

First Conference of the American Council on Education on Accrediting

In 1938, President George F. Zook of the American Council on Education brought up the question "Who Should Control an Institution of Higher Education?" in a paper presented before the Association of Land-Grant Colleges and Universities. He called attention to the fact that the accrediting agencies are being challenged from within the constituent institutions, and institutions are seeking freedom from requirements of so many accrediting bodies.

In 1939, the American Council on Education called a conference of the principal accrediting agencies to discuss ways and means for overcoming the difficulties that had arisen. On this occasion, the accrediting troubles were diagnosed by President Samuel P. Capen of the University of Buffalo. This was followed by a statement on "Objectionable Practices of Accrediting Agencies" by President John J. Tigert of the University of Florida.

This latter statement was based largely on the report made of the Joint Committee on Accrediting of the Association of Land-Grant Colleges and Universities and the National Association of State Universities.[46] He first called attention to the excessive number of accrediting agencies which numbered more than 40, not including State departments of education, as well as certain privately controlled universities that have approved lists of their own.

He also pointed out that accrediting instead of dealing with an institution as a whole has begun to reach down through the college

[45] Ibid., p. 9–10.

[46] The Joint Committee of the Executive Committees of the two Associations appointed March 7, 1938. *See also* Transactions and Proceedings of the National Association of State Universities, vol. XXXVI, 1938. P. 34–38.

organization into curricula and departments. Such close surveillance on the part of the accrediting bodies has affected the rights of institutions and has tended to destroy their freedom. It has tended also to break down individual initiative in the attempt to gain uniformity. The costs of accrediting have increased and burdens have been added to local institutional staffs. Accrediting agencies not only duplicate each other's efforts but actually interfere with appointments and other administrative matters. Standards in many cases are outmoded, and finally the accrediting movement has reached a stage where trade-union methods are influencing its activities.[47]

Following the presentations, President Zook raised the question as to the purpose of accrediting organizations. The answers given may be summarized as follows: To inform the public as to institutions that give creditable programs; to detect diploma mills; to assist registrars and other administrative officers in obtaining accurate knowledge as to the quality of scholarship of different institutions; to assist philanthropy in ascertaining the character of institutions that may be deserving of support; and to inform the public as to the competency of the professional work done.

Another function of these associations is the assistance rendered in connection with the transfer of students from one institution to another. Besides assisting administrative officers in obtaining background for support in improving educational practices and the corresponding financial assistance needed, they serve also to protect the schools from encroachments of noneducational or political pressure groups. Furthermore, the annual meetings of these associations serve for the mutual benefit of those who attend them through the study and discussion of different measures relating to institutional improvement.

As a result of this meeting, proposals were made encouraging a careful study of the whole matter as it was recognized that only through prolonged effort and close cooperation could the difficulties that had arisen be overcome.[48]

The States' Relation to Accrediting

In view of the need for increased consideration of problems of accrediting and because of the need for more complete information on the subject of adequate standards for post-secondary institutions, the Council of Chief State School Officers requested the U. S. Office of Education in 1938 to recommend standards which could be used in the several States for the accrediting of post-secondary institutions.

[47] Coordination of accrediting agencies. American Council on Education Studies. October 1939. Series I. Vol. III, No. 9. P. 22-32, 46.

[48] Coordination of accrediting agencies. American Council on Education Studies. Series I. Vol. III, No. 9. October 1939. P. 22-46.

The U. S. Office of Education while unwilling to recommend standards, accepted this obligation and organized several studies bearing on the subject of State accreditation. The results of these studies are now available in a bulletin entitled "Collegiate Accrediting by Agencies Within States." [49]

Second Conference of the American Council on Education on Accrediting [50]

In harmony with the desires of the members of the first conference called by the American Council on Education April 7 and 8, 1939, President Zook called a second conference which met October 4 and 5, 1940, to further review the questions involved and to present the reports on the special studies that had been made for the purpose of obtaining more definite information regarding the many factors involved in working out a satisfactory solution to the accrediting problem.

On this occasion, Dean George A. Works of the University of Chicago presented the case for voluntary accrediting associations. While recognizing the validity of certain criticisms of the latter bodies that had been made by President Capen and President Tigert, he pointed out ways by which some of these objections might be overcome. He also pointed out the difficulties involved in proposals that had been made by Dr. Kelly and his associates at the meeting of the National Council of Chief State Officers, when it was suggested that the States should take steps looking ultimately to accrediting institutions of higher education by State agencies. This in his view would ultimately lead to the discontinuance of voluntary accrediting associations which had in spite of difficulties rendered valuable services to higher education.

Dr. Kelly's proposal involved the consideration of three plans, as follows:

Plan A. Accrediting by the State board or State department of education.—This plan is in accord with the practices of a few States which have a governing board at the center with the head educational officer of the State serving as the executive officer. These States have the personnel sufficient in number and in training to carry the responsibility of accrediting colleges in their respective States. This plan recognizes the unity of the State's program of education from the elementary through the secondary and higher educational levels.

[49] U. S. Office of Education. Bulletin 1940, No. 3 by Fred J. Kelly, Benjamin W. Frazier, John H. McNeely, and Ella B. Ratcliffe.

[50] This section is based on data taken from "Cooperation in Accrediting Procedures." A summary of the proceedings of a conference on accrediting called by the President of the American Council on Education, Washington, D. C. American Council on Education Studies. Series I. Reports of Committees on the Council.

Plan B. Accrediting by the State board or department of education through a special arm created with the cooperation of the institutions of higher education.—This plan, followed in certain States, utilizes boards other than the State board of education for accrediting institutions. This type of organization looks toward unifying the educational program as under "*A*" by strengthening the State board of education and utilizing existing educational machinery rather than setting up a new agency.

Plan C. Accrediting by a special commission or board set up by the cooperative action of the institutions and agencies concerned.—In a number of States the responsibilities of State agencies toward accrediting vary greatly and under existing conditions it might not be feasible to place accrediting responsibility upon the State board or department of education. In such cases it would appear advisable for the State department of education to join with the publicly controlled and the privately controlled institutions of higher education in developing a plan of accreditation.

Among the observations regarding these plans for State accreditation made by Dr. Works, it was pointed out that "In the last two decades there has been a growing realization that many educational functions cannot be assigned advantageously to the Federal Government or to the individual States. The Nation is too large, the States too small for their efficient performance." The essence of the program suggested is "that regional accrediting agencies would be the primary instruments of accrediting and that working relationships would be developed between them and all other accrediting agencies with a view of reducing to a minimum the number of inspections, reports, and agencies undertaking accrediting. * * * There should be no acceptance of the idea of exclusive State accrediting without full consideration of its implications and ramifications. On the other hand, the proponents of voluntary accrediting agencies should face squarely the criticisms that have multiplied so rapidly in recent years."

Among the questions raised regarding the services of the voluntary accrediting agencies was that of the increased amount of information requested of the colleges by the different associations as well as the large amount of duplication in the forms used in gathering the information.

In a study made by Lawrence A. Bethel, the extent of duplication in the inquiry forms has been clearly shown. This has resulted in the proposal that a master schedule be prepared which would exclude all duplicated questions in the general part of the inquiry forms.

Another approach to the question was made in the study made by Aaron J. Brumbaugh of the University of Chicago on the Evalua-

tion of Institutions of Higher Education in Terms of Quality of Their Products.

This type of evaluation has been under consideration for a number of years and the value of such an approach has been given considerable study by different leaders. It implies that each institution has a different function. Each institution becomes in one sense its own criterion. If it adopt a legitimate function, and if it discharge that function, its accreditment is secure. Of course, it will not be likely to fulfill significant aims unless it have resources, equipment, and personnel of high quality and in adequate amounts.

Under the policy adopted in 1934 by the North Central Association, it became possible to encourage its member institutions in developing a clearer conception of purposes and in developing the program appropriate to that purpose.

Among the approaches made toward the evaluation of institutions by their product are included the measurement of abilities as well as the measurement of achievement of students. Considerable study has been made of these types of evaluation which have brought forth valuable criteria. It appears, however, that it is not yet possible to make accurate determinations as to what constitutes a successful college product.

As a result of this conference, it was voted:

> First, that a committee be appointed by the President of the American Council on Education to operate under the auspices of the Council and to consider the problem of developing a master schedule for the collection of general information, and to develop the project to the point where it may be laid before a conference of this character to be called by the American Council on Education.
>
> Second, that an inquiry be addressed to institutions subject to accreditation by various accrediting agencies for the purpose of discovering the value of the work of these agencies.
>
> Third, that the committee to be appointed by the American Council on Education for the purpose of drawing up a master schedule also be charged with responsibility for the distribution of the questionnaire to the institutions of higher education and the preparation of a report on the results of this study.
>
> Fourth, with full recognition that it is not only appropriate but necessary for the State agencies to accredit institutions of higher education for the purpose of maintaining such educational and professional services as they deem satisfactory within their borders, it is the consensus of this conference: (1) That voluntary regional and national accrediting associations, through their activities, are rendering a service to institutions of higher education that transcends the services that can be rendered by the State agencies; and (2) that every effort should be made to develop close cooperation between voluntary and State agencies and among the voluntary associations themselves.

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BIENNIAL SURVEY OF EDUCATION IN THE UNITED STATES

1938–40

EDUCATIONAL LEGISLATION

VOLUME I

CHAPTER IV

FEDERAL SECURITY AGENCY

U. S. OFFICE OF EDUCATION

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1939 AND 1940

VOLUME I

CHAPTER IV

By

WARD W. KEESECKER

Specialist in School Legislation

FEDERAL SECURITY AGENCY, PAUL V. MCNUTT, Administrator

U. S. OFFICE OF EDUCATION, JOHN W. STUDEBAKER, Commissioner

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EDUCATIONAL LEGISLATION, 1939 and 1940

Introduction

THE EXTENT to which legislatures respond to educational needs is always a matter of concern to many people, especially to those whose work and interests are in the field of education. The purpose here is to review the highlights of legislative enactments during 1939 and 1940 affecting education in the various States. During these years the legislature of each State held one or more legislative sessions and many measures touching upon education were enacted.

It is impractical in a brief publication of this kind to make a detailed review of an analysis of all the educational measures enacted. This review is, therefore, limited principally to noteworthy examples of measures enacted and also to tendencies in legislation insofar as they may be discerned within a 2-year period.

For the most part educational legislation during the period continued in line with the tendencies noted in previous reviews. No new significant tendencies are in evidence. Here and there are discernible certain gains and extensions of school facilities previously inaugurated in different phases of education. A survey of educational legislation for the period shows, among other things, tendencies toward:

1. Increased State centralization of control over education. In many phases of education the control of the State is being extended—in matters of textbook adoption, courses of study, teacher tenure, school buildings, State aid, budgetary control, school business methods, etc.
2. Increased State responsibility for the support of education. This tendency is reflected in increased State appropriations for education in a number of States, and through the modifications of tax systems.
3. More emphasis upon efficiency and business methods in the management of schools, as reflected in legislation for the establishment of State-wide standards for school budgeting and accounting.

4. Improvement and extension of State school equalization programs. This tendency is revealed in legislation modifying the methods of distributing school funds, the transportation of school children, school building programs, etc.
5. Extension of free textbook systems principally to children in the elementary schools.
6. Extension and improvement of teacher-retirement systems. This is manifest in the initial establishment of State-wide retirement systems in a few States and the modification of systems already established.
7. Extension and development of teacher-tenure systems, principally through the use of the teacher-continuing contract method, and on the basis of merit.
8. Additional provisions for health and safety of school children, such as provisions for suitable school lunches for certain undernourished children, safety measures in the transportation of school children, instruction in matters of health, etc.
9. Provisions for extending the facilities for higher education of Negroes, through the development of State institutions therefor.
10. Extension of State control over private schools by requiring them to be licensed or approved by State educational authorities.
11. Increased Federal funds for vocational education, noted especially by funds for the training of civilian pilots and also for the education and training of defense workers.
12. Extension of provisions for adult education by the modification of State laws to authorize the use of school facilities for day or evening classes for persons over 21 years of age.

State Educational Surveys

The practice of legislatures to authorize the employment of authorities to conduct State-wide studies or investigations to obtain data on educational conditions as a basis for formulating legislative and administrative policies affecting the schools is one which has come into wide use in recent years. This practice on the part of legislatures continued unabated during the biennum herein reviewed and is now a characteristic feature of present procedure in educational legislation. During 1939 and 1940 a number of State legislatures made provisions for educational surveys, some of which are here mentioned.

The *Louisiana* Legislature in 1940 provided for a survey commission of five members appointed by the Governor to study the conditions and needs of the public schools of the State, including the State University and Agricultural and Mechanical College, and appropriated $20,000 therefor. In 1939 the legislature of *Minnesota* made provision for a committee of seven members from the Senate, three from the House, and one appointed by the Governor, to study educational needs and problems, to investigate all types and levels of education and the support of schools on all levels, and also to consider the codification of school laws. The legislature appropriated $15,000 for this purpose.

The *New York* Legislature created a committee to study the cost of education with special reference to State expenditures for the establishment of central schools in a process of merging small rural school districts, and appropriated $15,000 for such a study. The Legislature of *North Carolina* in 1939 authorized the Governor to appoint a commission of seven persons to prepare a program for adequate instruction for exceptional children in public schools and also requested the Governor to appoint a committee of five persons to recommend a teacher-retirement plan.

In *Utah* the legislature provided for a survey committee of 15 members appointed by the Governor to make a broad study of educational needs in the State and appropriated $25,000 therefor.

In 1937 the *Florida* Legislature authorized the creation of a school code committee to promulgate and recommend a new school code, which was submitted to the 1939 legislature and which was thereupon adopted. Many of the provisions recommended by the code committee were embodied in the new code adopted in the legislature of 1939. Among the principal purposes of the code were: (1) to present a logical arrangement of the school laws; (2) to eliminate duplicate and obsolete provisions; (3) to provide 4-year overlapping terms for county boards of education, and to provide that county board members shall represent the county at large rather than a district.

Constitutional Changes Relating to Education

During the biennum basic laws relating to education were amended in a number of States by the people themselves voting directly on certain issues. Examples of constitutional and initiative measures adopted relating to education are summarized below.

Arkansas authorized the voters of any city of not less than 5,000 population to levy a tax not to exceed 1 mill upon real and personal property for the maintenance of public libraries. *Florida* abolished ad valorem taxes for State purposes. *Kansas*, *Louisiana*,

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and *Michigan* provided a merit system for all State employees. Louisiana also authorized the reorganization of the State government, consolidating functions of numerous State agencies into 20 departments, including a department of education. The people of Louisiana also approved a measure to increase State University board members' terms from 7 to 14 years; and provided that residual severance tax moneys be placed in the public-school fund. *Nebraska* provided that the Superintendent of Public Instruction shall be a member of the Board of Educational Lands and Funds.

Initiative measures relating to education were approved by the electors in *Arizona* and *North Dakota.* In Arizona an initiative measure was adopted which required that the State levy for aid to public education shall provide $65 per annum per pupil for grammar schools and $95 per annum per pupil for high schools, instead of the $25 per pupil as previously provided by law. The electors in North Dakota approved an initiative measure which allocated all sales tax proceeds, exclusive of administrative cost, to the State Equalization Fund for education and to the Public Welfare Fund. In *Montana* the electors approved a referendum measure which provided a tax not to exceed 3½ mills for 10 years for the State University. (See p. 5 for change in Board of Education in North Dakota.)

State School Administration, Organization, and Functions

For many years State legislatures have manifested a willingness to have the State assume greater responsibility for the maintenance and control of schools. This tendency has usually resulted in (1) increased State support for schools and (2) a shifting of control from local or district school officials to State officials. These tendencies continued in evidence during 1939 and 1940 though apparently in less degree than during any previous biennum of the past decade.

The growth of State control over education manifests itself in numerous ways through legislative action. For example, the enactment of teacher-tenure laws or teacher-salary schedules which restrict local school boards in matters of personnel management; the enactment of provisions requiring approval of local school budgets by State school officers or State budgetary authorities; the granting of increased amounts of State funds for the support of schools in local communities which usually results in a corresponding growth of State control and supervision of schools. The totality of effect of the legislation resulting in various phases of education amounts to a strengthening of State instrumentalities of administration and super-

vision of schools. There are, of course, occasional exceptions to this general effect.

Perhaps the most noteworthy legal changes in State school organization during the period here reviewed occurred in North Dakota. By initiative petition the constitution of that State was amended so as to provide for a "State Board of Higher Education" vested with the control and supervision of all public higher education in the State. This new board consists of seven members appointed by the Governor, subject to certain restrictions, for 7-year overlapping terms. Thus by constitutional change this board is vested with the control, administration, and supervision of all public higher institutions in the State. It is the duty of the State board to appoint a "State Commissioner of Education" who shall be the chief executive officer of the board and who shall perform such duties as it may prescribe. This amendment was supplemented by a statute which vested in the newly established State board of higher education all the rights, powers, duties, obligations, and prerogatives heretofore vested in the Board of Administration as to vocational education and vocational rehabilitation, and as to the Extension Division of the North Dakota Agricultural College and its work and activities.

In 1940 the Legislature of *Louisiana*, through the enactment of an administrative code, reorganized and simplified the organization and operation of the executive departments of the State Government. The new code provided for 20 administrative departments, one of which is the Department of Education which shall consist of the State Superintendent of Education and the State Board of Education as theretofore existing; the teacher-retirement system; and the divisions of Americanization, Elementary and Secondary Education, and Higher Education which were established by the new law, and such other divisions as may be established under the administrative code. This new law stipulates that the State Board of Education "shall have and exercise the functions heretofore vested in the board for vocational education."

"By the administrative act of 1939 the Legislature of *Rhode Island* expressly provided that 'the Director of Education shall be the head of the Department of Education' who shall carry out the provisions of the school law heretofore carried out by the 'Director of Education and the Department of Education.'" This administrative act abolished the Division of Promotion and Supervision of Public Education, the Division of Americanization and Adult Education, the Division of Rehabilitation of Crippled and Blind, the Division of Colleges, and the Board of Regents, and conferred all their functions and powers and duties to the Director of Education and Department of Education. This act also added two representatives of industry to the Board

for Vocational Education. Furthermore, in 1940 the Legislature of Rhode Island transferred the Bureau of the Blind from the Department of Education to the Department of Social Welfare.

In 1939 the *Tennessee* Legislature abolished its previous State textbook commission and created a new "State Textbook Authority" composed of the Governor, the Commissioner of Education, and a third member appointed by the Governor for a 5-year term. The new textbook authority is empowered to adopt textbooks for elementary and secondary schools, but its contracts with publishers may not exceed a 5-year period.

In *New Mexico* the legislature required all accrediting agencies for the elementary and high schools operating in the State to act with the approval and under the direction of the State Board of Education and the Superintendent of Public Instruction. The State Board of Education was also empowered to examine and approve all plans and specifications for the repair or construction of school buildings of five rooms or less, except where the expenditure is less than $500.

The electors of the State of *Washington*, by an initiative, provided for the nonpartisan election of State and county superintendents of schools.

In *Kansas* the legislature provided for a new State Board of Regents. (*See* HIGHER EDUCATION.)

State School Finance Programs

The most characteristic feature of educational legislation in recent years consists in the extension of State responsibility for the support of education. The extension of State responsibility in this field continued in evidence during the 2 years here considered. Measures designed to improve State school aid programs commonly referred to as foundation programs won legislative approval in a number of States. Only a few examples can be given.

In *Alabama* the legislature made it the duty of the State Board of Education to calculate indices of the financial ability of each county, including cities therein, to support the minimum school program. The legislature prescribed the following complicated formula for calculating the economic index of the financial ability for each county:

> Section 1 . . . (*a*) Calculate for each county its percent of the state total for each of the following items: sales tax paid, passenger automobile license paid, state personal income tax paid, assessed valuation of public utilities, farm income, and value added by manufacture; (*b*) Find the sum total of following: percent sales tax paid multiplied by six, percent passenger automobile license paid multiplied by five, percent assessed valuation of public utilities multiplied by three, percent of state personal income tax paid multi-

> plied by one, percent farm income multiplied by one, and percent value added by manufacture multiplied by one, and divide the aforesaid sum total by seventeen and the quotient shall be the economic index for each county.

In section 2 of this Act the State Board of Education was directed to calculate for each county, and city, its percent of the assessed valuation of the State which "shall be the assessed valuation index of the county." Furthermore, the State Board of Education, under section 3, was directed to calculate an average index of the financial ability of each county to support the minimum school program, said index to be expressed in percent of the State total and to be calculated as follows:

> Add the economic index for each county as provided in Section 1 . . . to its assessed valuation index as provided in Section 2 . . . and divide the sum by the number two and the quotient shall be the average index of the financial ability of the county, including cities therein, to support the minimum school program.

The law provides that the State Board of Education shall recalculate this index once every 2 years.

The legislature stipulated that the total local funds available to provide the Minimum School Program for the entire State shall be determined by multiplying "one half of 1 percent by the total assessed valuation of the State on which taxes were due and collected for the fiscal year beginning October 1, 1938." The State Board of Education was directed to determine the amount needed by each county from the Minimum Program Fund as follows:

> To the sum total all funds from State appropriations and apportionments available for elementary and secondary schools in any and all school systems in the county, except apportionments from the Special Educational Trust Fund, add the local funds available to provide the minimum school program, (as above determined), and the grand total shall be deducted from the total cost of the Minimum Program for all school systems in said county as authorized by the Minimum Program Fund Act of Sept. 2, 1935.

The State apportionment for education was increased by more than $2,000,000 annually. The legislature authorized the Director of the State Department of Finance, the Commissioner of the State Department of Revenue, and the State Superintendent of Education to become a public-school corporation with authority to anticipate State tax collections for public education by the issuance of warrants and thus enable the payment of teachers' salaries on schedule.

In 1937 the Legislature of *Delaware* provided that, after July 1, 1941, all State moneys derived from taxes, fees, permits, licenses, fines, forfeitures or (with certain exceptions) from any other source, shall go into the general fund of the State. This legislative provision revised the previous State revenue law which provided specified taxes for different State agencies. For example, the State income tax, corpora-

tion and franchise taxes have been levied in Delaware since 1921 especially for the State school fund.

The *North Dakota* Legislature enacted a new State Equalization Fund Law. The equalization fund was substantially increased. The emergency fund for distressed school districts was reduced and a new formula for distribution of funds was stipulated. Under the new formula "no district shall participate in the emergency fund unless and until it is shown to have a reasonable teacher-pupil ratio"; and in determining what shall constitute a reasonable teacher-pupil ratio, "the Superintendent of Public Instruction shall consider the type and size of the school, its proximity, and the transportation facilities to adjacent schools." In order to qualify for aid on the emergency fund basis, "schools with seven or more teachers should maintain a teacher-pupil ratio of at least 25 pupils per teacher; in smaller schools, a teacher-pupil ratio of less than 20 pupils per teacher shall be considered unreasonable." Under the new law, schools participating in the emergency fund should have a minimum enrollment of 25 pupils for 4 years of high-school work, and a minimum of 15 pupils for 2 years of high-school work.

The Legislature of North Dakota also provided that the administration of the High School Correspondence work and the funds appropriated therefor, accruing to the Equalization Fund, shall be vested in the State Board of Higher Education. The North Dakota Legislature also revised the allocation of the revenue from the 2 percent sales tax so as to credit all of it to the General State Fund, whereas formerly $3,500,000 thereof was earmarked for State School Equalization Fund.

The *New Mexico* Legislature revised its equalization law, stipulating that "no county shall receive from the State School Equalization Fund moneys in excess of $1,400 per classroom unit, until all other counties have each received a similar sum from the said fund." The legislature of that State also directed the State Treasurer to withdraw from the Equalization fund and place in an emergency fund $350,000 for the biennium ending June 30, 1942, for the purpose of meeting unforeseen shortage in school maintenance budgets. No county was allowed to spend for transportation of pupils more than 25 percent of its total maintenance budget.

In *North Carolina* the Legislature changed its policy of enacting at each biennial session a measure known as the "School Machinery Act" [1] and stipulated that this act shall remain in force until repealed or amended by subsequent acts of the legislature. Thus the School Machinery Act of that State was placed on a permanent basis. The School Machinery Act as revised authorized the payment of teachers on a

[1] In North Carolina the "School Machinery Act" embodies the principal legal provisions for the administration and maintenance of the State minimum school program.

12-month basis in such administrative units as shall request the same on or before October 1 of each school year; and it also provided that "In the employment of teachers, no rule should be made or enforced which discriminates with respect to the sex, marriage, or nonmarriage of the applicant." The School Machinery Act was further revised to require all county and city administrative units to purchase all supplies, equipment, and materials "in accordance with contracts and/or with the approval of the State Division of Purchase and Contract." By a separate appropriation act substantial increases were made to carry out the provisions of the State School Machinery Act.

In 1939 the Legislature of *Utah* provided for a new "Uniform School Fund" which shall consist of: (*a*) Interest on the State School Fund; (*b*) Escheats and forfeitures and sales of all property accruing to the State thereby; (*c*) All unclaimed dividends of any corporation of the State; (*d*) The sales of timber and minerals and other property from school and State lands not granted for specific purposes; (*e*) The revenue accruing under the Act of Congress of February 25, 1920, known as "The Leasing Act"; (*f*) The rentals derived from renting of school lands and other State lands; and (*g*) All other constitutional or legislative allocations to said fund. The legislature prescribed the manner of apportionment of the Uniform School Fund and provided that approximately 85 percent of the amount is granted on the basis of average daily attendance.

In 1939 the *West Virginia* Legislature enacted a new method of distributing State aid for elementary and secondary education. This enactment is a recent example of extensive and detailed legislative control over the administration of State funds for elementary and secondary schools. Therefore the provisions of this law are set forth here somewhat at length. The law states that "In enacting this method . . . the legislature has the following specific purposes:"

(1) To provide a distribution that will give to each county funds reasonably necessary to operate its schools on a basis that accords with the relative educational needs of the several counties;

(2) To eliminate "as far as possible . . . the need for the exercise of State administrative discretion as to the requirements of the several counties";

(3) To give each county "every possible incentive to the constructive development of its school system, and to place with the county boards of education the responsibility for the preservation and improvement of the standards of local education"; and

(4) To "coordinate the administration of State aid more closely with the general fiscal policies of the State."

For the administration of these purposes the legislature established a State Board of School Finance composed of the State Superintendent of Schools (chairman), the State Tax Commissioner, and the State Director of the Budget.

Under the new West Virginia plan, for the first distribution of State aid, the total of the school foundation program for a county shall be obtained by:

(1) Multiplying the number of weighted pupils for the county by 51⅗;
(2) Determining ¼ of the total amount expended by the county for transportation of pupils, excluding the purchase of buses;
(3) Adding the amount determined under (1) and (2) above; except that for no county shall the amount allowed under (2) be less than $1.75 nor more than $4.50 per weighted pupil.

For the Second and other distribution of State aid, the total of the foundation program for a county shall be obtained by:

(1) Multiplying the number of weighted pupils for the county by each of the following:
   (a) 50½.
   (b) 500 times the total number of nonisolated elementary schools in the State by the total number of weighted pupils in the State.
(2) Determining the amount needed by each county to meet its transportation costs, including costs for buses. In determining these costs the State Board of Finance shall apply uniform rules in each county in measuring transportation needs, and shall take into consideration: the number of elementary and secondary pupils transported, the length of bus routes, the condition of buses and equipment, the average size of the buses needed, the condition of the roads traveled, the number of schools to which pupils are transported.
(3) Adding the amounts determined under (1) and (2), except that the total, for all counties, of the amounts determined under subsection (2) above, shall not exceed 3½ times the total number of weighted pupils in the State.

The Board of Finance shall then determine for each county 95 percent of "the amount obtained by multiplying the classified assessed valuations of real, personal, and public utility property in the county . . . [as of 1938] by the rates of levy authorized for the current school purposes as of the current year." The Board of Finance shall then proceed to allocate the amount available for distribution as State aid among the several counties as follows:

(1) Allocate to each county (*a*) 45 percent of the cost of the foundation program for that county, or (*b*) an amount equal to the difference between the cost of the said program and the local share of revenue for that county; whichever of (*a*) or (*b*) is greater.
(2) Allocate the amount remaining for distribution as State aid among the several counties in a uniform proportion to the amount actually levied for current school purposes in each county during the preceding year. The amount receivable by a county under this subsection shall be computed by multiplying the amount available for distribution to all counties by the amount actually levied for current school purposes by the county, divided by the amount actually levied for such purposes by all counties.

The West Virginia State Board of School Finance is directed to formulate and prescribe a uniform system of school district budgeting for the use of all county school districts which budget is to include certain specified items. (*See* next page.) County boards of education are required to submit their budgets on a certain date, and no county budget shall be officially adopted until after written approval of the State Board of Finance has been received. The State Board of Finance may require such revision of the prepared county budget as may be necessary for the correction of the levy estimate as required by the Tax Commissioner. The State Board of Finance may also require a revision of the budget so as to assure a standard term. For the purpose of this Act the State Board of Finance may require county boards of education to:

(1) Contract for payment of teachers at not in excess of the monthly salaries fixed by law;
(2) Reduce the amount budgeted for maintenance so as to guarantee the payment of the salaries for the standard term;
(3) Postpone permanent improvements and capital outlays; and
(4) Adjust amount budgeted in any way so as to assure the maximum length of term possible.

Furthermore the State Board of Finance is directed to formulate the requirements of a uniform system of management accounting for the use of county boards of education. The requirements shall include at least:

(1) The actual accounting of all revenue and other receipts.
(2) The accounting of expenditures under the several items of appropriations.
(3) Monthly and quarterly reports of rate of expenditures, encumbrances, and free balances.
(4) Methods of accounting practice and procedures to be followed in the uniform system.

State Control Over School Expenditures, School Budgets, Business Efficiency, Etc.

One of the most outstanding enactments having to do with State control over school expenditures occurred in West Virginia. In the preamble creating the State Board of School Finance the legislature said:

> Because of the adoption of the "Tax Limitation Amendment" it has become necessary for the State to participate to an increasing degree in the financing of the free public schools, . . . In consequence of this State's investment in local education, the State has acquired a paramount interest in the sound and stable management of the financial affairs of county school districts so that the maximum effectiveness of education may be obtained from the expenditure of the limited funds available. . . . This article is enacted to

develop improved methods of financial administration and to bring increased financial guidance and assistance to the management of county school affairs.

Because of this somewhat new organization in school administration a brief summary of its functions are mentioned:

(1) Formulate and prescribe a uniform system of school-district budgeting.
(2) Approve the budget of county boards of education (no such budget can be valid until so approved). Before approving any county school budget the State Board of Finance shall formulate and prescribe a uniform system of school-district budgeting for use of all counties which shall include:
  (a) Itemization schedules for estimating all anticipated revenue and receipts.
  (b) Itemization schedules for estimating all anticipated requirements for expenditures.
  (c) The form, classification, and itemization of budget items for appropriation purposes.
  (d) Expenditure schedules for allotment of amounts of proposed expenditures.
  (e) A budget calendar fixing the dates by which schedules shall be prepared, budget adopted, and reports made.
  (f) Methods and procedures of budgeting to be followed.

All school budgets must meet the approval of the State Board of Finance, and no county school budget shall be valid unless so approved. It is noteworthy that the legislature stipulated that in the exercise of its powers "the board of finance shall not substitute its discretion and judgment for that of a county board of education with respect to the desirability or reasonability of a lawful school expenditure if the provisions of law and the orders of the board of finance are complied with by the county board."

The *Alabama* Legislature in 1939, for the purpose of promoting economy and efficiency, established a budget system for the public schools of each county and city. The budget prepared and adopted by each school board shall be submitted to the State superintendent of education according to the classifications and items specified on forms provided by him and in accordance with regulations of the State board of education. No such budget shall be official until a copy of it has been filed with and approved by the State superintendent of education.

In 1939 the Legislature of *Delaware* established a commission to be known as The Budget Commission to consist of the Governor, the auditor of accounts, the State Treasurer, and the State Tax Commission. The Governor shall be the chairman of the said Commission. The Commission is empowered and directed to audit, inspect, and examine the accounts and the affairs of and the records of any agency of the State, at such times as it deems expedient for the supervision of the budget and shall require all agencies to submit estimates showing the amounts and purposes of all anticipated

expenditures that are to be made by them respectively. This law requires fiscal reports, statements of balances on hand, estimates of receipts, and information in any manner pertinent to the fiscal affairs of the State from the State Treasurer and State auditor. The University of Delaware, State College for Colored Students, State Board of Education, Teachers' Retirement Commission, Industrial School for Colored Girls, and Delaware Industrial School for Girls, are included under the law. The Board of Budget Directors is abolished and the powers and duties provided for the said Board in Chapter 158, Revised Code of 1935, are incorporated and made part of the powers and duties of the Budget Commission insofar as they are not inconsistent with the provisions of this law. (*See* HIGHER EDUCATION for North Dakota.)

Higher Education

The prevailing tendency towards State centralization of control over education is especially noticeable in those enactments which relate to both public and private higher educational institutions. This tendency is revealed in a number of enactments during 1939 and 1940.

A recent and fundamental change affecting the centralization of State control over higher education occurred in North Dakota. Effective July 1, 1939, a State Board of Higher Education was established in North Dakota by a self-executing constitutional amendment adopted in 1938. This board is vested with the control and administration of all State institutions of higher education now existing or which may hereafter be established. This new constitutionally created board consists of seven members appointed by the Governor by and with the consent of the Senate, from a list of persons selected by the unanimous action of the President of the State Education Association, the Chief Justice of the State Supreme Court, and the State Superintendent of Public Instruction. The Board of Higher Education is vested with all the duties, rights, and powers previously granted to the Board of Administration concerning higher educational institutions of the State. Furthermore, the State Board of Higher Education was empowered to "organize or reorganize, within constitutional or statutory limitations, the work of each institution under its control, and do each and everything necessary and proper" for their efficient and economic administration. The constitutional amendment also provides:

1. That the State Board of Higher Education shall prescribe standard systems of accounts and records covering the operation of the higher educational institutions.

2. That each higher educational institution shall submit its budget to the State Board of Higher Education which shall consider and "shall revise the same as in its judgment shall be for the best interests of the educational system," and thereafter shall prepare and present to the State Budget Board and to the Legislature "a single unified budget covering the needs of all the institutions under its control."
3. That the Board of Higher Education shall have control of expenditures of the funds belonging to and allocated to such institutions and also those appropriated by the Legislature therefor.
4. That the Board of Higher Education shall appoint for a term not exceeding three years a State Commissioner of Higher Education who shall be the chief executive officer of the Board.

Recent legislation in *Oklahoma* affords another example towards the unification and supervision of State control over higher education. In 1939 the legislature of that State created a "Board of Regents of Oklahoma Colleges" consisting of seven members appointed by the Governor by and with the consent of the Senate. The newly created board is vested with the "supervision, management, and control of all State normal schools" (teachers colleges) and also the Northeastern Oklahoma Junior College at Miami. The Oklahoma Legislature also stipulated that the Southwestern Normal School at Weatherford shall be known as the "Southwestern State College of Diversified Occupations" and provided that its supervision, management, and control shall be under the State Board of Education. The legislature of Oklahoma also abolished the Board of Regents of the Eastern Oklahoma College located at Wilberton and vested the supervision and control of this institution in the State Board of Agriculture, and stipulated that the name of the institution shall be changed to the "Eastern Oklahoma Agricultural and Mechanical College." (See *Junior Colleges.*)

In 1939 the Legislature of *Kansas* established a new State Board of Regents for certain State educational institutions, said board to consist of nine citizens appointed by the Governor with the advice and consent of the Senate. All the jurisdiction, powers, and duties theretofore conferred by law (Ch. 259, 1925 Laws) upon the State Board of Regents relating to the University of Kansas, the State College of Agriculture and Applied Science and all branch experiment stations thereof, and the State Teachers Colleges are conferred upon the new State Board of Regents, except that all powers and duties conferred on the State business manager relating to said educational institutions shall be exercised by the said manager by and through the newly created board of regents.

In 1940 the *Louisiana* Legislature enacted a State University Code to govern the selection, powers, and functions of the Board of Supervisors and the organization and administration of the State University and Agricultural and Mechanical College. The State

Legislature of *Montana* provided for a tax levy of 3½ mills for the support, maintenance, and improvement of the State University. In 1939 the Legislature of *Nebraska* amended its provisions so as to require that students seeking admission to any college of the State University shall, precedent to admission, complete such requirements as may be prescribed by the Board of Regents and no applicant who shall fail to pass an examination in any part of such requirements shall be admitted. The *Oregon* Legislature stipulated that the names of the State Normal Schools shall be changed to "State Colleges of Education."

In 1939 the Legislature of *Rhode Island* created a board of trustees to govern the Rhode Island State College and Rhode Island College of Education. The new Rhode Island Board of Trustees is composed of the Director of Education ex officio, and 6 other members 4 of whom shall be appointed by the Governor, and 2 alumni members to be elected 1 from each of the said colleges by their respective alumni associations. Previously the Board of Trustees above-mentioned was composed of 10 members, namely, the Governor, Lieutenant Governor, Chief Justice of the Supreme Court, the Director of Education, the State Budget Director, and 5 others appointed by the Governor. The Legislature of *South Dakota* empowered the State Board of Regents of Education to determine whether the State Normal Schools shall be allowed to expand their curriculum into 4-year institutions. Previously the Supreme Court, in 1931, held that these institutions could not under their charters become 4-year institutions, and also a previous legislative act to make them 4-year institutions was defeated by popular referendum.

The Legislature of *Tennessee* in 1939 authorized the State Board of Education to prescribe a 4-year course of training for the Austin Peay Normal School.

Entrance requirements and tuition.—In 1939 the Legislatures of *North Dakota*, *Texas*, and *Utah* enacted provisions authorizing increases in tuition fees in certain higher educational institutions. *Texas* also authorized the State superintendent of public instruction to set up rules of college-entrance requirements. In 1940 the Legislature of *Virginia* amended its law authorizing free tuition in State educational institutions to orphans of veterans of World War I so as to extend the free tuition privileges to minors of disabled veterans where such disability is due to services in that war.

Higher educational facilities for Negro students.—In 1939 the Legislature of *Missouri* amended the law relating to Lincoln University and provided that the University shall be under a Board of Curators composed of nine members appointed by the Governor for 6-year terms. Moreover, the legislature authorized and directed the Board of Cura-

tors of Lincoln University to reorganize the institution so that it shall afford to the Negro people of the State opportunity for training up to the standard furnished at the State University and for this purpose authorized the purchase of additional land and the erection of additional buildings, to open and establish any new school, department, or course of instruction.[3]

The Legislature of *Mississippi* in 1940 established a State Negro training school at Jackson to give instruction in the art and practice of teaching in all branches of study which pertain to health and rural and elementary education, and such other studies as the Board of Trustees of State Institutions of Higher Learning, in cooperation with the State Department of Education, may prescribe. In *Virginia* the legislature in 1940 authorized the State Board of Education, in lieu of paying the expenses necessary for any Negro student to pursue studies in institutions outside the State but not available within the State, to pay such student, or the institution attended by him, a sum equal to the amount appropriated for the current year per pupil in the State institution of higher education to which admission was sought and denied or in which the graduate or professional course desired is offered.

Junior Colleges

Legislation was enacted in 1939 in a few States affecting the establishment and operation of junior colleges. Among the States in which noteworthy legislation in this field occurred are Idaho, Massachusetts, Minnesota, Montana, and Oklahoma:

The *Idaho* Legislature enacted provisions for the establishment of junior colleges comprising 2 years of work above the high school as a part of the public-school system of the State. This enactment provided that a junior-college district shall consist of: (1) One or more school districts or counties having an aggregate high-school enrollment of not less than 800 pupils; and (2) property having an assessed valuation of not less than $10,000,000. Such junior college district may be organized by a vote of the qualified electors of the proposed district voting at an election called therefor, which shall be called upon petition of not less than 300 electors and upon the approval of the State Board of Education. Where the establishment of a junior college is approved by the majority of the electors, the State board shall appoint the members of the first junior college board who shall serve until the

[3] This legislative action followed soon after the famous decision of the Supreme Court of the United States in a Missouri case which held that it was the duty of each State to maintain within its jurisdiction facilities for higher education of Negro students equal to those maintained for white students (State of Mo. ex rel Gaines v. Canada et al., 59 S. Ct. 232, Vol. 6, U. S. Law Week, page 459; Dec. 12, 1938).

election and qualification of their successors. The board shall consist of five members. The State Board of Education shall approve all courses of study offered in junior colleges, and shall establish minimum standards of requirements for entrance and graduation, and for qualifications of teachers. The tuition at such junior colleges shall be $50 per annum for resident pupils of the district; $75 for nonresidents but resident of the county in which college is located; and not over $100 for other students. For the maintenance of a junior college, the college board of trustees may levy a tax not to exceed 20 cents on each $100 of assessed valuation.

The Legislature of *Massachusetts* stipulated that the authority to use the designation of "junior college" shall be granted only to an incorporated educational institution having power to confer the degree of Associate in Art or Associate in Science, or both, and only when such junior college has a competent faculty, adequate equipment, and suitable courses of instruction of at least 2 years in preparation. This act also forbids junior colleges to grant any other than the associate degrees.

In *Montana* the legislature enacted provisions to authorize, under certain conditions, the establishment of junior colleges in county or school districts having an assessed taxable valuation in excess of $3,000,000. This act provided that upon a written petition of not less than 25 percent of the registered voters of the school district the board of education thereof shall submit to the State superintendent of public instruction for his approval the question concerning the desirability of establishing a department of junior college work consisting of 2 years beyond the high-school course. Such a plan may be submitted by the board on its own initiative without the filing of any petition. Upon approval of the junior college plan by the State superintendent and by a majority of the vote cast at an election called therefor, the board of education of such county or district shall proceed to establish the plan. Before any such junior college shall be established it must finally be approved by the State Board of Education. The State superintendent of public instruction shall have and exercise the same supervision, control, and power over junior colleges established under this law as he now has over the other departments of the public-school system. The law prescribes certain minimum standards for junior colleges pertaining to laboratory and library equipment, the qualification of instructors, size of enrollment, courses of study offered, the length of the school term, and the admission of students.

In *Minnesota* the legislature amended its junior college law to authorize two or more school districts to cooperate in the maintenance of a junior college, provided that application therefor is made to and approved by the State Board of Education. Before approving any

application or plan for the establishment of a junior college the State Board is required to make a survey to determine the need, ability, and facilities of the districts proposing to establish such college. In *Oklahoma* the legislature authorized boards of education to establish courses above the twelfth grade. "The State Board of Education and/or the State Co-ordinating Board shall establish a committee to supervise courses above the twelfth grade on all matters relating to educational efficiency." All institutions of higher learning in the State are authorized to accept as of standard worth grades and credits which may be awarded to students completing courses above the twelfth grade.

Curriculum

During the biennium many legislative changes occurred which affect the courses to be offered and the subject matter taught in public schools. Likewise there were legislative enactments relating to patriotic programs, observance of special days, etc., which ordinarily are not thought of as courses of study, but which are intended to influence the activities and attitudes of pupils.

Patriotism, observance of special days, flag display, etc.—In 1939 the Legislature of *Connecticut* required the observance of Armistice Day by suitable exercises to be held in the public schools, emphasizing the historical events connected with the signing of the Armistice. The legislature of that State also required the board of education of each town to provide a United States flag for each schoolroom and to require its display therein during each school day, and provided a penalty for each school member who failed to enforce these provisions. In *Delaware* the legislature required that the Governor issue a proclamation calling upon all teachers to arrange special programs during American Education Week and calling upon the people of the State to observe this week in some fitting manner. The *Kansas* Legislature provided for the observance of Flag Day on June 14 and required the display of the flag on public buildings. In *Maine* the legislature authorized the Governor to appoint a commission of eight members whose duty it shall be to promulgate international good will in education. The Legislature of *Oklahoma* provided for the observance of Flag Day and required the display of the United States flag on certain buildings and other places, including the display of the flag every school day at every schoolhouse. The *Puerto Rico* Legislature in 1939 declared the first Friday of May of each year as Teachers' Day and declared that on this day preferential attention shall be given in the schools as public demonstration of homage to school teachers. The Governor shall promulgate a proclamation rendering tribute and admiration for the work of teachers. The Legislature of *Rhode Island*

made it the duty of teachers in the public schools to prepare a program of patriotic exercises for the proper observance of the Grand Army Flag Day, and also an appropriate patriotic program for the observance of Rhode Island Independence Day; previously these programs were to be prepared by the Director of Education. In *South Carolina* the legislature made it the duty of every school or educational institution to display the flag of the United States at such times and places and under such rules as may be directed by the State Superintendent of Education; the Superintendent is also directed to make rules not inconsistent with the National Flag Code for the display of the flag. The Legislature of the State of *Washington* declared November 11 to be a school holiday and known as Armistice and Admission Day and provided for the suitable observance thereof in the schools of the State.

Health and safety education.—In 1940 the Legislature of *Kentucky* made it unlawful for any person connected with the public schools to use or cause to be used, read, or taught in the public schools any textbook which criticizes, condemns, or contains derogatory statements which could be discrediting, discriminating, or harmful to any legally constituted school or system of healing, science, or profession in the State of Kentucky. In 1939 the *Michigan* Legislature amended its school law so as to require the Superintendent of Public Instruction to promote in the public schools of the State, in the normal colleges and universities of the State, and among adult groups, scientific instruction as to the physical, psychological, and sociological effects of alcohol and the benefits of temperance; and to prepare and publish instructional and informational materials therefor. The Legislature of *South Carolina* in 1939 required that a definite program of safety instruction be included in the curriculum of each primary and elementary grade in the public schools of the State. In 1940 the Legislature of *Virginia* authorized the State Board of Education, if it deemed advisable after a thorough study, to provide public-school training in first aid to injured. The Legislature of *Utah* provided "that persons employed to give instruction and guidance to young people under eighteen years of age shall so arrange and present their instruction, guidance, and plans for pupil and student thinking, discussion, decision, and activity as shall give special emphasis to the harmful effects upon individual and society of alcoholic beverages, including beer containing alcohol, tobacco, and all other forms of narcotics as shall lead such young people away from their use." This act also required the State Superintendent of Public Instruction to prepare teaching materials, bulletins, courses of study, and visual education aids to accomplish the purpose of this law.

Moral and religious instruction.—The Legislature of *Maine* in 1939 and also the Legislature of *Kentucky* in 1940, empowered the boards of education of their respective States to authorize a complete survey of all pupils attending public schools, and to ascertain therefrom those pupils who desire moral or religious instruction and who have the consent of their parents or guardians for such instruction; and to fix a day each week on which pupils may be excused for 1 hour in order to attend their respective places of worship or some suitable place to receive moral instruction in accordance with the religious faith or preference of the pupils. The Legislature of *Puerto Rico* in 1939 requested the Insular Commissioner of Education to organize and promote the teaching of morals and good habits to public-school children and also to give moral and civic instruction to heads of families under the auspices of the School of the Air, Bureau of Adults, and the Parent-Teacher Association.

In *Utah* the legislature required that "all persons engaged to give instruction and guidance to people under 18 years of age, shall so arrange and present their instruction, guidance and plans for pupil and student thinking, discussion, decision, and activity as shall give special emphasis to common honesty, morality, courtesy, obedience to law, respect for the Constitution of the United States, and the constitution of the State of Utah, respect for parents and home, other skills, habits, and qualities of character which will promote an upright and desirable citizenry and which will better prepare our youth for a richer, happier life." The State Superintendent was directed to prepare teaching aids and materials to assist in carrying out the provisions of this act.

Miscellaneous.—The Legislature of *Nebraska* amended its school law relating to the curriculum by eliminating bookkeeping, drawing, and mental arithmetic from the foundation subjects in the elementary school and by adding hygiene to the list of subjects specifically required to be taught. The legislature also stipulated that the high-school course of study shall be the manual issued by the State Superintendent; previously the manual was required to be issued jointly by the University of Nebraska and the State Superintendent. The Legislature of *Massachusetts* added a new section to its school law relating to the teaching of modern language in certain high schools by authorizing public high schools having not fewer than 150 pupils to teach any modern language if the patrons or guardians of not fewer than 25 pupils request it in writing. The Legislature of *Arkansas* required all State higher educational institutions to give instruction in nature study and conservation of natural resources and required all students preparing to teach to take such courses. This act also required instruction in conservation of natural re-

sources in all public high schools and required all pupils in such schools to take such instruction; furthermore, the act required nature study as a fundamental requirement for promotion in at least two of the elementary grades. In 1939 the Legislature of *Maryland* empowered the Governor of the State to appoint a commission to make a survey of the public elementary and high schools and teachers colleges of the State, to study the obligations of the public-school system with a view to adjusting the school program to meet the present conditions. This commission was furthermore authorized and directed to study such problems as the length and scope of the school program, including curriculum offerings, vocational preparation and guidance, adult education, recreational, aesthetic, and cultural opportunities, health and social services, and adjustments to higher education.

In 1940 the *Rhode Island* Legislature stipulated that the Director of Education shall make a study of the curricula offered by the public schools for the purpose of planning a more practical educational program. The object of the program shall be the training of pupils so that they may be "qualified to seek specialized occupations in the fields of business, industry, manufacturing, and various trades, or to pursue further studies for the various professions. Through vocational guidance counselors within the schools each pupil shall receive assistance in selecting studies which will help to fit him for some specialized occupation or profession upon his graduation from high school or college." The *Wisconsin* Legislature in 1939 authorized school boards to organize "school safety patrols and with the permission of the parents to appoint pupils as members thereof," to encourage pupils to exercise caution in crossing streets. This act specifically states that it does not authorize any school safety patrol member to act as director of vehicular traffic.

Textbooks

Current textbook legislation reflects a gradual extension of free textbook systems. During the biennium there were also a number of enactments designed to improve textbook systems already existing.

The *Indiana* Legislature authorized school boards which furnish free books to elementary school pupils to furnish free books to high-school pupils upon petition of 20 percent of the voters. In *Kansas* the legislature authorized district boards of education to furnish State textbooks free of cost to children attending any grade schools who are unable to purchase them; previously this authorization was limited to such children in any "public" grade school.

In 1940 the *Mississippi* Legislature established a State textbook system under which textbooks "shall be distributed and loaned free of

cost to the children of the first eight grades in the free public elementary schools of the State, and all other elementary schools located in the State, which maintain elementary educational standards equivalent to the standards established by the State department of education for the State elementary schools." The legislature of that State also authorized the State Textbook Purchasing Board to sell advertising space on protective covers of free textbooks and to accept only those advertisements which are in keeping with the spirit of the schools in promoting the children physically, mentally, and morally, and also provided that no sectarian, un-American, or immoral advertisement shall be permitted. In 1939 the *Missouri* Legislature provided for county school textbook commissions, which is the county board of education in all counties in which such a board exists. In counties not having a county board, the textbook commission shall consist of the county superintendent and two teachers.

In *North Carolina* the legislature enacted what is known as The Permanent Improvement and School Book Bond Act of 1939 to authorize a $1,500,000 bond issue for the purchase of free basal textbooks and to reimburse the State treasury for advances made therefor.

Oregon amended its textbook laws so as to provide that county school superintendents may serve on the textbook commission and to permit boards of directors in the school districts, under certain restrictions, to adopt textbooks other than those adopted by the State Textbook Commission. This act also gave the Superintendent of Public Instruction authority to make regulations to postpone the introduction of new textbooks during a reasonable period of transition from use of one course of study to the use of a new course.

The *Tennessee* Legislature in 1939 appropriated $325,000 annually to provide textbooks to the first, second, and third grades of all public schools and placed the administration of this fund in a board consisting of the Governor, the Commissioner of Education, and the President of the State Education Association. The Legislature of Tennessee also abolished the State Textbook Commission established in 1937 and created a State Textbook Authority to be composed of the Governor as chairman, the Commissioner of Education, and the third member appointed by the Governor. This new Textbook Authority is empowered to adopt such textbooks as may be deemed desirable in the elementary and high schools of the State and to advertise for bids for the furnishing of textbooks, to make reasonable rules and regulations in connection therewith, to adopt a form of contract and bond for successful contractors, and to employ assistants in the examination of books. This act made it unlawful for any teacher or school to use or permit to be used any textbook upon any subject other than those adopted by the State Textbook Authority.

The *Texas* Legislature stipulated that the State Board of Education shall, by vote of at least six of its members, adopt a multiple list of textbooks for use in the high schools in teaching the German, Czech, and French languages (previously only a majority vote was necessary). This act also required a vote of six members to adopt multiple lists of textbooks in teaching the subjects of commercial arithmetic, bookkeeping, and typewriting, and band and orchestra music. The State Board of Education was furthermore directed to adopt, by a vote of at least six of its members, for use in the public high schools, one or more (not to exceed five) books containing the "basic charters and documents of American Democracy, both State and Federal, and a discussion of them"; such book or books to be used by the schools as collateral or supplementary reading in the courses in history and government.

School Transportation

The transportation of school children is always a matter of much concern to both school officials and parents. In 1939 *New York*, *Oregon*, and *Missouri* were among the States to join the list of States which approve public transportation of pupils attending private schools.

A number of States have enacted provisions to promote safe construction and operation of school buses. Among these States are New Hampshire, Georgia, Pennsylvania, Tennessee, Utah, Washington, West Virginia, Wisconsin, and Wyoming. *West Virginia* made it unlawful for any person under 21 to operate a school bus and required all drivers of school buses to obtain a special chauffeur's license unless he has at least 1 year's experience as an operator of a motor vehicle.

The Legislatures of *Kentucky* and *Oregon* enacted laws which authorized school boards to purchase public liability and property damage insurance covering the operation of school buses. In *New Jersey* the State Board of Education was directed to prescribe the amount of liability insurance to be carried by contractors or bus drivers engaged in the transportation of school children. The *Wisconsin* Legislature stipulated the amount of personal and property damage insurance which school boards must carry to cover school bus accidents. *West Virginia* extended its act of 1935 permitting county boards of education to insure against the negligence of school bus drivers so as to cover drivers of trucks and other vehicles operated by said boards.

The *Nebraska* Legislature provided that when a school board employs a driver to transport pupils, the driver shall be employed as an independent contractor and assume all liability arising from his negligence and shall give a surety bond not exceeding $10,000, the premium of which shall be paid out of the school district treasury.

School Attendance

The Legislature of *Pennsylvania* reduced the maximum school attendance age from 18 to 17 years of age, and also made minor changes in the provisions for exemptions from school attendance. In *South Dakota* school boards were authorized, in their discretion, to permit the enrollment of pupils in public school who shall have attained the age of 6 on or before the first day of January of the school year in which enrollment shall be authorized.

The Legislature of *West Virginia* raised the educational exemption from compulsory school attendance from the eighth grade to the completion of a senior high school where such a school is accessible; and required children to continue in school until 16 years of age unless granted a labor permit by the county superintendent. Furthermore, county superintendents were forbidden to issue labor permits to any youth of normal intelligence under 16 years of age unless such youth has completed the eighth grade.

In *Montana* the legislature took steps to promote the educational opportunities of youth unable to attend a suitable school on account of distance. For this purpose the legislature established a State correspondence school to serve the needs of eighth grade graduates who because of remoteness or inability are unable to attend a regular high school.

Educational Facilities For Handicapped Children

During the biennium more than the usual number of States enacted measures affecting the educational administration and facilities relative to handicapped children.

In *Kansas*, *Missouri*, *New Hampshire*, *Virginia*, and *Wisconsin*, State responsibility for the administration of educational facilities for certain handicapped children in each State was transferred to another State agency. *Kansas* provided that the jurisdiction, powers, and duties of the State Board of Administration relating to the Kansas Institution for the Education of the Deaf and Dumb, the Kansas Institution for the Education of the Blind, the Kansas Vocational School at Topeka, and the Western University of Quindaro are transferred to and conferred upon the State Board of Regents. *Missouri* authorized the Social Security Commission to take charge and provide the proper training of handicapped children between 8 and 16 years of age; formerly this function was vested in the State Board of Charities and Corrections. In *New Hampshire* the legislature transferred the administration of State aid, including education, to the deaf and dumb from the State Board

of Public Welfare to the State Board of Education. *Virginia* abolished the Board of Visitors of the Virginia State School for Colored Deaf and Blind and placed the institution under the control, management, and supervision of the State Board of Education. In *Wisconsin* the legislature transferred the control of the State schools for the blind and the deaf from the State Board of Control to the State Superintendent of Public Instruction.

In 1939 the Legislature of *Arkansas* made an appropriation for the improvement of the State School for the Deaf and Blind, including the purchase of a needed site for a primary and kindergarten building, and for the construction and equipment thereof, and also for the construction and equipment of a vocational building. In *California* the legislature authorized "spastics" as well as deaf children to be admitted to public schools or classes at 3 years of age, defined 1 day of attendance as 4 hours of pupil attendance for pupils given individual instruction, and defined "excess cost" for purpose of State reimbursement to school districts providing for physically handicapped children. Moreover, the California Legislature authorized county superintendents of schools to provide for the education of physically handicapped pupils (*a*) in emergency elementary school; (*b*) by the employment of emergency teachers for the regular district schools; (*c*) by the maintenance of special classes in secondary grades; (d) by the employment of home instructors to give individual instruction in the home or at the bedside in institutions; (*e*) by cooperation with the Bureau of Vocational Rehabilitation of the State Department of Education; or (*f*) by contract with the county superintendent of schools of another county or with the governing board of any school district in another county.

In *Delaware* the legislature required superintendents and teachers of every school district in the State to report to the State Board of Education all cases of handicapped children; and made it the duty of the State Board of Education to provide and maintain special facilities to meet the need of such children. In *Michigan* the legislature provided that nonresident children who by reason of being blind, deaf, crippled, or epileptic shall have the special instruction which is provided by day schools or classes, and provided State reimbursement therefor to the total average per capita cost for furnishing such instruction, service, supplies, and equipment not to exceed $300 per pupil per annum. In *New Hampshire* the State Board of Education was required to investigate the needs of all handicapped children and to make such rules and regulations relative to their education as may be necessary for their proper development. The board was also required to furnish suitable transportation for such children. The State Board of Education was author-

ized to cooperate with the Federal Government in the development of any plan for the education of handicapped children.

In *New York* the legislature provided that all physically handicapped children, irrespective of the school they legally attend, shall be granted transportation. Dental treatment was also included in the surgical, medical, or therapeutic services to all such children, irrespective of the school attended. Moreover, the Legislature of New York stipulated that all commissioners of public welfare, local boards of health, or other health authorities of each city, town, and village shall have power to provide children attending school other than public school with all or any of the health and welfare services and facilities, including, but not limited to, health, surgical medical, dental, and therapeutic cases and treatment and curative aids and appliances authorized by law and now granted to children in public schools.

The Legislature of *North Carolina* authorized the Governor to appoint a commission of seven persons to prepare a program for adequate instruction for exceptional children in public schools. In *Ohio* the legislature provided for a State supervisor of handicapped children in the Department of Education who shall develop and direct a program of instruction for the training and education of all handicapped children not otherwise provided for and who are capable of profiting by further instruction in public school. In *Pennsylvania* the legislature made it the duty of home and school visitors to report children of compulsory school age who are in need of special education and provided that such children be given adequate appropriate examination. Transportation expenses of handicapped children were made reimbursable in part by the State where such children attend approved and suitable classes. The Pennsylvania law as amended also provides that no child can be excused permanently from attending school "on account of any mental, physical, or other urgent reasons" unless such action is approved by the Department of Public Instruction. The Legislature of *South Dakota* exempted blind students from paying tuition, library fees, or other fees at State educational institutions under the supervision of the State Board of Regents. In *Tennessee* the legislature established a commission which was authorized to issue and sell interest-bearing coupon bonds in the amount not to exceed $7,500,000 for the purpose of providing funds for the acquisition of sites, the construction of buildings, the making of repairs and additions to existing buildings for the use of the State School for the Deaf, the State School for the Blind and the State Industrial School.

The *Virginia* Legislature authorized school boards to establish and operate vocational schools or camps for the education, physical train-

ing, health, and nutrition deemed beneficial to children of school age requiring special training or attention. In *West Virginia* the legislature required teachers at the time of taking the school enumeration to ascertain those on the enumeration list and also others beyond the school enumeration age who are mentally or physically handicapped and those who are illiterate, and to report all such persons on a special form prescribed by the State Superintendent of Schools. The special form shall designate the ages to be reported and shall provide for a classification of the disabilities of handicapped persons, distinguishing between male and female and between white and colored.

In *Wisconsin* the legislature authorized school boards to establish and maintain classes for various types of handicapped children, and provided for the creation in the State Department of Public Instruction of a bureau for handicapped children, the director of which shall be appointed by the State Superintendent. The director of handicapped children is authorized to appoint (*a*) a supervisor of services for children who are deaf, blind, or defective in speech; (*b*) a supervisor of services for children who are crippled or otherwise physically handicapped; (*c*) a supervisor of services for children who are mentally handicapped; and (*d*) other qualified personnel necessary to perform the duties assigned by the State Superintendent of Public Instruction. This act also provided that crippled children residing in a district not maintaining special classes suitable for their needs may attend such classes in another district and tuition therefor shall be chargeable to the town or district in which such child resides. The Legislature of Wisconsin furthermore provided State educational aid to any county home for dependent children maintaining educational facilities required to be given by a common school, provided that the educational facilities of such homes shall be under the supervision of the State Superintendent of Schools. Moreover the legislature stipulated that the county wherein the school district receiving dependent school children is located shall be liable for such dependent school tuition for those persons who have no legal settlement in any town or city in the State.

The *Vermont* Legislature authorized the State Board of Education to act as agent of the State to cooperate with the United States Government in educating physically handicapped children, to accept Federal funds therefor, and to make rules and regulations and plans to carry into effect a Federal program for the education of such children.

Health and Safety Protection of School Children

Legislation designed to promote the health and safety of school children manifested itself in many different ways. For example, the promotion of a program for school lunches, the regulation of school bus construction and their operation, medical inspection of school pupils and employees, better housing and sanitation facilities, and liability compensation for injuries.

At least four States during the period here reviewed authorized school boards, under certain conditions, to establish and operate lunchrooms at school buildings. *California* authorized governing boards of all school districts to provide, without charge, breakfast and lunch, or either, for pupils "who do not otherwise receive proper nourishment," and to levy and collect taxes therefor. The legislature of that State also empowered State and local officials having charge of the administration of funds for the relief of indigent children to furnish funds for free school lunches.

In 1940 the Legislature of *Louisiana* provided, under the supervision of the State Board of Education, free lunches to "the needy school children of the State," and appropriated $1,000,000 or as much thereof as may be necessary for this purpose. The Legislature of *Missouri* authorized school boards in cities between 75,000 and 500,000 inhabitants to provide lunches to school children.

In the State of *Washington* the legislature authorized school boards to establish and operate lunchrooms in school buildings for pupils and teachers, provided that the actual operation expenses shall not exceed the revenue from the sale of lunches. It is furthermore noted that the Legislature of *Puerto Rico* authorized the Commissioner of Education to use $30,000 out of the savings in salaries made during the fiscal year 1938–39 in his department and apply the same to the maintenance of school lunchrooms.

Legislative measures designed to provide liability insurance to protect children who ride the school buses won legislative favor in Kentucky, Nebraska, New Jersey, Oregon, West Virginia, and Wisconsin. (*See* SCHOOL TRANSPORTATION.)

The Legislature of *Wisconsin* authorized school districts to organize school safety patrols and, with the permission of parents, to appoint pupils as members thereof for encouraging pupils to exercise safety in crossing highways. In this act the legislature stipulated that no liability shall attach to the school district or teachers or superintendents by virtue of the operation of the safety patrol system.

The *Connecticut* Legislature strengthened its law relating to the health and sanitation of schools so as to enable better enforcement

through the State Department of Health of the standards recommended by the State Board of Education. In *New Jersey* several measures were enacted designed to protect the health of school children through physical examinations of pupils and school employees. *Oregon* required teachers in registering contracts with county school superintendents to file a certificate of health showing the teacher to be free from tuberculosis or other communicable disease.

Teacher Tenure and Employment

Legislative action affecting the employment and the security of teachers has been prolific in recent years. Bills relating to these subjects were pending in more than half the States during the 2 years here reviewed; most of them, however, failed of enactment.

In 1939 the Legislatures of *Alabama* and *West Virginia* enacted teacher-tenure legislation of the continuing contract type. The *Alabama* law provides that any teacher, principal, or supervisor who has served for 3 consecutive years in any county or city and who thereafter is re-employed by the same county or city school system, shall have "continuing service status." The contract of such a teacher shall remain in full force and effect unless superseded by a new contract by both parties or cancelled as provided by law. The law stipulates that cancellation of a teacher's continuing service contract may be made for "incompetency, insubordination, neglect of duty, immorality, justifiable decrease in number of teaching positions, or other good and just cause; but cancellation may not be made for political or personal reasons." The Alabama law provides that in case of cancellation of the teacher's continuing contract a notice in writing shall be given and an opportunity for the teacher to be heard. "The action of the employing board, . . . unless arbitrarily unjust, shall be final and conclusive." The law, however, further stipulates that "whether such action complies with the provision of this act and whether such action is arbitrarily unjust may be reviewed by a bill in equity for the specific performance of such contract. . . . No action at law shall lie for the recovery of damages for the breach of any employment contract of a teacher in the public schools." Under the Alabama law, leave of absence for advanced training, in the discretion of the employing board, may be counted as equivalent to teaching experience, not for a longer period than 1 year, without impairing the teacher-tenure status.

In *West Virginia* the legislature in 1939 stipulated that a teacher's contract "shall be a continuing contract of employment and shall remain in full force and effect except as modified by mutual con-

sent . . . unless and until terminated with written notice, stating cause or causes to the teacher by a majority vote of the full membership of the board before April 1st of the then current year, or by written resignation of the teacher before that date. . . ." Under the West Virginia law teachers and principals may be suspended or dismissed for "immorality, incompetency, cruelty, insubordination, intemperance, or willful neglect of duty," but such charges must be stated in writing and there must be an opportunity for the teacher to be heard. In cases where the decision of dismissal by the Board is not unanimous the teacher has the right of an appeal to the State Superintendent. The West Virginia law, as modified by the continuing contract provision, authorizes the dismissal of a teacher for "lack of need for the teacher's services pursuant to the provision of law relating to the allocation of teachers and pupil-teacher ratio"; but any teacher dismissed on this ground shall be placed on a preferred list in the order of her length of service. The continuing contract law also includes the following stipulation: "*Provided, however*, That marriage of a teacher shall not be considered a failure to fulfill, or a violation of, the contract." County superintendents are not deemed teachers within the meaning of this law.

In *Pennsylvania* the legislature made substantial revision of its teacher-tenure act of 1937. Among the principal changes are: (1) The introduction of a 2-year probationary period for newly appointed teachers; (2) the institution of a State-wide rating system for all teachers which is to form the basis for justifiable dismissals and suspensions; (3) the suspension of tenure rights under certain condition: (*a*) upon attainment of certain age, (*b*) on account of curtailment or alteration of the school program by the board of education or recommendation of the State Department of Education, or by reason of consolidation of schools; and (4) by adding a stipulation that the decision of the State Superintendent of Public Instruction shall be final unless within 30 days thereafter an appeal shall be taken to the court of common pleas.

In 1939 the Legislature of *Indiana* provided that the contract of any teacher, principal, or superintendent not under tenure shall be renewed and continued in force unless the school board gives notice not later than May 1st that said contract will not be renewed. The legislature also provided that teachers under permanent tenure may sue by mandate for reinstatement as well as have the right to sue for damages.

In 1939 the Legislatures of *Colorado*, *New Mexico*, and *Wisconsin* provided that teacher-tenure rights may under certain conditions cease for any teacher who has reached 65 years of age.

Miscellaneous.—The Legislature of *Maine* authorized school boards to contract with teachers for such term as they may in their discretion deem proper but for not longer than a 5-year period. The *North Carolina* Legislature in 1939 reenacted and incorporated in its school foundation act the stipulation that in the employment of teachers no rule shall be made or enforced which discriminates with respect to the sex or marital status of the applicant. The Legislature of *West Virginia* stipulated that "marriage of a teacher shall not be considered a failure to fulfill, or violation of," a teacher's contract.

In 1940 the *Louisiana* Legislature authorized school boards to grant teachers 10 days' leave of absence with pay for sick leave per annum; and also provided sabbatical leave for any teacher "for the purpose of professional or cultural improvement, or for the purpose of rest and recuperation," for 2 semesters immediately following any 12 or more consecutive semesters of service in the parish where such teacher is employed, or for 1 semester following any 6 or more consecutive semesters of service.

Teacher Retirement

Numerous enactments have been made in recent years tending to improve or extend retirement pensions to public-school teachers. This is a field in which there is wide interest and activity especially on the part of the teachers. Legislation in behalf of teacher-retirement systems has shown a definite tendency to finance such systems on a joint-contributory plan, the teacher and the State each sharing a responsibility in connection with the necessary funds.

In 1939 the Legislature of *Alabama* for the first time enacted provision for a State-wide retirement system under which the teacher is to contribute 3½ percent of his annual salary up to $3,000. Upon retirement the teacher shall receive (1) an annuity which shall be the actuarial equivalent of his accumulated contributions at the time of his retirement and (2) a pension which shall be equal to the annuity allowable at the age of 60 computed on the basis of contributions made prior to the age of 60. The administration of the Alabama retirement system is vested in a board of trustees known as a "Board of Control" composed of seven members as follows: The State Superintendent of Education, the Director of Finance, the Executive Secretary of the Alabama Education Association, ex officiis, and three members of the retirement system (one a city or county superintendent, one a school principal, and one a classroom teacher) elected by members of the retirement system for a term of 8 years each.

The Legislature of *California* authorized two or more school districts to establish a joint district retirement plan. In *Colorado* the

legislature authorized boards of education of first-class districts maintaining a teacher-retirement system to provide for the retirement of school employees upon similar terms and conditions as may be made for the retirement of teachers.

The Legislature of *Connecticut* modified the teacher-retirement law of that State so as to provide, among other things, that members of the retirement system shall contribute 5 percent of their annual salary up to $3,000. Previously the law provided 5 percent of salaries up to $2,000. The law as amended also provides that after 30 years of service teachers may cease payment of premiums or may continue payment until sufficient annuity is accumulated to amount to $600 per annum instead of $500 as previously provided.

In 1939 the Legislature of *Florida* enacted provisions for the establishment of a State-wide retirement system for teachers to be administered by a board of trustees to be composed of members of the State Board of Education and two additional members (teacher-members) appointed by the Governor. The board of trustees shall provide an actuarial investigation and shall adopt such mortality and service tables as it may deem necessary and shall certify the rates of teacher contribution payable under the plan. The teacher-retirement funds are derived from (1) teacher contributions, and (2) the pension accumulation fund in which shall be accumulated all reserves for the payment of all pensions and other benefits payable by contributions made by the State. The Retirement Act provides for compulsory retirement at 70 years of age.

The *Illinois* Legislature enacted a new State-wide teacher-retirement law which supplants all previous teacher-retirement systems of the State (Chicago excepted). The new provisions of the law as enacted in 1939 seek (1) to give financial permanence and stability; (2) to increase and enlarge benefits to members; (3) to guarantee to present annuitants the continuance of their rights and privileges. The retirement provisions for public higher educational institutions are now a part of and are administered by the board of trustees of the Teacher-Retirement System of the State; and the system covers all public-school teachers in the State (Chicago excepted, which still has its independent system). Under the present system teachers will contribute toward an annuity an amount based on their annual salary rather than by years of service as was the case under the previous law. The amount to be paid by the teacher varies from $30 to not more than $100 per annum.

In *Indiana* the Legislature revised its teacher-retirement system so as to (1) re-open membership privileges to all teachers on arrangements whereby they pay arrearages; (2) extend the system to teachers in the University laboratory schools; and (3) require four (instead

of three) annual deductions from the teacher's salary for contributions to the retirement fund.

In 1940 the Legislature of *Kentucky* revised its teacher-retirement law of 1938 so as to provide expressly retirement privileges for school principals, supervisors, superintendents, librarians, attendance officers, superintendent of public instruction, and officials and employees of the State Department of Education. In that year the *Louisiana* Legislature authorized a fund for granting retirement benefits to aged teachers of the State who were not then eligible for pensions under the teacher-retirement system.

In 1939 the Legislature of *Michigan* extended its teacher-retirement system so as to include members of the faculty of the Michigan College of Mining and Technology; and in *Montana* the legislature amended its retirement system to include teachers of higher educational institutions.

The teacher-retirement system in *New Mexico* was amended by the legislature by reducing from 25 to 15 the number of years of service necessary for voluntary retirement of any teacher over the age of 60 years, with a proviso that the last 10 years of service must have been consecutive and immediately prior to retirement. In the same act the legislature directed the State treasurer to transfer 2 percent of the emergency school tax and the school's part of the State income tax to the teachers' retirement fund.

The Legislature of *Ohio* amended its retirement provisions so as to authorize the transfer of membership among the three State retirement systems, namely, the teachers', the school employees', and the public employees' retirement systems.

In 1939 the Legislature of *South Dakota* enacted provisions for a State-wide retirement system for teachers. The administration of the system was vested in a board of trustees to be composed of five members as follows: The State Superintendent of Public Instruction (ex officio chairman), the State Treasurer, the Commissioner of Insurance, and two teachers (members of the retirement system who shall be elected by members of the said system). The South Dakota retirement system is applicable to any school administrative officer, including the State superintendent, officials and employees of the State Department of Education, and teachers in institutions of higher learning, county superintendents, any teacher, librarian, or school principal. The system is a joint contributory one, and upon retirement a teacher shall receive (1) an annuity—the actuarial equivalent of accumulated contributions, and (2) a pension equivalent to his annuity in amount not greater than $100 per annum until the retirement system has been established 5 years, and not greater than $200 per annum until established 10 years, and thereafter not to exceed $300. The South Dakota law

includes provisions for retirement on account of disability after 15 years of service.

In *Vermont* the legislature extended its retirement system so as to include teachers, principals, supervisors, and superintendents of nonsectarian private schools serving as high schools for any town or city, provided the school is not conducted for personal profit.

The Legislature of *Washington* amended its State teacher-retirement system by extending its provisions to include teachers in all State teachers colleges, the State schools for the blind and the deaf, and the State training and reformatory schools. Furthermore, the legislature of Washington provided that the teacher-retirement system shall include all noncertificated employees.

In 1939 the Legislature of *West Virginia* enacted provisions for a noncontributory teacher-retirement system under the administration of the State Board of Education. The law authorizes a monthly allowance of eight-tenths of a dollar multiplied by the number of years of service for teachers attaining the age of 62 after 25 years of service, 20 years of which, including the 10 years immediately preceding retirement, must have been in publicly supported schools of the State. The legislature appropriated $50,000 to inaugurate the system.

Private Schools

Legislative measures which affect private schools or the attendance at such schools were enacted in a number of States during the biennium. Legislation of this kind occurred in Kansas, Kentucky, Missouri, Montana, New Jersey, New York, Oklahoma, Oregon, and West Virginia.

The *New Jersey* Legislature in 1940 required "every nonsectarian private boarding school" to register with the State Commissioner of Education and no such school shall operate after July 1, 1941, unless it receives a certificate of approval issued by the Commissioner of Education under rules of the State Board of Education. Such certificate may be renewed annually or may be revoked at any time for good cause. This act expressly exempts "incorporated" schools "not for pecuniary profit"; schools controlled by any charitable institution or religious denomination, and schools which have been in session annually for 20 years immediately preceding passage of the act. All private boarding schools are, by this act, required to make annual reports and other reports from time to time as the Commissioner of Education may deem necessary. Such schools are subject to visitation by the county superintendent of schools or other educational officer designated by the Commissioner of Education.

The *New York* Legislature in 1939 made it unlawful for any person or persons, firm or corporation (other than the public-school authority

or an established religious group) to establish and maintain a nursery school, kindergarten, or elementary school giving instruction in the subjects included in Section 620 of the Education Law, unless the school is registered under regulations prescribed by the State Board of Regents. The *New York* Legislature also amended its law relating to private trade schools so as to forbid any person or firm or private organization to operate a school for the purpose of teaching any trade unless there is first secured a license therefor from the State Board of Regents through the Division of Vocational Education of the State Department of Education.

In 1939 the Legislature of *Montana* provided that no person, corporation, association, or institution shall issue or award any degree or literary honors as are usually granted by universities or colleges without first having secured the approval of the State Board of Education (this act is inapplicable to any educational institution accredited by any educational accrediting association whose accrediting is found by the State Board of Education to be generally recognized by State and other universities in the United States).

The States of *Oklahoma*, *Oregon*, and *Missouri* in 1939, and the State of *Kentucky* in 1940, enacted provisions which authorized local school boards, under certain conditions, to provide transportation facilities for children attending private schools. The *Missouri* Legislature limited the transportation of children to those private schools which are not operated for profit.

The Legislatures of *Kansas* and *West Virginia* enacted provisions to provide free textbooks to children in private schools who are unable to purchase them, and the Legislature of *New York* authorized that children in private schools be furnished the same health services and facilities as are furnished to children attending public schools.

Adult and Vocational Education

During the biennium an unusual number of legislative measures were enacted in behalf of adult or vocational education.

In 1939 *Alabama* authorized the State Board of Education and county and city boards of education to cooperate with the Federal Government in making effective any law enacted by Congress for the removal of illiteracy and for the maintenance of adult education programs and classes. In 1940 the Legislature of *Mississippi* authorized the State Board of Education to establish an educational program for adults and use public-school facilities therefor, and to meet the newer requirements which may be prescribed by the Federal Government in such a program. The legislature expressly stated that the aim of such a program was to reduce illiteracy and to provide a plan

for continuing education in the fundamental principles of democratic society, citizenship, public affairs, forums, general cultural subjects, and such other subjects as the State Board of Education may prescribe.

The Legislature of *Oklahoma* provided that persons between the ages of 21 and 25 who, because of physical disability, were unable to complete their twelfth grade education while of legal school age may continue in school, without cost to them, for a period equal to the time lost by reason of such physical disability, up to the completion of the twelfth grade. In Oklahoma the legislature authorized school districts upon majority vote of the electors to establish classes for adults; and authorized the district school board to determine fees to be charged, if any, in such cases. The Legislature of *Vermont* authorized the State Board of Education to grant certificates of credit earned in approved courses in Civilian Conservation Corps Camp schools and in other schools for adults whose courses have been approved.

The *Wisconsin* Legislature made it the duty of school superintendents to provide annually a county-wide educational program for adult citizenship training for natives reaching their majority and for aliens who have become naturalized during the year; said program to be climaxed on the third Sunday of May as Citizenship Day. The legislature stipulated that the "educational program shall stress the doctrine of democracy upon which American government is based." The legislature of that State also stipulated that no local board of vocational and adult education shall be liable without its consent to pay tuition for any pupil who is 21 years of age.

In 1939 the Legislature of *Delaware* established under the direction and control of the State Board for Vocational Education a division for the vocational rehabilitation and placement in remunerative employment of persons whose capacity to earn a living shall be or has been destroyed or impaired. The State Board for Vocational Education was authorized and directed to make rules and regulations for the disbursement of funds provided for the vocational rehabilitation of disabled persons.

The *Rhode Island* Legislature made it the duty of the Director of Education to conduct a study of the curricula offered by the public schools for the purpose of planning a more practical educational program and to provide for vocational guidance. (*See* CURRICULUM and FEDERAL LAWS RELATING TO EDUCATION.)

Federal Laws Relating to Education

Federal laws relating to education are as a rule of wide interest and concern. During a single Congress more than 100 bills relating to education are introduced. Comparatively few of them, however, are

enacted into law. Below is a summary of the principal Congressional enactments in 1939 and 1940 which relate to educational facilities or to their administration:

1939

Public Law No. 19: Authorized the President to reorganize Government agencies. Under the authority of this Act the U. S. Office of Education was transferred from the U. S. Department of the Interior to the Federal Security Agency.

Public Law No. 32: Provided for taxation of income of all public officers and employees, including the salaries of all State and local school officials.

Public Law No. 258: Provided for the promotion of nautical education by authorizing the Commandant of the Coast Guard, in his discretion, when so requested by proper authority, to detail persons in the Coast Guard for duty in connection with maritime instruction and training by the several States.

Public Law No. 153: Authorized the Civil Aeronautics Authority to train civilian pilots or to conduct programs for such training to be carried out either through the use of facilities and personnel of the Authority or by contract with educational institutions or other persons; and to authorize an appropriation of $5,675,000 for the fiscal years 1939 and 1940 and such other sums as may be necessary in subsequent years to carry out the provisions of this Act which will expire July 1, 1944.

Public Law No. 118: Provided that the Library of Congress in purchasing books for the blind shall give preference to non-profit-making institutions or agencies whose activities are primarily concerned with the blind, "in all cases where the prices or bids submitted by such institutions or agencies are, by said Librarian, under all the circumstances and needs involved, determined to be fair and reasonable.

Public Law No. 422: Provided for the retirement on annuity or otherwise, of all persons paid in whole or in part from Federal funds to the several States under the Act of July 2, 1862, for the endowment of colleges of agriculture and mechanic arts, for the establishment of experiment stations and for cooperative extension work in agriculture and home economics; and authorized the withholding as employers' contributions thereto an amount not to exceed 5 percent of the salary received by any person from the Federal funds, provided similar amounts are contributed by the individuals concerned, the State, and counties.

1940

In making supplemental appropriations for the Government for the fiscal year ending June 30, 1941, Congress appropriated to the

U. S. Office of Education for payment to States, and subdivisions thereof, and to certain engineering schools and universities through certification by the U. S. Commissioner of Education, "for the education and training of defense workers," as follows:

(1) For vocational courses of less than college grade, pursuant to plans approved by the Commissioner of Education, which shall include courses "in occupations essential to national defense," $26,000,000.

(2) For the purchase, rental or other acquisition of equipment needed in providing courses approved under item (1) above, $8,000,000.

(3) For short engineering courses of college grade provided by engineering schools or universities, pursuant to plans approved by the Commissioner of Education, which shall include specialized training in "fields essential to the national defense," $9,000,000.

(4) For the cost, including necessary equipment and supplies of vocational courses provided by such agencies "for out-of-school rural youth who have attained the age of seventeen" and for nonrural youth who otherwise meet the requirements and whose training is not feasible under items (1) and (3) above, pursuant to plans approved by the Commissioner of Education, $10,000,000.

(5) For the cost of vocational courses provided by such agencies for young people employed on work projects of the National Youth Administration, such courses to be pursuant to plans approved by the Commissioner of Education, $7,500,000.

The U. S. Commissioner of Education was directed to carry out the purposes of these appropriations under regulations promulgated by him and approved by the President. This Act made available 1 percent of each of the said amounts for administrative purposes to enable the Commissioner of Education "most efficiently to carry out the purposes of the several appropriations." (Public Law No. 812.)

BIENNIAL SURVEY OF EDUCATION

IN THE UNITED STATES

1938–40

HEALTH SERVICES IN CITY SCHOOLS

VOLUME I

CHAPTER V

By

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HEALTH SERVICES IN CITY SCHOOLS

Introduction

> WE HAVE many doubts whether our common schools will ever become what they ought to be as places for the promotion of health, as well as of knowledge and piety, until they are brought under the care—more or less—of judicious medical men, and until the latter make it their constant duty to watch over their physical education and management. Until the teachers of these schools can be trained to a thorough and practical knowledge of the science of human life and health, there will be a thousand things of frequent, if not daily, recurrence in every school which will require medical attention. Or, to say the least, there will be daily or hourly recurring cases which will raise these enquiries in the minds of the honest, faithful, enquiring teachers who have their minds turned to the subject of health, and a desire implanted in their bosoms to obey its laws, which they will remember or note down, and be glad to present to the medical man at his semi-weekly, weekly, or monthly visits. For, say what we will of the novelty of such a plan or proposal, our schools ought to have their regular physicians, as much as our houses of industry, our almshouses, or our penitentiaries.

So wrote that distinguished educator and school hygienist, Dr. William A. Alcott, in 1840.[1] Probably it was not until a third of a century later that a physician was regularly employed on the staff of a public school and then such employment was the result of an emergency. In 1872 "the alarming prevalence of smallpox and its appearance in one of the schools of the city" suggested to the Board of Education of Elmira, N. Y., "the necessity for a more thorough supervision of the pupils in respect to enforced vaccination, as directed by a statute [that of 1860] whose provisions had been only partially and ineffectively carried out by the Board of Health."[2]

A "sanitary superintendent" was employed by the board of education who made frequent examinations of the children, excluded the unvaccinated, vaccinated those whose parents could not afford this protection, and supervised the sanitation of the schools. The fear of an epidemic soon passed but the services of this health officer were continued and, in the present century, examination of all children for defects, as well as for diseases, was added to the search for signs of vaccination and the periodic surveys of health conditions in the school plant.

[1] Alcott, W. A. Health in common schools. Boston, 1840.

[2] Thirteenth annual report of the Board of Education of the City of Elmira, for the year ended August 31, 1873.

In 1894, after 4 years of effort on the part of the Commissioner of Health of Boston, 50 "medical visitors" (1 for each school district) were appointed in that city. These physicians visited the schools daily and examined "all children thought by their teachers to be ailing." The teachers and doctors both proved efficient, for, in 4 months, over 9,000 children were examined, of whom 5,825 were found to be ill and 1,033 were sent home. Among these were 58 cases of diphtheria, 19 of scarlet fever, 42 of measles, 17 of whooping cough, 35 of mumps, 22 of chickenpox, and 7 of congenital syphilis. The superintendent of schools commented, "I believe the importance of this work can hardly be overestimated." New York City followed the example of Boston in 1897 by the appointment of 134 medical inspectors.

As might have been expected, the findings of these earlier examiners were largely skin diseases, and the exclusion of the infected children from school removed them as a source of infection but did not always result in their treatment or cure. Experiments in New York City with nurses who either treated such children in school or secured their treatment by the parents solved the difficulty, and in 1902 the first staff of school nurses was appointed.

In 1899, the State of Connecticut required the examination of all school children by teachers for defects of vision, and by 1905, many school physicians had become interested in the search for these and other physical faults. Statistics of diseases or defectiveness were accumulated in large and "startling" figures, but the results in "correction" or treatment were comparatively small until, as for skin diseases, the nurse was made a home visitor and educator concerning the meaning and intent of the child's examination.

Laws in this field are now in the statutes of 45 States. These laws offer a variety of permissions and requirements, and in two States they have reference to dental examinations only. In 29 States the laws are more or less mandatory. Where a State administrative authority is specified, this, in 11 is the department of education; in 7, the department of health; and in 11, the responsibility is shared. Locally, the administration is conferred in 33 States on the educational authorities; in 3 on departments of health; and in 3 there is joint control.[3]

Since 1900 the development of the school health service has been rapid. Nevertheless it is by no means universal, nor often adequate. The latest study of its status in cities was made at the time of the White House Conference on Child Health and Protection in 1930.

Our recent inquiry, which was sent to all cities with a population of 10,000 and over, met with a response from an unusually large num-

[3] For further details concerning laws governing school medical and nursing services, *see* U. S. Office of Education Pamphlet No. 5, Statewide trends in school hygiene and physical education. U. S. Office of Education, Washington, D. C.

ber—about 78 percent. As in the previous survey, the data are presented separately for three groups of cities—those with a population of 100,000 and over; those from 30,000 to 100,000; and those from 10,000 to 30,000.

Cities Having a Population of 100,000 or More

Of 93 school systems in cities having a population of 100,000 or more that were asked for information concerning their health services 71, or 76 percent, replied to the inquiry. All of the cities reporting have health services at various stages of development.

Administration

The school health service is financed in three different ways—by the board of education, by the city health department, or jointly by the board of education and the health department. In 50, or 70 percent, of the 71 cities reporting, the school health service is financed by the board of education; in 18, or 25 percent, by the city health department; and in 4, or 5 percent, the service is financed jointly by the above-named agencies. The financing agency has control of the school health work in all but 5 cities. In 2 (Wichita, Kans., and Dayton, Ohio), in which funds are provided by the board of education, the school health work is directed by the department of health; in 1 (Philadelphia, Pa.), in which the school health service is financed by the board of education, it is under the joint control of the board of education and the department of health; and in 2 (El Paso, Tex., and Portland, Oreg.), in which the service is financed jointly, it is under the direction of the board of health.

Personnel

Supervisors.—In each of 69 school systems of the 71 reporting, there is a special supervisor of health service; in 2 cities the superintendent of schools acts in this capacity. Of the 69 cities having special supervisors, the service in 64, or 93 percent, is supervised by a physician; in 2 by a nurse; and in 3 by the supervisor of health and physical education.

In 43 cities furnishing information regarding the annual salaries of health supervisors, the salaries, including part-time, range from $1,000 to $8,500. The median salary is $4,792. Twenty-five percent of the supervisors receive a salary of less than $3,792; 50 percent from $3,792 to $5,750; and 25 percent receive more than $5,750.

Only 47 of the respondents to the inquiry form indicated what special preparation the supervisors have for their work. Most of the replies were given in terms of years' experience as physician or as supervisor of school health, but of the physicians acting as supervisors,

8 were reported as having had some training in public health work; 1 has a master's degree in this field; and 4 have done special work in pediatrics.

Physicians.—Physicians as staff members of the school health service are employed in 68 of the cities reporting. In 27 of these cities there are both full-time and part-time physicians; in 32, part-time only; in 9, full-time only.

The maximum annual salary of full-time physicians in 20 cities reporting ranges from $1,682 to $5,000. The median maximum salary is $3,200. Twenty-five percent of the full-time physicians receive a maximum salary of less than $2,417; 50 percent receive from $2,417 to $4,125; and 25 percent receive more than $4,125. Only 11 cities reported the minimum salary of full-time physicians. The median minimum salary for these 11 cities is $2,914. Fifty-four of the cities reported pay for part-time physicians. Of this number 19 reported the pay per hour which ranges from $2 to $5.

Only 22 cities reported that special preparation of physicians for school health work is required. Of this number 10 reported that they require special training in pediatrics, and 2 some preparation in the field of public health. The other 10 did not specify definitely what special type of preparation is required. Some in-service training is given the school medical officers, either through lectures or by weekly or monthly conferences in 21, or about 30 percent, of the cities employing physicians.

One-third of the cities employ one or more practitioners in special fields for the periodic examination of school children, and 44 percent have consultants on the medical staffs for the examination of special cases. The special fields represented are: Eye, 16 cities; ear, nose, and throat, 12; orthopedics, 8; psychiatry, 5; chest, 3; heart, 2; and skin disease, 1 city.

Dentists.—Of the 71 school systems reporting, 53, or about 75 percent, employ dentists. In 34 of the 54 cities the dentists are employed for part time only, in 12 for full time, and in 7 for both full and part time.

Only 19 cities reported maximum salaries of dentists on full time. Sixteen of these reported the annual maximum salary which ranges from $1,350 to $5,000. The median maximum salary is $3,417. In 25 percent of the cities the maximum salary is less than $2,688; in 50 percent it is from $2,688 to $4,083, and in 25 percent it is more than $4,083. The 3 other cities reported the monthly salary—$150 in 1, $250 in 1, and $304 in the other. The minimum annual salary of full-time dentists reported by 7 cities ranges from $1,000 to $3,000.

The pay of dentists on part-time was reported by 37 cities. In 11 reporting the pay per hour, the pay ranges from $1.25 to $4.90.

Dental hygienists.—Of the 71 cities reporting, 33 employ dental hygienists. In 25 of the 32 cities there are full-time dental hygienists only; in 4, part time only; and in 3, both full and part time.

Twenty-seven cities reported the maximum annual salary of dental hygienists on full time. The maximum salary ranges from $700 to $2,400 per year. The median maximum salary is $1,662. Twenty-five percent of the hygienists on full time receive a salary of less than $1,425; 50 percent, from $1,425 to $1,845; and 25 percent receive more than $1,845.

Nineteen cities reported the annual minimum salary of full-time dental hygienists, which ranges from $864 to $2,100. The median minimum salary is $1,285. Twenty-five percent of these hygienists receive a minimum salary of less than $1,125; 50 percent from $1,125 to $1,447; and 25 percent receive more than $1,447. Only 4 cities reported pay for part-time work (table 3).

Nurses.—Of the 71 cities, 68 report that nurses are employed for school health work. In 60 of the 68 cities the nurses are on full time only, in 4 on part time only, and in 4 on both full and part time. Thus there are full-time nurses in 64 of the 68 cities.

Sixty-one cities reported the maximum salary of full-time nurses. In these cities the salary range is from $1,000 to $3,100 a year. The median maximum salary is $1,750. Twenty-five percent of the full-time nurses receive less than $1,375; 50 percent, from $1,375 to $2,264; and 25 percent receive more than $2,264.

Fifty cities reported the minimum annual salary which ranges from $780 to $2,000 a year. The median minimum salary is $1,309. Twenty-five percent receive less than $1,140; 50 percent from $1,140 to $1,488; and 25 percent receive more than $1,488.

Fifty cities reported as to the special preparation required of nurses for school health work. Only 20 of these reported that public health training is required. Among the requirements listed by the remaining 30 cities are: Experience in health work, registered nurse, and State requirements. In only 6 cities does the nurse do other than school work.

Examinations

Official conducting.—Of 70 school systems reporting as to who conducts the health examinations of school children, 64 state that the examinations are made by physicians, and 6 that they are made by nurses. In 60 cities reporting, the physician has assistance in making the examinations. In 41 of these cities he is assisted by a nurse, in 16 by a nurse and a teacher, in 2 by a teacher, and in 1 by older pupils.

Examination of the teeth in 71 school systems reporting is made by a dentist in 23, by a dental hygienist in 12, by a physician in 11, by a physician and a hygienist in 8, by a physician and a dentist in 7, by a

nurse in 5, by a physician and a nurse in 4, and by a dentist and a nurse in 1.

Number of pupils per examiner.—In school systems where only full-time physicians are employed, the number of pupils enrolled per physician ranges from 2,600 to 33,000. The median number is 17,800. The number of pupils per full-time dentist varies from 3,000 to 45,000 with a median of 23,500. The number of pupils per dental hygienist ranges from 7,500 to 70,000, the median number being 8,400. The number of pupils per nurse ranges from 1,100 to 15,000, but in only 2 cities does the number exceed 5,000. Omitting the extreme of 15,000, the median number is 2,100. In 3 cities there are only 1,100 pupils per nurse.

Grades examined periodically.—Sixty-six cities reported the grades in which the pupils are given periodical health examination. In 21 cities the children in all grades are examined. In the other cities there is a great variety of combination of grades (table 3). In 2 cities, only the entrants are examined, while in some cities the pupils of only a grade or two are examined. In 44 cities reporting, the children are examined before first entrance to school, and in 7 more some of the entrants are examined.

Time given to examination.—The time given to health examinations as reported by 56 cities ranges from 1 minute to 30 minutes per child, the median number being 8 minutes. The following is a distribution of the time allowed for the examination:

No. of minutes	*No. of cities*	*No. of minutes*	*No. of cities*
1– 5	18	16–20	1
6–10	26	21–25	0
11–15	9	26–30	2

The following expenditure of time by nurse, teacher, and physician in the schools of Yonkers, N. Y., is reported by the Director of the School Health Service, Dr. Elton G. Littell:

	Expenditure of time in minutes
1. Preparation for examination (nurse), including invitation to parent to be present	1½
2. Weighing and measuring (nurse and teacher), including recording and reporting	2
3. Group test for vision acuity (teacher assisted by nurse) correction of papers, recording, and reporting	2
In case of failure to pass the group test, an individual examination is given by an ophthalmologist which requires (in addition)	5 to 20
4. Group audiometer test for hearing acuity (nurse), correcting papers, recording, and reporting	3
In case of failure to pass group test an individual test is given by nurse requiring an additional	3

	Expenditure of time in minutes
5. Inspection of skin (nurse or teacher)	½
6. Medical examination (physician)	6
7. Teeth and gums, examination, followed by instruction, cleaning, recording, and reporting (dental hygienist). (Teeth are included in examination by physician, which adds emphasis on need for care)	15
Total time of examination	30 to 38+

It will be noted that the time spent on the average child by the physician is 6 minutes and this does not include the examination of vision and hearing.

Methods.—In 43 of 63 cities reporting, parents are present at the examination of some or all of the children. In 19 cities, less than 50 percent, in 6 cities from 50 to 74 percent, in 10 cities from 75 to 99 percent, and in 8 cities 100 percent of the children are accompanied by parents, at least for their first examination.

Sixty-five of the 71 cities reported to what extent clothing is removed during the examination. In 6 cities all clothing is removed; in 32 cities all clothing is removed to the waist; and in 6 cities no clothing is removed. The remaining 21 cities report that very little clothing is removed.

Some preliminary explanation to pupils concerning the purposes and methods of the examination is made in 58 of the cities reporting. In 45 the teacher participates and in 24 she alone is mentioned; in 35 the nurse participates and in 10 she alone gives the information; in 15 the physician takes part, and in 2 he is the only person making the explanation; and in the remaining 22 cities the explanation is made by some combinations, such as teacher and nurse, or teacher and physician.

Tuberculin tests are made in 53 of the 71 cities. In 9 cities such tests are made in all grades; in 17 cities in high school only; in 17 in junior and senior high schools; in one city in elementary grades; and in the remaining 9 cities in 1 to 3 grades, the higher grades usually being selected.

Observations by teachers.—Between periodic examinations teachers are expected to be alert to the presence of communicable diseases in 64 cities, and for signs of gross physical defects in 56 of the cities reporting. The teachers are furnished instruction for such services by members of the health staff in 52 cities. In 35 cities reporting, such instruction is given by the director of the health service in 23 cities and by a nurse in 12.

Facilities for examination and treatment.—Special rooms for the examination of children are provided in 58 cities. In 6 of these cities such rooms are provided in only some schools.

Nineteen of the 71 cities report that the schools have their own facilities for refraction. This service is free to all pupils in 5 of the cities. In 56 cities glasses are supplied to those who cannot afford them. In 3 cities funds for the purchase of glasses are furnished by the board of education, and in the 53 remaining cities by various private and charitable organizations, such as Parent Teacher Associations, Junior Red Cross, Community Chest, and Lions Club.

Facilities for dental treatments have been developed in 46 of the 71 cities. In 27 of the 46 cities, the treatment includes extractions and fillings. The treatments are entirely free in 10 cities. In the other cities in which treatments are provided there is a charge except for the "indigent."

Only 6 cities report that medical treatment for certain cases is provided. Such treatments are free in emergency or for indigents.

Relationships

Only 65 cities furnished information as to the relationship of the health service to health instruction and to physical education. In 5 cities all school health activities and physical education are under one director; in 15 cities the health service is in supervisory charge of health instruction; in 30 cities the health service cooperates or advises with respect to health instruction. In the other 15 cities there appears to be no relationship. In 34 cities the health service acts in an advisory or cooperative capacity to the physical education department, and in the remaining cities there is very little or no relationship between these two phases of the school program.

In the management of sanitary conditions in the school plant, in 65 of 70 cities reporting, the health service acts in a supervisory capacity in 37 cities and in an advisory capacity in 15 cities. In 2 cities a physician or nurse makes daily inspection; in one, weekly; in one, monthly; in one, three times a year; and in 8 other cities inspections without mention of frequency are made. In the remaining cities it appears that physicians and nurses take no part in the inspection and supervision of sanitary conditions.

Needs

Fifty-eight replies were received to the general question "What are the principal shortcomings in the organization and equipment of your health service examination?" Eight cities reported none; 32 reported that they needed more personnel; 3 reported that the examinations are meager, not more than inspection; 6 needed more space for examination purposes; 4 are lacking in facilities for dental work. The needs mentioned by the respondents in the remaining cities are: Removal of clothing for the examination; the presence of teachers at the

examination; better relationship among nurses, teachers, and parents; and better sight tests.

Of 46 cities reporting on the difficulties to be overcome in securing treatment of defects and diseases, 18 name economic conditions; 16, lack of cooperation on the part of parents; and 12, lack of facilities for treatment.

Cities Having a Population of 30,000 to 99,999

Of the 227 school systems in cities having a population of 30,000 to 99,999, 162, or 71 percent, replied to the questionnaire. All but 1 of the 162 reported that they have a health service.

Administration

In 112, or 70 percent, of the 161 cities having a health service in some stage of development, the service is financed by the board of education; in 35, or 21 percent, by the city health department; in 9, or 6 percent, jointly by these two agencies; and in 5, or 3 percent, by some private agency or organization. In 114, or 71 percent, of 159 cities reporting, the health service is administered by the board of education; in 36, or 23 percent, by the city health department; and in 9, or 6 percent, jointly by these two agencies.

Personnel

Supervisors.—In 106, or 67 percent, of 159 cities reporting, the health service is supervised by a physician; in 32, or 20 percent, by a nurse; in 8, or 5 percent, by the superintendent of schools; in 10, or 6 percent, by the supervisor of health or physical education; in 1 by the director of child welfare and accounting, in 1 by the director of personnel, and in 1 by the director of guidance and research.

The salaries of physicians acting as full-time supervisors were reported by 36 cities, and of nurses acting as supervisors by 20 cities. The distribution of salaries of these health supervisors in these cities is as follows:

Salary group	*Number of cities reporting full-time physicians*	*Number of cities reporting nurses as supervisors*
$1,000–$1,499	2	2
$1,500–$1,999	1	14
$2,000–$2,499	5	1
$2,500–$2,999	4	2
$3,000–$3,499	5	--
$3,500–$3,999	6	--
$4,000–$4,499	5	1
$4,500–$4,999	3	--
$5,000–$5,499	1	--
$5,500–$5,999	4	--

The median supervisory salary for physicians is $3,583 and for nurses, $1,785. Very little usable information was supplied as to the special preparation for the supervision of health work. Eighteen cities, however, reported that the physicians, and 13 that the nurses in charge of the health service have had special training. Such training was principally in the field of public health.

Physicians.—Of the 161 cities reporting, 120, or 75 percent, employ one or more physicians, leaving 41, or 25 percent, of the 161 school systems without the service of such officials. In 24, or 20 percent, of the 120 cities there are full-time physicians only; in 74, or 61 percent, part-time physicians; and in 22, or 18 percent, both full- and part-time physicians.

In 34 cities one or more physicians in special fields are employed as examiners or consultants. The fields represented are: Eye, nose, and throat, in 9 cities; orthopedics, in 7; psychiatry, in 6; chest, in 4; heart, in 3; X-ray, in 2; mental hygiene, in 1; psychology, in 1; and dermatology, in 1.

The maximum salaries of full-time medical officers were reported by 37 cities and the minimum by 16. The following is a distribution of such salaries:

Salary group	*Number of cities paying maximum salary*	*Number of cities paying minimum salary*
Less than $1,500	--	3
$1,500–$1,999	2	1
$2,000–$2,499	2	2
$2,500–$2,999	3	2
$3,000–$3,499	8	5
$3,500–$3,999	3	2
$4,000–$4,499	11	1
$4,500–$4,999	3	--
$5,000–$5,499	2	--
$5,500–$5,999	2	--
$6,000	1	--

Just what is meant by "full time" in some of these cities, we do not know. The salaries seem too meager for total school hours.

The median maximum salary is $4,023, the median minimum is $3,000.

The pay of part-time physicians which was reported by 17 cities is as follows:

Pay per hour	*Number of cities*	*Pay per hour*	*Number of cities*
$1.65	1	$4.00	3
$2.00	1	$5.00	2
$2.50	4	$6.50	1
$3.00	5		

Fifty-six, or 35 percent, of the 61 cities report that some special preparation is required of physicians; in 29 cities the physicians

have had some schooling in public health work; and in 4 they have done special work in pediatrics and child hygiene. Most of the remaining cities report that they are fulfilling the State requirements. Some in-service training is reported by 24 cities. In 12 there are staff conferences; in 12 lectures are given; in 5 attendance at State meetings; and in 2 the stimulus of State supervisors is reported.

Dentists.—Of 161 cities reporting, 77, or 48 percent, employ one or more dentists, leaving 84, or 52 percent, of the 161 school systems without the services of dentists. In 17 cities there are full-time dentists only; in 58 part-time only; and in 2 both full-time and part-time.

Only 11 cities reported the maximum annual salaries of full-time dentists. The maximum salary range is from $1,400 to $5,000, with a median of $2,400. The pay of part-time dentists was reported by 13 cities as follows:

Pay per hour	*Number of cities*	*Pay per hour*	*Number of cities*
$1.65	1	$2.67	1
$2.00	2	$3.00	4
$2.31	1	$5.00	1
$2.50	2	$6.33	1

Dental hygienists.—Of the 161 cities reporting, 50, or 31 percent, employ one or more dental hygienists, leaving 111 school systems in these cities without the services of dental hygienists. In 45 cities they are on full time and in 5 on part time.

Thirty-three cities reported the maximum salaries of full-time dental hygienists. The salary range is from $1,000 to $3,300 a year, with a median of $1,800. Sixteen cities reported the minimum salary, which ranges from $950 to $1,775, with a median of $1,000.

Nurses.—Of the 161 cities reporting, 147, or 91 percent, employ one or more school nurses. In 122, or 83 percent, of the 147 cities the nurses are on full time only; in 12, or 8 percent, on part time only; and in 13, or 9 percent, on both part and full time.

One hundred and seven cities reported the maximum salary of full-time nurses and 73 the minimum salary. The maximum salary ranges from $1,000 to $3,300 a year, with a median of $1,803; and the minimum salary from $800 to $2,100, with a median of $1,308.

The following is a distribution of these salaries by number of cities reporting:

Salary group	*Number of cities paying maximum salary*	*Number of cities paying minimum salary*
Less than $1,000	1	2
$1,000–$1,499	18	56
$1,500–$1,999	57	14
$2,000–$2,499	24	1
$2,500–$2,999	3	--
$3,000–$3,499	4	--

In 82, or 68 percent, of 120 cities reporting on the special training required, public health training or special school nurse training is mentioned.

In all but 6, or 4 percent, of these cities the nurse devotes her entire time to school work.

Examinations

Official conducting.—In 141 cities reporting periodic health examinations, such examinations in whole or in part are made by physicians in the 120 cities in which they are employed. In 2 cities, the teacher is the only examiner, and in the remaining 19 cities the examinations are made by the nurse, or the nurse and the teacher. The physicians are assisted by the nurse in nearly all instances; by the nurse and teacher in 18 cities; and by the teacher in 2 cities.

Of 154 cities reporting as to who makes the dental examinations, 53 report that such examinations are made by a dentist; 16, by a dental hygienist; 15, by a nurse; and, 8 by a physician. In the 62 remaining there is a variety of combinations such as physician and nurse, physician and dentist, or dentist and hygienist.

Number of pupils per examiner.—The number of pupils enrolled per full-time physician ranges from 3,200 to 14,000, with a median of 7,400. The number of children per full-time dentist ranges from 3,000 to 56,000, with a median of 10,000. The number of pupils per full-time nurse ranges from 950 to 12,000; however, in only one city is the number more than 9,200, the median number being 2,400, and the mean is 2,800. In cities of the State of New York these figures are 1,900 and 1,800.

Grades examined periodically.—Examinations of children prior to first entrance to school are made in 108, or 69 percent, of 156 cities reporting on this point. Information was furnished by 140 cities concerning their schemes for periodic examinations and these present 50 different schedules, which cannot be given in detail here. Preschool examinations only are made in one city. The number of grades in which examinations are made is as follows:

Number of grades	*Number of cities*	*Number of grades*	*Number of cities*
1	3	7	9
2	1	8	8
3	17	9	6
4	14	10	2
5	8	11	1
6	10	12	60

Time given to examination.—The average time devoted to each examination was furnished by 116 cities. The range is from 2 to 30 minutes, the median being 7.3 minutes. The distribution of time given to examination is as follows:

Number of minutes	Number of cities	Number of minutes	Number of cities
1–5	47	16–20	5
6–10	42	21–25	2
11–15	16	26–30	4

In 60 percent, 6 or more minutes, and in nearly 45 percent, 10 or more minutes are allowed.

Methods.—In 40 percent of the cities, all children have clothing removed to the waist and in 40 percent no clothing is removed. In the remaining cities the practice varies; in some cities the clothing of all children is removed; in some the clothing of younger children only; in some the clothing of older children only; and in other cities only the shoes are removed.

Some explanation of the purposes of the periodic examinations is reported by 117, or 70 percent, of the 161 cities. This explanation is given by the teacher in 39 cities; by the nurse in 23; by the teacher and nurse in 48; and by the teacher, nurse, and physician in 7.

In 84, or 63 percent, of 134 cities reporting, some or all the children are accompanied by parents. In 30 of 80 cities reporting, less than 50 percent of the children are accompanied by parents; in 10, from 50 to 74 percent; in 29, from 75 to 99 percent; and in 11 cities all the children examined are accompanied by parents for at least one examination.

Tuberculin and X-ray pictures are reported by 128, or about 80 percent, of the cities. In 23 cities such tests are made in all grades; in 1 city in alternate grades; in 7 cities at least one elementary grade is included; in 4 cities the tests are made in the junior and senior high schools; in 19 cities, all high-school grades; and in 28 other cities tests are made in 1 or more high-school grades. The remaining cities did not specify the grade in which tests are made. In 1 city only "underweight" children are so examined, which would indicate that the officials in charge had not kept abreast of information in this field.

Observations by teachers.—In 141 of the cities reporting, the teacher is responsible for the detection of communicable disease, and in 127 she is expected to report children having gross physical defects. In 97 cities reporting as to who gives instruction to teachers, such instruction is furnished by a physician in 25; by a nurse in 49; by both physician and nurse in 21; by the superintendent in 21; and by the principal in 1.

Facilities for examination and treatment.—Special rooms for use in the examination of children are reported in 110 cities, or about 10 percent, and in 7 others some schools are so equipped. Facilities for refraction are reported by 32, or 20 percent, of the cities. In 4 cities this service is free to all the pupils. In 145 cities glasses are furnished to needy children, the usual array of organizations supplying the funds.

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Dental treatment is reported by 94 cities. In 30 cities extractions and fillings are made, and in 10 all dental services are provided. Altogether, more than cleaning is done in 40 of the 94 cities. In 22 cities the dental service is free to all; in 68, to the indigent; and in 4 a maximum fee of 25 cents is reported.

Twenty-four cities reported that medical treatment is provided free in emergency cases or to indigent children.

Relationships

The question concerning the relation of the health service to health instruction was answered by 117, or 70 percent, of the 161 cities. It is assumed that no relationship exists in the remaining 30 percent. In 28 of the 117 cities there is no relationship; in 16 they are under the same general supervision; in 13 the instruction is directed by the health service; in 54 there is an "advisory" or "cooperative" relationship; in 3 lectures are given by the health service; in 2 literature is furnished; and in 1 the textbooks are selected by the health service. The relationship with the physical education department is much the same. Of 156 cities reporting, 35 report that the health service has nothing to do with conditions affecting safety and health in the school plant, and in 15 it has "little" to do with such conditions. In 17 it is "considerably" concerned with safety and sanitation; in 24 it is responsible and supervisory; in 34 it is advisory and cooperative; in 28 it makes "periodic" surveys; and in 3 it makes continuous inspection.

Needs

To the question "What are the shortcomings of the health service?" 115 school superintendents or other school officials replied. Of this number 11 are content with what they have; 8 complained of lack of special rooms for examining; 4 need full-time physicians; 2 want the service placed under the department of education; and the remaining 90 respondents want more funds for personnel and equipment.

Cities Having a Population of 10,000 to 29,999

Of the 665 school systems in cities having a population of 10,000 to 29,999, 497, or 75 percent, replied to the questionnaire. Four hundred and eighty-seven, or 94 percent, report a health service in some stage of development.

Administration

Of 471 cities reporting in regard to the financing of the health service, 365, or 77 percent, report that it is financed by the board of education; 32, or 7 percent, by the health department; 51, or 11 percent,

jointly by the board of education and the health department; 17, or 4 percent, by the county. In the 6 remaining cities the service is financed largely by organizations. In 345, or 75 percent, of 461 cities reporting, the health service is administered by the board of education; in 41, or 9 percent, by the health department: and in 75, or 16 percent, the service is administered jointly by these two agencies.

Personnel

Supervisors.—In 280, or 56 percent, of the cities reporting, the health service is directed by a physician; in 167, or 34 percent, by a nurse; in 22, or 4 percent, by the superintendent of schools. In the remaining 18 cities the service is directed by an assistant superintendent in one; by the director of health and physical education in 4; by a medical advisory committee in 3; and by the local health officer in 10 cities.

The number of cities reporting the employment of either full- or part-time physicians corresponds closely with the number in which the service is supervised by a physician, and the salaries reported for the supervisors usually are the same as those reported for physicians. It being inferred that the service in this group of cities is generally supervised by a staff physician, no salary data for physicians acting as supervisors are presented, but they are given for physicians in the following section. In the cities in which a nurse acts as director of the health service, the salaries run from $600 to $2,500 a year with a median of $1,500. Since the salaries of supervising nurses are practically the same as those reported for nurses, it may be assumed that one of the regular nurses acts as director.

Physicians.—In 65, or 13 percent, of the 487 cities one or more full-time physicians are employed; in 240, or 50 percent, one or more part-time physicians; in 5, or 1 percent, both full- and part-time physicians, leaving 177, or 36 percent, of the 487 cities without such officers.

Eighty, or 16 percent, of the 487 cities report the employment of physicians in special medical fields for periodic examination of children. Twenty-seven other cities have such specialists on their medical staffs as consultants. Altogether about 20 percent employ specialized physicians in such fields as eye, ear, nose, and throat; tuberculosis; psychiatry; and orthopedics.

Only 41 cities reported the maximum and only 3 the minimum salaries of physicians on full-time. The following is a distribution of the maximum salaries:

Salary group	*Number of cities*	*Salary group*	*Number of cities*
Less than $1,500	7	$3,000–$3,499	7
$1,500–$1,999	3	$3,500–$3,999	6
$2,000–$2,499	6	$4,000–$4,499	4
$2,500–$2,999	4	$4,500–$4,999	4

The salary range is from $1,000 to $4,680, with a median of $3,035.

The pay of physicians on part-time as reported by 28 cities is as follows:

Pay per hour	Number of cities	Pay per hour	Number of cities
$2.00	5	$4.72	1
$2.50	5	$4.86	1
$3.00	4	$5.00	7
$3.33	1	$6.00	1
$3.50	1	$7.50	1
$4.30	1		

Some special training of physicians for their work as school medical officers is reported by 61, or 12 percent, of the cities. This training is usually in public health. In-service training is reported by 20 cities, and attendance at State conferences on school health work is reported by 14 others.

Dentists.—Only 18, or 4 percent, of the cities report full-time dentists. One reports 2, and 16 report 1. Part-time dentists are employed in 132 cities. Altogether one or more dentists are employed by 150, or 31 percent, of the cities, leaving 337, or 69 percent, that do not employ dentists. Only 7 cities reported the maximum salaries of full-time dentists, which are as follows:

Salaries	Number of cities
$1,700	1
$2,500	2
$2,700	2
$3,575	1
$3,600	1

The pay of part-time dentists was reported by 26 cities, as follows:

Pay per hour	Number of cities	Pay per hour	Number of cities
$1.00	2	$2.75	1
$1.67	2	$3.00	2
$1.75	1	$3.25	1
$2.00	8	$3.50	2
$2.25	1	$4.00	1
$2.50	4	$5.00	2

Dental hygienists.—One or more full-time dental hygienists are employed in 57 cities. Part-time hygienists are reported by 23 additional cities and 1 city has a full-time and a part-time dental hygienist. Altogether 81, or 16 percent, of the cities reporting have one or more dental hygienists, leaving 406 cities that do not employ such hygienists.

The maximum salaries in 50 cities reporting run from $500 to $3,000 a year. After the lowest salary the next lowest is $1,000. The following is a distribution of the salaries in the 50 cities:

Salary group	Number of cities
Less than $1,500	19
$1,500–$1,999	22
$2,000–$2,499	6
$2,500–$2,999	2
$3,000–$3,499	1

The median maximum salary is $1,637. Only 19 cities reported the minimum salaries, which range from $1,000 to $1,600, with a median of $1,100. Only 3 cities reported the pay of part-time workers, which is 60 cents, $1.00, and $2.00 an hour.

Nurses.—Of the 487 cities, 355, or 73 percent, report that they employ full-time nurses only; 31, or 6 percent, part-time nurses only; 22, or 4 percent, both full- and part-time nurses; and 79, or 16 percent, did not report.

The maximum salaries of full-time nurses were reported by 319 cities and the minimum salaries by 80 cities. The distribution of these salaries is as follows:

Salary group	Number of cities paying maximum	Number of cities paying minimum
Less than $1,000	5	4
$1,000–$1,499	73	50
$1,500–$1,999	190	25
$2,000–$2,499	45	1
$2,500–$2,999	6	--

The maximum salaries range from $600 to $2,800, with a median of $1,714; and the minimum salaries range from $800 to $2,200, with a median of $1,360.

Special preparation of nurses for school health work was reported by 227, or 46 percent, of the cities. A course in public health nursing is specified in 107, or 22 percent, of the 227 cities. In the remaining cities the school nurses have fulfilled the special educational requirements of the States in which they work.

Only in 25, or 5 percent, of these cities do school nurses do other than school work.

Examinations

Official conducting.—Examinations are made by physicians in 354, or 70 percent, of the cities. This figure does not correspond with that given for the employment of physicians in 310 cities. This discrepancy is due to the fact that where the city health department is in charge of the school medical work, the health officer who makes the examination was not reported as especially employed for this purpose. Examinations by nurses only are made in 10 cities and by teachers in 33. In nearly all instances the physician is assisted by the nurse, and in 104 cities the teacher also helps. In the cities where dentists

and dental hygienists are employed they usually make the examination of the teeth.

Number of pupils per examiner.—The number of children enrolled per full-time physician (when no others are employed) ranges from 965 to 8,000, with a median of 3,250. The number of pupils per full-time dentist ranges from 1,250 to 6,300, the median being 3,200. The number of pupils per full-time hygienist ranges from 1,500 to 6,600, with a median of 3,200. The number of pupils per full-time nurse ranges from 800 to 7,150, the median being 2,500.

Grades examined.—Examination of some or all children prior to their first entrance to school was reported by 328, or 68 percent, of the cities. The grades in which periodic examinations are made were given by 391 cities. All possible varieties of schedules are to be found. The number of grades examined periodically and the number of cities making such examinations are as follows:

Grades	Number of cities	Grades	Number of cities
All	220	6	36
11	2	5	13
10	1	4	27
9	12	3	27
8	28	2	12
7	6	1	7

In 10 other cities only kindergarten or preschool children are examined.

Time given to examination.—The average time spent per pupil on his examination was reported by 328 cities. The distribution of time for examination in these cities is as follows:

Number of minutes	Number of cities	Number of minutes	Number of cities
1–5	105	21–25	2
6–10	118	26–30	17
11–15	50	More than 30	9
16–20	27		

The median number of minutes given to an examination is 8.5.

Methods.—The question concerning the removal of clothing for the examination was answered by 350 respondents. Ninety stated that no clothing is removed; 20 answered "very little"; 7 "outer only"; 24 "it varies"; and 30 "what is necessary." In 17 cities all clothing is removed, but in about half of these only kindergarten or preschool children are so examined. In 150 cities all children examined are stripped to the waist. In the other 12 cities only some children have the clothing removed entirely; and some have it partially removed.

Tuberculin tests and X-ray pictures are made in 350, or about 70 percent, of the cities. Such examinations are conducted in all grades in 30 percent; in grades 7 to 12 in 20 percent; in grades 9

to 12 in 20 percent; and in the ninth grade in 10 percent. In the remaining 20 percent other grades are selected.

In 241 of 407 cities reporting, some or all of the children are accompanied by parents at one or more examinations. In 74 of 213 cities reporting, less than 50 percent of the children are accompanied by parents; in 18, from 50 to 74 percent; in 56, from 75 to 99 percent; and in 65 cities 100 percent of the children examined are accompanied by parents.

Observations by teachers.—It is reported by 421 cities that teachers make observations for signs of communicable disease, and by 332 that they make observations for gross physical defects. In 330 cities the teachers receive some instruction in these matters. Of 290 cities reporting as to who gives the instruction 69 percent report that it is given by a nurse; 11 percent by a physician, and 16 percent by both. In the remaining 4 percent instruction is given by the superintendent, the principal, the city health department, or the local medical society.

Facilities for examination and treatment.—Special rooms for examination are reported by 330, or 70 percent, of the cities. Eighteen cities have their own facilities and personnel for refraction. This service is entirely free in 22 cities. Glasses are furnished to the needy in 300 cities by various organizations.

Provision for dental treatments were reported by 215, or about 45 percent, of the cities. Information concerning the extent of the treatment was furnished by 136 cities. In 67 of these cities it is described as "complete"; in 30 others, extractions are made and in 17, fillings; cleaning only is done in 22 cities. Treatment is entirely free in 80 cities, and free to the indigent in 150 cities. A few cities furnished information as to the charge to other than children of the poor. The charge made is as follows:

Types of treatment	*Charge*	*Number of cities*
Cleaning	$0. 10	1
	. 50	1
Cleaning and filling	. 10	1
Extractions	. 10	1
	. 10–. 50	1
Complete treatment	. 25	10
According to work done	. 20–$2. 00	1
Cost of material only		1

Free medical treatment of poor children is arranged for in 74 cities.

Relationships

The question with reference to the administrative relationship between the health service and the health instruction in the classroom was answered by 360, or 74 percent, of the cities. In 10 percent of

these cities there is no connection, and in 5 percent there is very little relationship. In 8 percent the health service is supervisory; in 7 percent it is a "part of the program"; in 50 percent there is also cooperation or coordination; in 16 percent it is advisory; and in 3 percent both activities are under the direction of the superintendent. In 1 city the health service furnishes "individual instruction"; in 1, "lectures to teachers"; and 1, "lectures and instruction." The replies with reference to the relation of the health service to physical education were similar to the foregoing.

No reply was made by 25 percent of the cities to the inquiry concerning the responsibility of the health service for conditions in the school plant affecting the health and safety of the child. It may be taken for granted that in the schools of these cities the health service has nothing to do with conditions. From the information furnished it is evident that in about 10 percent more of the cities reporting there is little or no relationship. In 15 percent the service is "directly responsible" and in 15 percent inspections are made by the physician or nurse. In 20 percent the health service acts in an advisory capacity; in 10 percent it is "cooperative" or "coordinated"; in the remaining 5 percent the health service inspects only certain things, such as cafeterias.

Needs

Of 350 respondents to the inquiry concerning the needs of the health service, 31 state that the service is satisfactory. This, however, is no indication that it is a model. For example, in one such instance nothing was reported except dental examinations. The need expressed by the remaining respondents was usually for more personnel—physicians, nurses, dentists, and sometimes clerical help. Only 15 report that they are in need of special rooms for examination, although many cities are without such rooms. The need for more frequent examinations and more time for them is often mentioned, but this goes back to personnel and finally to funds.

The chief difficulty in securing treatment of defects and diseases is attributed by 65 percent of the respondents to lack of funds. Parental indifference is mentioned by 20 percent; obstruction by local medical men by 2 percent; lack of clinics by 5 percent; and "ignorance" or the fact that "parents expect too much" and other matters by the remaining 8 percent.

Services Rendered to Teachers and Other Employees

In only 10 cities having a population of 100,000 or more reporting is the medical examination extended to teachers. Other school employees are examined in only 2 cities. Examination of food handlers is reported by 1 city.

In 28 cities having a population of 30,000 to 99,999 the health service is extended in some measure to teachers, and in 25 cities to other school employees. Examinations are offered in 21 (annually in 7), and in 5 there is a consultation service for teachers. Tuberculin tests and X-ray pictures are reported by 4 cities.

In 76 cities having a population of 10,000 to 29,999 the medical service is extended to teachers. Examinations without specification as to the kind are reported by 30 cities; a "preliminary examination" by 1; annual examination by 2; examination every 3 years by 4; annual examination and after 6 days' illness by 1. Tests for tuberculosis are mentioned by 15 cities; first aid or emergency by 2; advisory service by 2; immunization by 3; and whatever is requested or required by 3. The remaining 23 cities do not report the type of service.

Progress—1930 to 1940

In cities of all three population groups there was a much larger response to our recent inquiry than to that of 10 years ago. This in itself may indicate that the cities are more interested and felt that they have more to report. The increase in the number reporting and the shift of cities from smaller to larger population groups which the more recent census brought about, disturb somewhat any comparison of data.

There has been an increase in the number of cities having a health service in some stage of development, for in 1930, 10 percent of cities then in the second group reporting and 17 percent in the third group were without a service. In 1940 the corresponding figures were 1 and 2 percent.

Taken as a whole, there has been little if any change in the methods of administration of this work. Roughly, these activities are, in all cities, directed by the Department of Education in 70 percent; by the Department of Health in 20 percent; and jointly by the two agencies in the remainder.

There has been a decided increase in salaries of full-time physicians in charge of this service. In 1930, 6 of the first group paid $4,000 or more, while in 1940 the number was 32. The decided increase in trained workers, both physicians and nurses, is most encouraging.

In 1930, the average number of pupils per nurse in the largest cities was 3,330 and in the second group, 3,100. In 1940 the corresponding means were 2,600 and 2,800. Other things equal, this change is certainly a sign of more thorough work. No information with reference to the time spent upon the examination of the child was collected in 1930, but the reports of the present year will come as a surprise to many school hygienists. There has been a decided in-

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crease in the number of children stripped for examination of all or part of their clothing and a preliminary explanation of the examination, which was scarcely heard of in the previous decade, has become fairly common.

Tuberculin tests and X-ray examinations were nearly unknown to school health work in 1930, but are now made in three-fourths of the cities.

The teacher has assumed to a large degree her deservedly important place in the scheme of health examinations. However, the extension of the benefits of the medical service to teachers has not advanced rapidly.

The extent to which that most essential agent, the parent, is ignored in the scheme of health examinations has been very much diminished, for in the past 10 years the percentage of children accompanied by this person, from whom the examiner may learn much and who may profit much from the examiner, has been increased fourfold. Even if the figures furnished refer only to the first examination, which we hope is not the case, this is a great advance over the autocratic and uneducational methods of some years ago.

It is quite evident that, in a large proportion of cities, the health service and the other phases of health work are not so well fused as they should be, but there is evidence of progress in this direction.

Less than one third as many superintendents are now satisfied with their personnel and procedures, which is a good sign. It means that the superintendent takes a larger and more serious look at the situation. Probably in the great majority of all cities there is need for better organization and direction and in-service training, which would lead to a better and much more economic service. The health service should be a part of the whole scheme of school health activities and these are too complicated and diverse to be directed by a superintendent or by anyone not highly trained for this work. Unfortunately, at the present time, such directors are few and far between but the demand is growing, and it is to be hoped that the supply will soon equal that demand.

Review

The end result aimed at by all systems of school health service, from the simplest to the most complex, and regardless of differences in the administrative arrangements is: (*a*) The prevention of diseases and defects, and (*b*) the removal or treatment of defects and diseases.

For the prevention of diseases, and the defects which often follow, the total machinery is not simple. It involves the vigilance of the custodian, *teacher*, nurse and maybe the physician. The parent

should be included for good measure (with emphasis on the "good") for the parent may often be persuaded to prevent the presence of the ailing child at school. Leaving out the parent, the custodian may minimize the possibility of the development of conditions favoring infection. But it is to the *teacher* that we look most hopefully for results in this field. The trained (sensitized) teacher will note at a glance whether anything is amiss with the child on his daily appearance in school, appraise the situation, and act accordingly.

In bringing about the second of these results—the removal or treatment of physical defects and diseases—the machinery seems simple enough. The school child is brought directly, or through the medium of an observant teacher or nurse, before a physician who decides whether, in his opinion, that child falls within the category of the "normal" or of the "abnormal." If the latter, the family is directly, but more often indirectly, so informed. If everything is done for the child that can be done, the machine has functioned 100 percent; if nothing is done, the outcome is zero.

It is evident that this simple machine works in varying social surroundings and is affected in its action by parental knowledge and prejudices, by medical habit and opinion, and by public provision for the care of the less fortunate. In fact, this social and psychological background is part and parcel with the physician-child contact, influences enormously the final outcome of the examination, and incidentally the saving or wasting of public funds.

The machine for benefiting the child is a human mechanism and the physical examination of the child is far from an exact process. There are border-line cases which are classed as normal by one examiner and as abnormal by another, according to his schooling and experience. There is also the matter of the time allowance for examinations, for we can hardly expect the same results from a hasty as from a sufficiently leisurely study. But given an agreement in immediate findings by the examiners, the end results sought differ enormously from school system to school system and it is evident that those results differ chiefly because of the faultiness or effectiveness of the intermediate influences at work.

In the same State and under the same methods of administration, three times as many ailing pupils are reported by some cities as by others and there is an even wider range in the percentage of ailing pupils (from 15 percent to 90 percent) for whom anything is done. It is evident that there is something essentially wrong somewhere in these contrasting outcomes and that there is, the country over, a great waste of public funds either in doing too much or too little.

Strange to say, little attempt has ever been made to measure the relative effectiveness of these various pieces of machinery in attaining

the ends sought. The chief fault, so far as the school service is concerned, lies in the lack of informed direction and of trained personnel, but that service is bound up with the general social machinery for public welfare. This whole matter of school medical and dental work is of such recent origin that perhaps we are "doing as well as could be expected" and some communities are doing very well indeed.

The following accounts of a few local services, in communities of different sizes, are representative of the variety of organization and procedure throughout the country. A very detailed account of the Department of Health in the schools of Des Moines, developed by the late Dr. Fred Moore, will be found in a recent publication of this Office, *Organization and Administration of School Health Work*, by Dr. Fred Moore and U. S. Commissioner of Education John W. Studebaker. (Bulletin, 1939, No. 12.)

Representative Local Health Services

Ann Arbor, Mich.

In Ann Arbor the School Health Service is financed and administered by the Board of Education. It is in charge of a full-time physician, who is a graduate in medicine and holds an M. S. degree in public health. The maximum salary for this position is $4,500.

Personnel and preparation.—Besides the director, the service includes a full-time dental hygienist and 2 full-time nurses. The maximum salary for these 3 agents is $2,100. No medical specialists are employed. There are about 4,600 pupils in the schools so that there is 1 full-time nurse for 2,300 children.

By way of preparation for their positions, the physician is expected to present an M. S. degree in Public Health and the nurses must have certificates in public health nursing. In-service training is obtained through university courses.

Examinations.—Examinations are made by the school physician of all kindergarten and all new pupils not examined by their family doctor and of all pupils referred by the teachers. Teachers and physical education teachers jointly inspect all children in grades 1, 2, 3, 4, 5, 6, 7, and 10. All dental examinations are made by the hygienist with mirror and probe.

Parents are invited to be present and about 75 percent of the children are accompanied at their first examination conducted by the physician. Clothing is removed to the waist in small children and boys. An average of about 15 minutes is consumed for the examination. A preparatory explanation of the examination is given by the teacher. X-ray pictures are offered at one-fourth the usual fee to all tuberculosis contacts and to all junior and senior high school pupils.

The Lions Club furnishes free refraction by an oculist and glasses to the children with parents of low income.

All elementary school teachers carry out daily inspection and exclude children with signs of contagious disease. In addition through daily observation of pupils teachers are alert to signs of defects and disease. The school furnishes no treatment.

Examination of school employees.—A medical examination including an X-ray of the chest is required of teachers before employment and at 5-year intervals. The first examination is made without charge by a designated board of medical examiners.

Special classes.—The health service selects children for special classes, namely, sight saving, hard of hearing, orthopedic, mentally retarded, and makes arrangement for their care in State financed schools. The Board of Education furnishes transportation by bus free of charge to these pupils.

Relationships.—The medical service acts in an advisory capacity with reference to health instruction and physical education. As noted above, the physical education teachers assist with the annual inspections of children and are therefore sensitized to the condition of those in their charge.

School conditions.—The school physician makes an annual tour of inspection of conditions in the school plant in company with the Superintendent of Buildings and Grounds and makes recommendations for changes to the Board of Education.

Fayetteville, N. C.

Fayetteville is an example of a school health service which is a part of or furnished by a county health service and directed by the County Health Officer. This officer has obtained the degrees of B. A., M. D., and C. P. H., and is paid a salary as health officer of $4,000.

Personnel.—The school service is carried out by the health officer as director and medical examiner; 1 part-time dentist at $2,300; 5 nurses at $1,500; and a supervising nurse who is paid $1,800. As the nurses carry out all the duties of public health nurses, they are, so far as the schools are concerned, on part time. The nurses must have a certificate of at least 3 months' work in a recognized school of public health nursing. There is no in-service training except that derived from supervision.

Examinations.—Periodic examinations are made by the health officer in grades 1, 2, 4, and 7, and the physician is accompanied by a nurse. Only about 5 percent of children are accompanied by a parent. Clothing is removed to the waist and the examination lasts on the average about 10 minutes. A preliminary explanation of the purposes and processes of the examination is made by the classroom teacher.

Tuberculin tests and X-ray pictures of positive reactors are made of all children every 3 years. Facilities for refraction are furnished by the Cumberland County Blind Association.

A 25-week mouth health program is carried out in the schools by the part-time dentists each year and this service is free to all.

Extension and relation of service.—No medical service is extended to teachers or to other school employees and there are no special classes in these schools.

A yearly inspection of the school plant is made by the health officer.

The health instruction by teachers is supplemented, in all grades, with talks by nurses.

Yearly preschool clinics are held for all children about to enter school.

Hartford, Conn.

The health service of the Hartford schools was recently organized, having originated with the consolidation of the several school districts in which the city was divided until a few years ago. This work is financed and administered by the Board of Education and the director is also in charge of health instruction, physical education, and athletics. The service is therefore a feature of a Department of Physical and Health Education. The director remarks that they think of their service as a "health guidance" program in which the school physicians become "medical advisers" and the school nurses "health advisers."

Personnel.—The director of this service, or guidance, has been trained in education, physical education, and medicine. His salary is $5,600. His staff consists of 11 part-time physicians (about 1 for 2,700 pupils). These physicians serve for a total of 82 hours per week. There are 8 part-time dentists (1 for 3,400 pupils); 8 full-time hygienists (the same ratio); and 22 full-time nurses (1 to 1,250 pupils). The physicians and dentists are paid from $3.00 to $4.00 per hour; the dental hygienists from $1,000 to $1,800; and the nurses from $1,400 to $3,100. No special medical fields are represented.

No special preparation is required of the medical officers before employment but staff meetings are held monthly at which problems, procedures, and results are discussed. Monthly conferences of nurses and hygienists are also conducted. The nurses must have had 6 semester hours of public-health training subsequent to graduation from an approved fundamental course in nursing.

Examinations.—Examinations prior to school entrance are offered but parents are encouraged to take children of all ages to their own private physician and dentist for examination. Specific forms are furnished for this purpose. Annual examinations are made in all grades from the kindergarten to the twelfth. These are made by a physician assisted by a nurse. Prior to the visit of the physician, the teacher has measured and weighed the child and a nurse has tested his vision and hearing. The examinations of the teeth are made by a dentist. The time devoted by the physician averages 6 minutes per child. The parents are invited to be present and at the first examination, 75 percent of children are attended by one or both of these important relatives. Children are stripped to the waist. Prior to the examination a preparatory explanation of its purposes and procedures is given in the classroom by the teacher. Tuberculin

tests are given, with the consent of parents, in the eleventh grade, and X-ray pictures are made of positive reactors.

Between periodic examinations children showing signs of communicable disease or physical defects are referred by the teacher to the physician. The preparation of the teacher for this important function is furnished through instruction by physicians and nurses supplemented by literature.

After examinations.—As elsewhere the nurses spend much of their time in explaining to parents the need for treatment, information of which has been transmitted by official notice from the school, and in helping those unable to pay for medical service.

Refraction is not furnished by the school but for this and other treatment for the indigent there are public clinics under other city departments. No dental clinics are maintained by the school.

Other work of the service.—The health service recommends and supervises the special care and training of the more seriously defective pupils and educational programs for such children are arranged jointly with the Department of Guidance.

The health service is not extended to teachers or to other school employees, but detailed sanitary inspections of all buildings are made at least three times every year.

As already noted, the director of the health guidance service is also the director of health instruction, physical education, and athletics so that all of these activities are fully related and coordinated.

Mount Vernon, N. Y.

In Mount Vernon the health service is financed and administered by the Department of Education. It is under the general supervision of a full-time physician who is paid a salary of $5,500. The director has had many years' experience in pediatrics and in public health and institutional work in the fields of tuberculosis, mental deficiency, delinquency, and endocrinology, as well as administrative experience.

Personnel.—Three part-time physicians are employed; one at $1,575 and 2 at $1,000 each. There is, approximately, one physician for 3,250 pupils in all grades. There are 3 part-time dentists at $900 and $564; one dental hygienist at a salary which begins at $1,100 and reaches $3,300; and 9 full-time nurses with the same range of salaries. The supervising or head nurse receives $3,800. There are about 1,400 pupils per nurse.

One of the medical staff is a specialist in orthopedics and another has had special training in endocrinology and in mental deficiency. Cases falling into these classifications are given special attention by these examiners. Ophthalmologists, otologists, cardiologists, and tuberculosis specialists are called in consultation when it seems advisable.

Preparation of personnel.—Those physicians who were lacking in an adequate amount of diagnostic and of public health preparation have taken the course in school health work offered at Columbia University. In-service training consists of staff conferences, graduate courses in special medical fields, and attendance at the various institutes arranged by the State departments of education and of health.

The school nurses meet the requirements of the State for certification as "nurse-teachers," which, in addition to graduation from an approved nurse training institution, consists of 30 semester hours in approved professional courses as follows:

	Semester hours	
	Minimum	*Maximum*
Principles of education	2	4
Psychology for teachers	2	4
Nutrition	2	6
Public health nursing (including field work)	6	10
Family case work (including field work)	4	6
Public health statistics	2	4
Teaching home hygiene and child care (including methods and supervised student practice)	4	6

After careful study of the abilities and personal qualifications of the individual nurses, they are placed in the school districts most needing their particular qualifications. They are left in those school districts until they thoroughly know the families and are looked upon as a friend and adviser. This has proven a great aid to efficiency and a time saver. As a result, only one-half of the time of the head nurse needs now be given to supervision. The other half of her time is given to the regular work—quite difficult—of the technical high school. Most of the nurses have qualifications beyond those required by the State for certification.

Examinations.—With the cooperation of the Parent-Teacher Association, examinations of children prior to entrance are held annually. Examinations are also made of all new entrants and of all children in the third, sixth, eighth, tenth, and twelfth grades. All candidates for athletic teams are examined annually and all previously reported heart cases, tuberculosis suspects, orthopedic subjects, and children with defects of vision and hearing or any other major defect.

The teacher is not present at the examination unless her observations have made this advisable. A nurse makes vision and all hearing (audiometer) tests and inspects for cleanliness and communicable diseases. Teachers also do some eye testing and inspect for cleanliness. Dental examinations are made by the physician but the dental hygienist inspects the teeth of pupils in the first and sixth grades and the graduating class in the junior high schools.

Tests for tuberculosis are made of preschool children and of those applying for work certificates. Chest X-rays of senior high school

pupils have been made for the last few years. Beginning this year (1941) we are tuberculin-testing senior and junior high school pupils with X-rays of reactors.

From 10 minutes to 1 hour is spent by the medical examiner in his periodic examinations according to the needs of the case. Especially in older pupils the examination is made a health consultation, going over with the pupil his entire health record, from kindergarten through high school, with a view of illness prevention and also vocational guidance.

Boys are examined by men and all clothing is removed. Girls are examined by women physicians; are stripped to the waist and then covered with an examination robe. They also remove shoes and stockings.

Parents are usually present at the examination of children in the lower grades, and of new pupils, but rarely later unless there is some special reason for their presence. No preliminary explanation of the examination is given, but where new families are represented, they are visited in the home by the nurse, at which time the purpose of the examination is gone into.

Health education talks are given to Parent-Teacher Associations, to groups of teachers, clubs, service, and church groups.

Between periodic examinations, daily observations by the teacher and nurse are depended upon for the detection of communicable disease and gross defects. The teacher is instructed by the nurse in this function.

After examination.—All indigent cases of seriously defective vision are retested free at an eye clinic maintained by the Mount Vernon Hospital for the schools and the Board of Education pays for any special examinations by an ophthalmologist which seem to be indicated for a charge of $5.00. Board of Education pays for glasses for those unable to pay for them.

A complete dental service for both deciduous and permanent teeth is furnished without charge to children of indigent parents. No clinic is maintained for medical cases. This school year (1940–41), for the first time, a complete dental survey from kindergarten up to the seventh grade was conducted by the dental hygiene teacher under the supervision of the dentist in charge.

Examination of school employees.—Teachers are examined by the physician before employment and annually until actually placed. Custodians and cafeteria workers are examined before employment and after any prolonged illness.

Special classes.—Children in special classes are selected by the school physicians. They are re-examined at regular intervals and their physical care is supervised by the service.

Sanitary inspections.—Inspections of school housing conditions are made annually and recommendations for change are made to the assistant superintendent in charge of maintenance and repairs.

Relationships.—Physical education and health instruction are under the supervision of the Department of Physical Education. Excuses from physical activities are passed on by the school physicians.

Newton, Mass.

The school health service of Newton is financed and administered by the Department of Health and is under the general supervision of the city health officer, who is both a physician and a Doctor of Public Health.

Personnel.—The school staff consists of 11 part-time physicians or about 1 per 1,250 children; 2 part-time dentists or 1 to 6,300 pupils; 1 full-time dental hygienist and 9 public health nurses, including a supervisor, who carry on a generalized public health nursing program, including school nursing in public and parochial schools. The physicians are paid at the rate of $4.00 per hour; the dentist, $3.00 per hour. The dental hygienist receives $1,500 and the nurses $1,650, with a range from $1,500 to $1,800 per year. A pediatrician is employed for the preschool conference.

Preparation of personnel.—No special preparation is required of the school physicians but staff meetings are held. The physicians and nurses are appointed through civil service examinations. The nurses have all had courses in public-health nursing and there is constant staff education. This includes lectures, planned courses, meetings, conferences, and projects. The nurses give only a part of their time to school work as a system of generalized service prevails, including infant and preschool work, tuberculosis, and the management of other communicable diseases.

Examinations.—In the year in which information was furnished, examinations were made of children in grades 1, 3, 5, 7, 9, 10, 11, and 12, and of all new pupils and of all pupils referred to the physician for some special reason. The physician is assisted in his examinations by a nurse. Weighing and measuring are done twice a year by a teacher or a physical education director, who also makes vision tests of all pupils annually. A special teacher of "speech reading" is responsible for the tests of hearing. Dental examinations are made in all elementary grades by the dental hygienist but the physicians make such examinations in the junior and senior high schools.

Parents are invited to the periodic examinations and in the kindergarten 60 percent of children are accompanied; in the third grade, 32 percent, and in the seventh grade 13 percent are accompanied by parents. Shoes are removed for the examinations and clothing to the

waist. About 10 children are examined per hour in the kindergarten, third, and seventh grades (6 minutes per pupil), and 20 per hour in other grades (3 minutes per pupil).

A preliminary explanation of the examination is made by teachers and occasionally by the nurse when requested.

Tuberculin test and X-ray pictures were made in grade 11 in 1939 but these may be discontinued.

After examination.—There is no refraction service but needy cases are sent to a local hospital.

Dental treatment is furnished by a public health clinic to all elementary school children who cannot afford private service. This includes everything except orthodontia.

The teachers are instructed by the department of health in observation for signs of disease or defects.

Extension of service.—Medical examinations, including X-ray pictures, are made without charge of teachers on employment, and annually of all food handlers in the school cafeterias.

The nurses and doctors make inspections of the school plant and refer conditions needing attention to the proper authorities.

Special classes.—The service aims to prevent and to follow up all cases which may need special care in school, and conferences are held with the principal and teachers of special classes.

Relationships.—Although the school health service is directly under the administration of the health department, policies are established by a joint school health committee appointed by the superintendent of schools and the health officer. All activities of the health department affecting the school health service are discussed at the regular monthly meetings of the committee. Every effort is made to promote good relationships and to make the service educational from every aspect.

Philadelphia, Pa.

Philadelphia was a pioneer in the development of a health service and the age of that service is the age of this century. Since the primary object of the service was the reduction of communicable disease, the system of medical inspection was inaugurated by the Bureau of Health and with a corps of physicians to inspect the children for signs and symptoms of such diseases. To these were added later a number of nurses to see that everything possible was done about the cases found and especially the diseases of the skin.

The Pennsylvania law of 1911 provided that every school district should annually provide medical inspection of all pupils by proper medical inspectors appointed by the board of school directors. However, in districts of the first class (Philadelphia and Pittsburgh) the Department of Health was permitted to continue such work already

begun but "with such salaries as shall be satisfactory to the board of school directors" and "the salaries are to be paid for by the school district." The Board of Education habitually places all medical service under the Director of the Division of Medical Inspection in the Department of Health. From the legal standpoint, therefore, the activities of this division are jointly those of the school and health authorities. The supervising personnel of the service are all housed with that of the Department of Education and to most intents and purposes they are one.

Personnel.—The director, who has filled the position since 1912, holds the degrees of B. S., M. D., and D. P. H., and is paid a salary of $6,500. The medical staff at the present time consists of 2 special assistants; 10 medical supervisors of whom 8 are district supervisors; 93 school physicians (medical inspectors) of whom 89 give general service, 2 examine children applying for junior employment certificates, and 2 have charge of an eye clinic which treats 3,500 children annually; 1 nurse supervisor; 93 nurses of whom 3 have special assignments; 12 secretarial assistants; 1 chief physiotherapy technician, and 1 laboratory technician. Full medical, dental, and nursing services are supplied to the residential school for truant boys operated by the Board of Education. The local chapter of the Infantile Paralysis Foundation supports the medical service at the special orthopedic school by supplying a consulting orthopedist and 6 physiotherapy technicians. No dentists or dental hygienists are employed except the service at the residential school just mentioned.

Preparation of personnel.—No special preparation is required of physicians or of nurses beyond their basic professional schooling but thorough in-service training is provided and neither nurse nor physician can advance beyond the half-way point on the salary schedule until he or she has completed four approved courses in public health.

The director in one of his annual reports remarks—

> School health service is primarily medical service, and our first aim, from the administrative standpoint, has been to have well-trained and well-qualified physicians who will hold the respect of the medical profession and the teaching body. Without losing sight of this fact, the thought has been constantly borne in mind that the school medical inspector is a part of the school organization, in which he should play a part in the general program of health education of pupils and teachers.
>
> School nurse service is a specialized health service and routinely different from bedside nursing. Every nurse should have a compelling desire to relieve the sufferings of the sick and to counsel the well so that good health may be maintained. The public health nurse, however, must have as a condition for successful work, a good personality, good general education, and ability to sell the idea of good health to the average citizen.

Examination of children.—Examination is offered, in June, of children who are to enter in September. Such examinations include

(*a*) previous medical history; (*b*) health habits; (*c*) behavior abnormalities; (*d*) immunization status; and (*e*) physical condition. "These special medical examinations with the parent present and with an opportunity for full undressing of the child, approach the ideal school health examination. However, they consume about 30 minutes, and even if parents would come to the school when invited and arrive there on schedule, the cost to the school authorities for such a service in all grades would be doubled." Since the examination of these preschool children is made by an official who is, nominally at least, an employee of the department of health, there is no question of prerogative nor can there be friction in the prevention or management of communicable disease.

Annual examinations are conducted in special rooms. Coats and shoes are removed and if necessary for a better inspection of the skin, or a more thorough examination of the chest, the outer clothing above the waist may be removed. Above the sixth grade the examiners are of the same sex as the pupils. Routinely the next pupil to be examined is at the door of the examining room and serves unwittingly as a witness of the examination of his fellow. The physician is unassisted. The director is of the opinion that the examination would be expedited by the help of a nurse but not commensurately with the increase in expense. Pupils receive a preliminary preparation for their examination in that the value of the examination is explained in the regular curriculum in health education.

The average time per pupil spent on periodic examinations is 7 minutes. The examination covers the condition of the eyes, ears, nose, throat, teeth, heart, lungs, spine, feet, skin, nervous system, and nutrition. The distant vision is tested with use of an electrically illuminated Snellen chart. A stethoscope must be used when the heart is examined. The child's weight, height, and age are noted. The dental examination is limited to direct inspection.

There are numerous special services, including a consulting ophthalmologist who works with the personnel of the Division of Special Education; a nurse who does audiometer testing; a clinic for the examination of food handlers; a venereal disease diagnostic clinic; a supervisor in charge of tuberculosis work; a special assistant in charge of nutrition work; and a supervisor who makes periodic health examinations of school employees.

Routine examinations for tuberculosis are not made but in a recent year 8,000 high-school students were X-rayed through funds furnished by the local tuberculosis association.

The annual examination is required by law and the director is of the opinion that this is a wise law as the expense per examination

of about 25 cents is well worth the cost. Since there is no other dental examination, this fact adds to the justification. This estimate is for the annual examinations only. The total cost, including the work of the nurses, is about $350,000, averaging about $1.25 per pupil.

Between periodic examinations children suspected by the teacher of having developed acute or chronic ailments are referred to the physicians at their regular visits and about 2,000 such children are examined by each physician during the course of the year.

After examination.—Following examinations, the school medical inspectors send notices to the parents of children needing medical, dental, or general hygienic attention, and this is supplemented by the work of the nurse in persuading and helping reluctant or indigent parents to respond. Of the children found to possess remediable diseases and defects, about 50 percent will eventually receive treatment. Within this group the parents of about half are unable to meet this expense and it is especially with this group that the nurses must spend much of their time. Except for cases needing first-aid treatment and some skin affections which it seems best to handle in school, and for cases needing refraction, no treatment is furnished by the school authorities. However, food for needy undernourished children, orthopedic appliances, and eyeglasses are supplied through a special Public School Health Fund derived from donations by the Junior Red Cross and other organizations.

The municipality provides 12 dental clinics for the children whose parents are unable to pay for treatment, and there are many public clinics for medical care.

The school health service has been integrated with the general school program by including the record of the child's physical condition on the school report, sent to the parent six times each year.

Examination of school employees.—Medical examinations designed to determine fitness for service are made of all applicants for employment and this includes an X-ray examination of the chest. All teachers and others absent for 3 months or more on account of illness are examined, usually at the home of the absentee. All employees applying for retirement on account of disability are passed on by the school physicians.

All employees of the Board of Education receive periodic health examinations at intervals of approximately 5 years. These are made, if desired, by the Division of Medical Inspection, without charge. "In all cases the examinations are confidential and intended entirely for the benefit of the employee." The division makes the examination, every 6 months, of 650 food handlers employed in school cafeterias as required by law.

Special classes.—Pupils in special classes for the physically handicapped are recommended by the division and are under its medical supervision. The orthopedic classes enroll 600; the nutrition classes 400; the sight-saving classes 250; and the deaf classes 150. Health instruction for 1,800 undernourished children enrolled in regular classes is furnished weekly by the nurses. A clinic is held by the division for the examination of mentally deficient children. Absentee pupils alleged to be incapacitated are visited and investigated by the medical inspectors.

Sanitary inspections.—The Department of Buildings is primarily responsible for the maintenance of school plants, including the housekeeping services of the custodians but, in compliance with the school law, the Division of Medical Inspection makes an annual survey of conditions affecting safety and health with specific rating of 67,000 sanitary items existing in 265 school buildings. Definite standards are used for appraisal of both buildings and classrooms and they are rated accordingly.

Relationships.—Health instruction and physical education are independent of the health service and are administered by a Director of the Division of Physical and Health Education, which is under the superintendent of schools. This division works in close cooperation with the Division of Medical Inspection.

Annual examinations are conducted in special rooms. (See page ical inspection have, since the establishment of the division, been a joy to those interested in such work and the reader is referred to those reports for intimate and interesting details which cannot be furnished in the compass of this sketch. Any statements concerning personnel, costs, and procedures are exceedingly rare in our country, but besides this information, these reports contain the results of valuable pieces of research and such research has been as infrequent as it has been sorely needed. The division of medical inspection has not only contributed to the safety and welfare of the children of Philadelphia but to the welfare of the country at large, and it has done so because it is headed by a person with vision and with training.

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Appendix

TABLE 1.—*The organization and administration of health services—1940 (cities of 100,000 and more)*

City	Administration			Supervision by physician	Staff [1]								Specialists or consultants
					Physicians		Dentists		Dental hygienists		Nurses		
	Board of education	Department of health	Jointly		Full time	Part time	Full time	Part time	Full time	Part time	Full time	Part time	
1	2	3	4	5	6	7	8	9	10	11	12	13	14
ALABAMA													
Birmingham	X	—	—	X	—	4	—	—	—	—	—	2	O
CALIFORNIA													
Long Beach	X	—	—	X	1	2	1	—	1	1	14	2	O
Los Angeles	X	—	—	X	35	17	15	5	—	—	94	—	X
Oakland	X	—	—	X	2	13	—	—	1	—	23	2	X
San Diego	X	—	—	X	1	1	—	1	2	1	25	—	X
San Francisco	—	X	—	X	2	16	—	15	4	—	40	—	X
COLORADO													
Denver	X	—	—	X	2	3	—	3	—	1	—	18	O
CONNECTICUT													
Hartford	X	—	—	X	—	11	—	8	8	—	22	—	O
DELAWARE													
Wilmington	X	—	—	X	—	3	—	3	3	—	7	—	O
FLORIDA													
Jacksonville	—	X	—	X	—	2	1	—	—	—	16	—	O
Tampa	X	—	—	X	—	2	1	—	—	—	—	2	O
GEORGIA													
Atlanta	—	—	X	X	—	9	1	—	1	—	6	16	X
ILLINOIS													
Peoria	—	X	—	X	1	—	2	1	2	1	18	—	X
INDIANA													
Fort Wayne	X	—	—	X	—	X	—	—	—	—	—	—	X
Gary	X	—	—	X	2	—	2	—	3	—	9	—	X
Indianapolis	—	X	—	X	—	9	—	9	5	—	44	—	X
South Bend	X	—	—	(2)	—	—	—	—	—	—	10	—	X
IOWA													
Des Moines	X	—	—	X	—	7	—	1	2	—	21	—	X
KANSAS													
Kansas City	X	—	—	(2)	—	—	—	1	—	—	9	—	O
Wichita	—	X	—	(3)	1	—	—	4	—	—	8	—	O

See footnotes at end of table.

TABLE 1.—*The organization and administration of health services—1940 (cities of 100,000 and more)*—Continued

City	Administration			Supervision by physician	Staff [1]								
					Physicians		Dentists		Dental hygienists		Nurses		
	Board of education	Department of health	Jointly		Full time	Part time	Full time	Part time	Full time	Part time	Full time	Part time	Specialists or consultants
1	2	3	4	5	6	7	8	9	10	11	12	13	14
KENTUCKY													
Louisville	—	X	—	X	1	8	—	2	—	—	45	—	X
MARYLAND													
Baltimore	—	—	X	X	6	38	—	5	—	—	147	—	X
MASSACHUSETTS													
Boston	X	—	—	X	—	66	—	—	—	—	65	—	X
Fall River	—	X	—	X	10	8	—	—	—	—	9	1	O
New Bedford	X	—	—	X	1	—	—	—	—	—	8	—	O
Somerville	—	X	—	X	—	8	—	6	—	6	4	—	X
Springfield	—	X	—	X	—	16	—	8	8	—	18	—	O
Worcester	—	X	—	X	—	12	—	7	7	—	30	—	X
MICHIGAN													
Detroit	—	X	—	X	—	50	10	—	—	—	99	—	X
Grand Rapids	—	X	—	X	1	2	3	—	—	—	18	—	O
MINNESOTA													
Duluth	X	—	—	X	—	2	—	1	—	2	—	7	X
Minneapolis	X	—	—	X	1	11	—	1	9	—	59	—	X
Saint Paul	X	—	—	X	—	7	—	—	3	—	24	—	X
MISSOURI													
Kansas City	X	—	—	(3)	—	15	2	6	1	—	37	—	O
St. Louis	X	—	—	X	18	3	—	—	—	—	39	—	X
NEBRASKA													
Omaha	X	—	—	X	1	1	1	—	—	—	12	—	O
NEW JERSEY													
Camden	X	—	—	X	1	9	—	1	—	—	11	—	O
Jersey City	X	—	—	X	—	30	—	—	[4] 8	—	53	—	X
Newark	X	—	—	X	—	24	1	1	—	—	45	—	X
Paterson	X	—	—	X	—	—	—	—	—	—	—	—	O
NEW YORK													
Albany	X	—	—	(5)	—	3	—	2	2	—	14	—	O
New York	—	X	—	X	8	103	—	63	69	—	475	—	X
Syracuse	X	—	—	X	1	12	—	2	6	—	17	—	X
Utica	X	—	—	X	—	6	—	2	4	—	8	—	X
Yonkers	X	—	—	X	—	6	—	1	5	—	12	—	X
OHIO													
Canton	X	—	—	X	—	1	—	2	—	—	4	—	O
Cleveland	X	—	—	X	1	30	5	—	20	—	49	—	X
Dayton	—	X	—	X	—	4	—	3	—	—	5	—	O
Youngstown	X	—	—	(3)	—	1	1	—	—	—	8	—	O
OKLAHOMA													
Oklahoma City	X	—	—	X	—	1	1	—	—	—	3	—	O
OREGON													
Portland	—	X	—	X	—	5	—	8	[6] 8	—	24	—	X

See footnotes at end of table.

TABLE 1.—*The organization and administration of health services—1940 (cities of 100,000 and more)*—Continued

City	Administration			Supervision by physician	Staff [1]								
					Physicians		Dentists		Dental hygienists		Nurses		
	Board of education	Department of health	Jointly		Full time	Part time	Full time	Part time	Full time	Part time	Full time	Part time	Specialists or consultants
1	2	3	4	5	6	7	8	9	10	11	12	13	14
PENNSYLVANIA													
Erie	X	—	—	X	1	4	—	8	—	—	8	—	X
Pittsburgh	—	—	X	X	39	—	—	14	—	—	33	—	X
Philadelphia	—	—	X	X	13	91	—	—	—	—	93	—	X
Reading	X	—	—	X	—	5	—	1	5	—	11	—	O
Scranton	X	—	—	X	—	9	—	3	4	—	11	—	O
RHODE ISLAND													
Providence	X	—	—	X	—	8	—	9	—	—	16	—	X
TENNESSEE													
Knoxville	X	—	—	[5]	—	3	—	2	—	—	5	—	O
Memphis	—	X	—	X	2	2	2	—	—	—	48	—	—
Nashville	X	—	—	X	3	—	—	—	—	—	8	—	O
TEXAS													
Dallas	X	—	—	X	2	—	—	—	1	—	19	—	O
El Paso	—	X	—	X	—	—	—	—	—	—	—	—	—
Fort Worth	X	—	—	X	1	1	1	1	—	—	22	—	X
Houston	X	—	—	X	1	15	—	—	1	—	24	—	O
UTAH													
Salt Lake City	X	—	—	X	1	—	—	—	—	—	2	—	X
VIRGINIA													
Norfolk	X	—	—	X	1	2	—	3	—	—	—	—	X
Richmond	X	—	—	X	1	3	1	2	—	—	15	—	O
WASHINGTON													
Seattle	X	—	—	X	2	2	—	—	—	—	24	—	X
Spokane	X	—	—	X	1	1	—	2	1	—	5	—	O
Tacoma	X	—	—	X	1	—	—	6	—	—	6	—	O
WISCONSIN													
Milwaukee	—	X	—	X	1	33	3	2	—	5	85	—	X

[1] No. including WPA help.
[2] By nurse.
[3] By Supervisor of Health and Physical Education.
[4] Dental nurses.
[5] By superintendent of schools.
[6] Dental assistants.
X=Yes.
O=No.
—=Not answered.

TABLE 2.—*Salaries (cities of 100,000 population and more)*

City	Supervisor of health service [1]	Physicians			Dentists			Dental hygienists			Nurses		
		Full-time		Part-time salaries [2]	Full-time		Part-time salaries [2]	Full-time		Part-time salaries [2]	Full-time		Part-time salaries [2]
		Maximum	Minimum		Maximum	Minimum		Maximum	Minimum		Maximum	Minimum	
1	2	3	4	5	6	7	8	9	10	11	12	13	14
ALABAMA													
Birmingham				$500–1,200									$910–1,000
CALIFORNIA													
Long Beach	$4,050			[3] 1.85–2.50	$3,000			$1,750		[3] $1.25	$2,100	$2,000	[3] 1.50
Los Angeles	6,000	[4] $304		[4] 304	[4] 304		[4] $304				[4] 210	[4] 150	
Oakland	4,200			[3] 2.00–3.00				1,740			2,480	1,380	
San Diego		5,000		3,200			3,000	1,800	$1,400		2,900	1,400	
San Francisco	4,600	3,000		1,800			1,200	1,800	1,620		2,100	1,980	
COLORADO													
Denver	5,000		$3,500										
CONNECTICUT													
Hartford	5,600			[3] 3.00–4.00			[3] 3.00–4.00	1,800	1,000		3,100	1,400	
DELAWARE													
Wilmington				[3] 3.35			[3] 3.35	1,600	1,400		1,600	1,080	
FLORIDA													
Jacksonville	3,765				2,700						1,940	1,764	
Tampa				1,487									1,062
GEORGIA													
Atlanta	5,000			[4] 100	[4] 250			[4] 112			[4] 125	[4] 100	[4] 135
ILLINOIS													
Peoria	4,500			[3] 2.00	4,100	$2,500	1,250	1,200	1,000	600	2,400	1,200	
INDIANA													
Fort Wayne				[3] 5.00							1,500		

See footnotes at end of table.

TABLE 2.—*Salaries (cities of 100,000 population and more)*—Continued

City	Supervisor of health service [1]	Physicians			Dentists			Dental hygienists			Nurses		
		Full-time		Part-time salaries [2]	Full-time		Part-time salaries [2]	Full-time		Part-time salaries [2]	Full-time		Part-time salaries [2]
		Maximum	Minimum		Maximum	Minimum		Maximum	Minimum		Maximum	Minimum	
1	2	3	4	5	6	7	8	9	10	11	12	13	14
INDIANA—Continued													
Gary		$3,945	$3,000		$3,360	$2,400		$1,800	$1,200		$2,400	$1,200	
Indianapolis				$850			$422	780			1,260		
South Bend											2,075	1,125	
IOWA													
Des Moines	$2,200			600–1,000			500	1,350	1,300		1,920	1,400	
KANSAS													
Kansas City							[4] 100				1,800	1,400	
Wichita	2,700						600						
KENTUCKY													
Louisville		1,682		[3] 2.35			[3] 2.35				1,320	1,170	
MARYLAND													
Baltimore	5,500	3,600	3,500	1,000–1,200			600				1,800	1,000	
MASSACHUSETTS													
Boston	7,000			[3] 2.50							1,920	1,200	
Fall River	4,800			800							1,296		
Somerville				200			1,200			$600	1,500		
Springfield				[4] 70			[4] 100	1,700	1,508				
Worcester	5,000			1,200–1,500			1,200	1,700	1,200		1,900	1,200	
MICHIGAN													
Detroit	5,000			[3] 2.00	3,300						2,040	1,560	
Grand Rapids	7,000	2,000		[4] 150	[4] 150						1,595	1,400	
MINNESOTA													
Minneapolis	3,600	2,400		[3] 2.25–2.50			[3] 3.00	1,600	1,100		2,000	1,200	
St. Paul	4,189			[3] 2.05				1,448	1,147		1,448	1,147	

Missouri													
Kansas City	3,400			[3] 2.50	4,000	1,000	[4] 50–70	700			1,600	1,200	
St. Louis	6,000	2,775	1,900	[4] 125							1,825	1,100	
Nebraska													
Omaha		2,100		880	2,000						1,275		[5] 3.75
New Jersey													
Camden	2,500			800			750				1,600	1,200	
Jersey City	5,000										2,000		
Newark	8,500			1,200–1,800	5,000	3,000	1,200–1,800				2,100	1,500	
Paterson	1,000			500			1,000				1,800	1,200	
New York													
Albany	7,500			1,500			[6] 10	1,900	1,100		2,200	1,100	
New York				1,340–2,400	4,500		1,220–2,280	1,740	1,260		2,400	1,500	
Syracuse	5,000	1,950		[3] 4.00			[3] 2.75	1,700	1,200		2,300	1,200	
Utica	3,500			[3] 2.50			[3] 2.00	1,850	1,400		1,700	1,500	
Yonkers	5,100			1,350				2,400	2,100		2,800	1,600	
Ohio													
Canton				1,800			1,187				1,425	1,349	
Cleveland		2,304		1,152–1,728	3,168			1,728	864		2,304	1,152	
Dayton				1,125			900–1,125				1,305	1,215	
Youngstown	3,626			1,666	3,125	1,350					2,000	1,150	
Oklahoma													
Oklahoma City	2,500			1,000	2,500						1,500		
Oregon													
Portland				[4] 100			[3] 1.50	[7] 130	[7] 85		[4] 142	[4] 125	
Pennsylvania													
Erie	4,580			[3] 2.10–3.20			[3] 2.08				1,800		
Philadelphia	6,500	3,320	2,070	[3] 1.70–2.50							1,700	1,000	
Pittsburgh	7,000	2,420	2,050				[3] 2.50				1,640		
Reading	1,500			1,000			1,000	1,800	1,000		1,800	1,000	
Scranton	3,000			1,500			1,500	1,000			1,000		
Rhode Island													
Providence	5,040			[3] 3.60			[3] 1.67				1,530	1,125	

See footnotes at end of table.

TABLE 2—*Salaries (cities of 100,000 population and more)*—Continued

City	Supervisor of health service [1]	Physicians			Dentists			Dental hygienists			Nurses		
		Full-time		Part-time salaries [2]	Full-time		Part-time salaries [2]	Full-time		Part-time salaries [2]	Full-time		Part-time salaries [2]
		Maximum	Minimum		Maximum	Minimum		Maximum	Minimum		Maximum	Minimum	
1	2	3	4	5	6	7	8	9	10	11	12	13	14
TENNESSEE													
Knoxville				$1,140-1,537			$650–1,800				$1,625	$1,393	
Memphis			$2,400	[4] 150	$3,120	$2,700					2,200	780	
Nashville		$4,800	2,700								[4] 165	[4] 100	
TEXAS													
Dallas	$4,000		2,500		1,350						1,350	1,125	
Fort Worth	4,500			1,000			[4] 100				1,260	1,000	
Houston	4,265			[4] 50–75				1,400			1,900	850	
UTAH													
Salt Lake City	4,260												
VIRGINIA													
Richmond	5,500			[4] 125			[5] 6.00–8.00				1,550	1,100	
WASHINGTON													
Seattle	4,250	4,250	2,200	[3] 2.50							1,680	1,200	
Spokane		3,400			3,400			1,740			1,990		
Tacoma		4,000					[6] 4.50				1,960	1,500	
WISCONSIN													
Milwaukee		4,500	4,000	[3] 2.50	2,340	2,220	[3] 1.25			[3] 1.25	1,860	1,740	

[1] Includes salaries of both full- and part-time supervisors.
[2] See footnotes for salaries other than annual.
[3] Per hour.
[4] Per month.
[5] Per day.
[6] Per half day.
[7] Dental assistants.

TABLE 3.—*Health examinations (cities of 100,000 or more population)*

City	Grades examined periodically	Minutes given to examination	Examination made by—	Assist in examination	Dental examination by—	Examination for tuberculosis	Facilities for refraction	Daily observation by teacher
1	2	3	4	5	6	7	8	9
ALABAMA								
Birmingham	1, 5, 8	2–3	Physician	Teacher	Physician	O	O	X
CALIFORNIA								
Long Beach	7, 10	10–12	do	Nurse or physical education teacher.	Dentist	X	O	X
Los Angeles	1, 4, 7, 9, 10	20	do	Nurse	do	X	X	X
Oakland	1, 7, 10	10	do	do	Physician, nurse, hygienist, teacher.	X	X	X
San Diego	1, 7, 9	5–28	do	do	Dental hygienist	X	X	X
San Francisco	1, 3, 5, 8	10	do	do	Physician, dental hygienist	X	O	X
COLORADO								
Denver	1, 3, 5, 7	10	do	do	Dentist	X	O	X
CONNECTICUT								
Hartford	All	6	do	do	do	O	O	X
DELAWARE								
Wilmington	do	5–8	do	do	Physician, dental hygienist	—	—	X
FLORIDA								
Jacksonville	1–6	3	do	do	Dentist	O	O	X
Tampa	1–9	Varies	do	do	do	X	—	X
GEORGIA								
Atlanta	All	5–10	do	Nurse and teacher	do	O	O	X
ILLINOIS								
Peoria	None routinely	30	do		do	—	—	X
INDIANA								
Fort Wayne	All		do	Nurse and teacher	do	X	X	X
Gary	1, 4, 8		do	Nurse	do	—	—	X

See footnotes at end of table.

TABLE 3.—*Health examinations (cities of 100,000 or more population)*—Continued

City	Grades examined periodically	Minutes given to examination	Examination made by—	Assist in examination	Dental examination by—	Examination for tuberculosis	Facilities for refraction	Daily observation by teacher
1	2	3	4	5	6	7	8	9
Indianapolis	1, 4, 8	6–7	do	do	Physician and nurse	X	O	X
South Bend		15	Nurse		Nurse	X	O	X
IOWA								
Des Moines	Kgn., 3, 6, 9, 12	5–15	Physician	Nurse and teacher	Dental hygienist	X	O	X
KANSAS								
Kansas City	All		Nurse		Dentist	X	O	X
Wichita	1, 4, 7, 10	5	Physician	Nurse and teacher	do	X	X	X
KENTUCKY								
Louisville	Kgn., 1, 4, 7, 10	6	do	Nurse	Physician and dentist	X	O	X
MARYLAND								
Baltimore	Kgn., 3, 6, 7, 8, 9, 10, 11, 12	6–10	do	do	Physician	X	O	X
MASSACHUSETTS								
Boston	All	12½	do	do	Physician and nurse	X	O	X
Fall River	1, 3, 5, 7	3–4	do	do	Physician	X	O	X
New Bedford	All	Varies	do	Nurse and teacher	Physician, nurse, teacher	X	X	X
Somerville	1–9	10	do	do	Dentist	X	O	X
Springfield	All	3	do	do	Physician, dentist, and dental hygienist.	X	O	X
Worcester	do	1–5	do	Nurse	Physician	X	O	O
MICHIGAN								
Detroit	Entrance 6, 9	12	do	Older pupils	Physician, dentist, teacher	X	O	X
Grand Rapids	Kgn. and 1	15	do	Nurse	Nurse	X	O	X
MINNESOTA								
Duluth	Kgn., 6		do	do	Dentist, dental hygienist	X	O	X
Minneapolis	Kgn., 2, 4, 6, 8	5–10	do	do	do	O	X	X
St. Paul		5	do	do	do	X	O	X
MISSOURI								
Kansas City	Entrance, Kgn., 1, 4, 7, 10	1	do	Nurse and physical education teacher.	Dentist	X	O	X
St. Louis	Entrance and every 3 years	7	do		Physician	O	X	X

NEBRASKA								
Omaha			Nurse		Nurse	—	O	X
NEW JERSEY								
Camden	All	7–8	Physician	Nurse	Physician	X	O	X
Jersey City	do	3–5	do	do	Dentist	X	X	X
Newark	Kgn., 1, 3, 4, 7, 8, 10	8	do	do	Physician, dentist, nurse	X	X	X
Paterson	All	Varies	do	do	Dentist	—	[1]X	X
NEW YORK								
Albany	do	5	Physician	Nurse and teacher	Dental hygienist	X	O	X
New York	Entrance	15	do	do	Dentist, dental hygienist	—	—	X
Syracuse	Kgn., 1, 2, 3, 5, 7, 10	5	do	Nurse	Physician, dental hygienist	X	X	X
Utica	All	10	do	do	do	X	X	O
Yonkers	do	Varies	do	Nurse and teacher	Physician, dental hygienist, nurse.	X	O	X
OHIO								
Canton	1	15	do	Nurse	Dentist	X	O	X
Cleveland	Kgn. 6, 9, 10, 11, 12	5	do	do	do	X	X	X
Dayton	1, 3, 6	Varies	do	do	Physician, nurse	X	O	X
Youngstown	1–6	15	Nurse		Dentist, nurse	X	—	X
OKLAHOMA								
Oklahoma City	1–9	2–5	Physician	Teacher	Physician, dentist, nurse	X	—	X
OREGON								
Portland	Kgn., 1, 3, 6, 11	6	do	Nurse	Dental hygienist	X	—	X
PENNSYLVANIA								
Erie	All	5	do	do	Physician	X	O	X
Philadelphia	do	7	do		do	O	X	X
Pittsburgh	1, 3, 5, 7, 9, 11	10	Physician		Physician, dentist	X	X	O
Reading	Kgn.–12	10–15	do	Nurse	Physician, dental hygienist	X	X	X
Scranton	All	3	do	do	Dentist	O	O	X
RHODE ISLAND								
Providence	[1] 4, 7, 10	8–10	do	do	Physician, dentist	X	X	X
TENNESSEE								
Knoxville			do	do	Dentist	—	—	X
Memphis	1, 3, 5	5	do	do	do	X	O	O
Nashville	1, 4, 8, 11	6–8	do	do	Physician	X	O	X

See footnotes at end of table.

TABLE 3.—*Health examinations (cities of 100,000 or more population)*—Continued

City	Grades examined periodically	Minutes given to examination	Examination made by—	Assist in examination	Dental examination by—	Examination for tuberculosis	Facilities for refraction	Daily observation by teacher
1	2	3	4	5	6	7	8	9
TEXAS								
Dallas	Entrance 1, 6, 7, 8	5–7	do	do	Dental hygienist	O	O	X
El Paso			Nurse		Dentist	X	O	O
Fort Worth	Kgn., 1, 3, 5	Varies	Physician	Nurse	do	X	O	X
Houston	All	3	do	do	Physician, dental hygienist	X	O	X
UTAH								
Salt Lake City	Kgn., 3, 6, 10	Varies	do	Nurse, teacher	Physician	O	O	X
VIRGINIA								
Norfolk	1, 4, 7	5–10	do	do	Physician	X	O	O
Richmond	All	10	do	do	Physician, dentist, nurse	X	O	X
WASHINGTON								
Seattle	All	5–10	Nurse		Nurse	X	O	X
Spokane	Not made				Dentist, dental hygienist	O	—	—
Tacoma	1, 7, 10	4	Physician	Nurse and teacher	Nurse	X	O	X
WISCONSIN								
Milwaukee	Kgn., 1, 2, 4, 7, 11	10	do	Nurse	Dental hygienist	X	X	X

X=Yes. O=No. —=Not answered.

Suites for the Health Service

The accompanying floor plans of special suites for examination and other purposes were kindly contributed by the directors of health services in Mount Vernon, N. Y., Santa Barbara, Calif., Olean, N. Y., and Philadelphia, Pa.

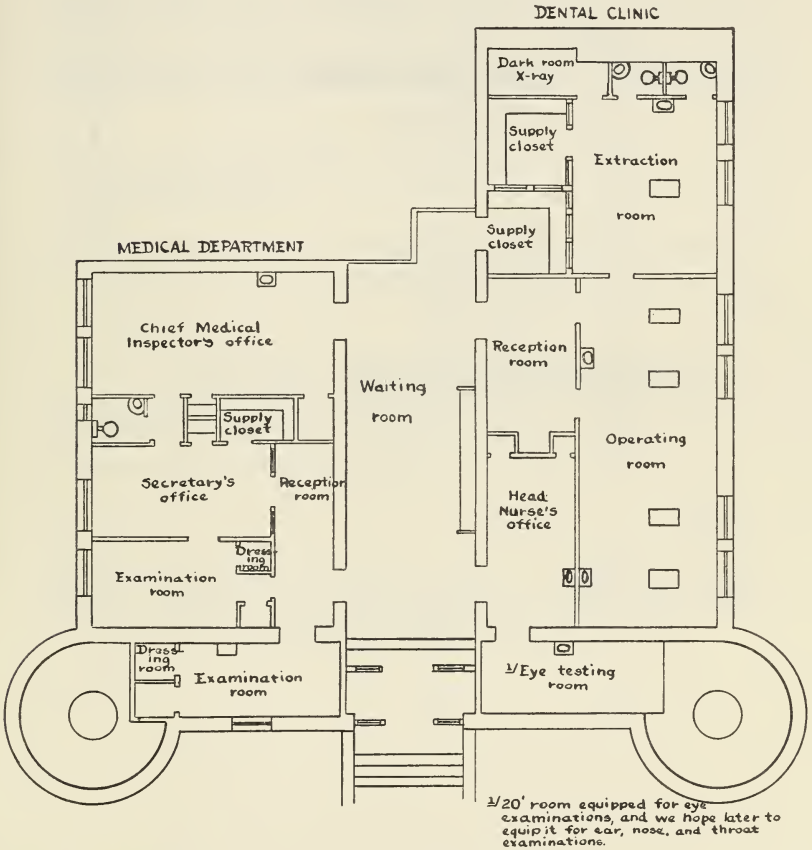


FIGURE I.—Medical and dental clinic, Mount Vernon Public Schools, Mount Vernon, N. Y.

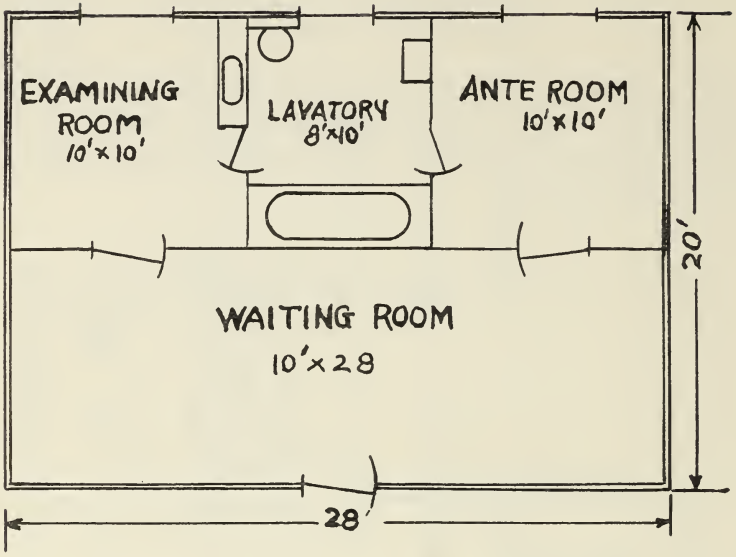
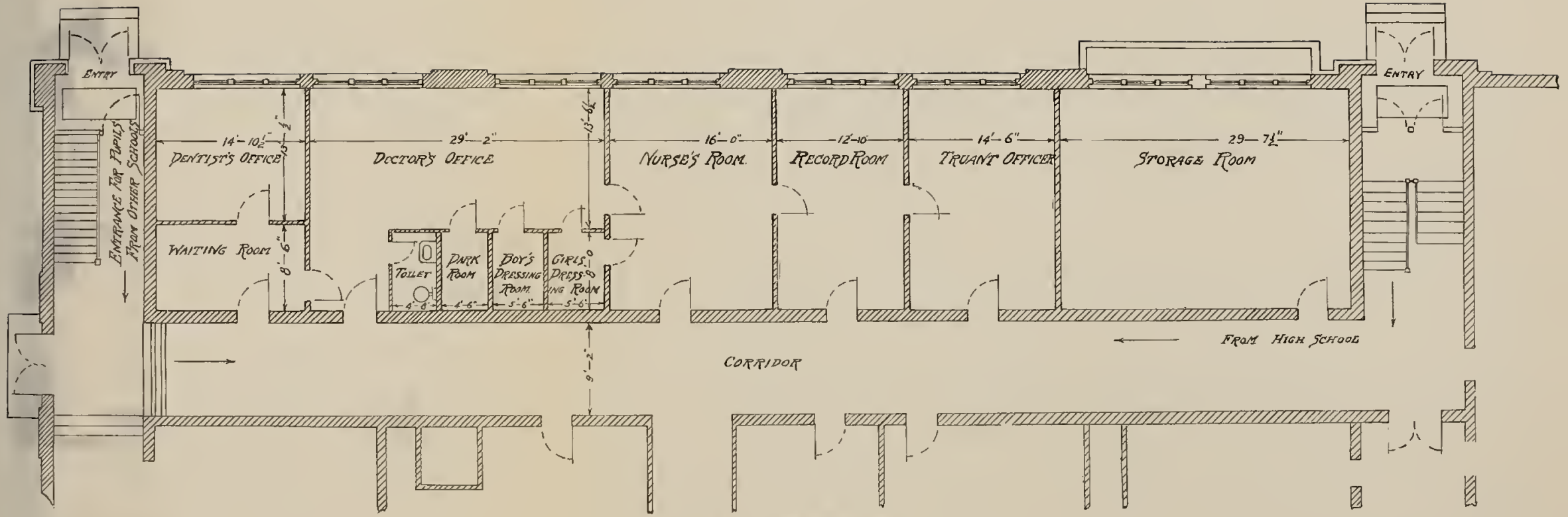
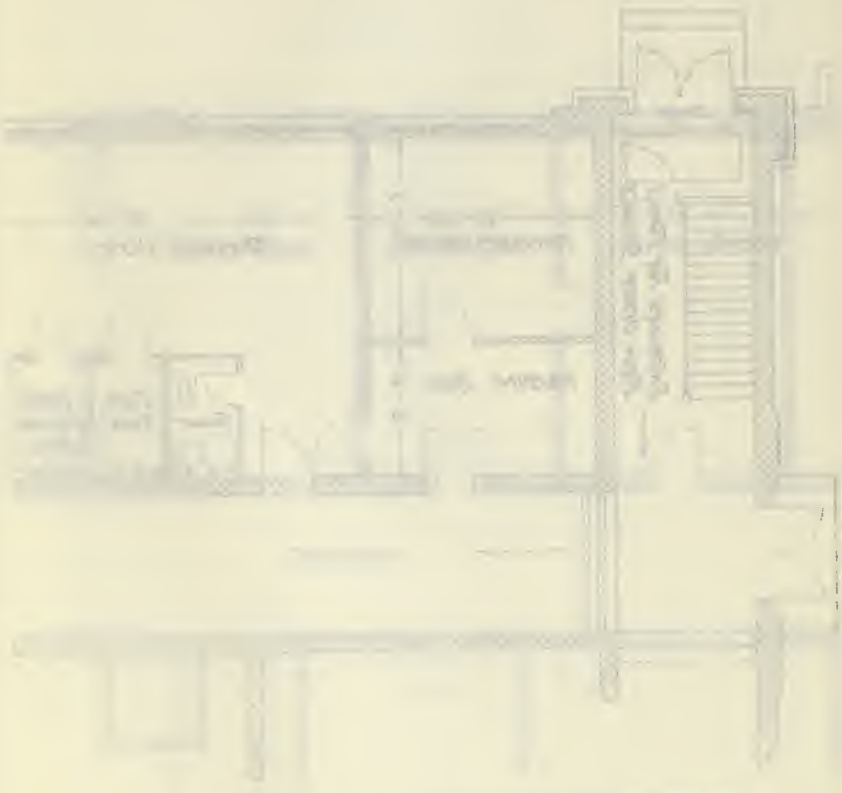


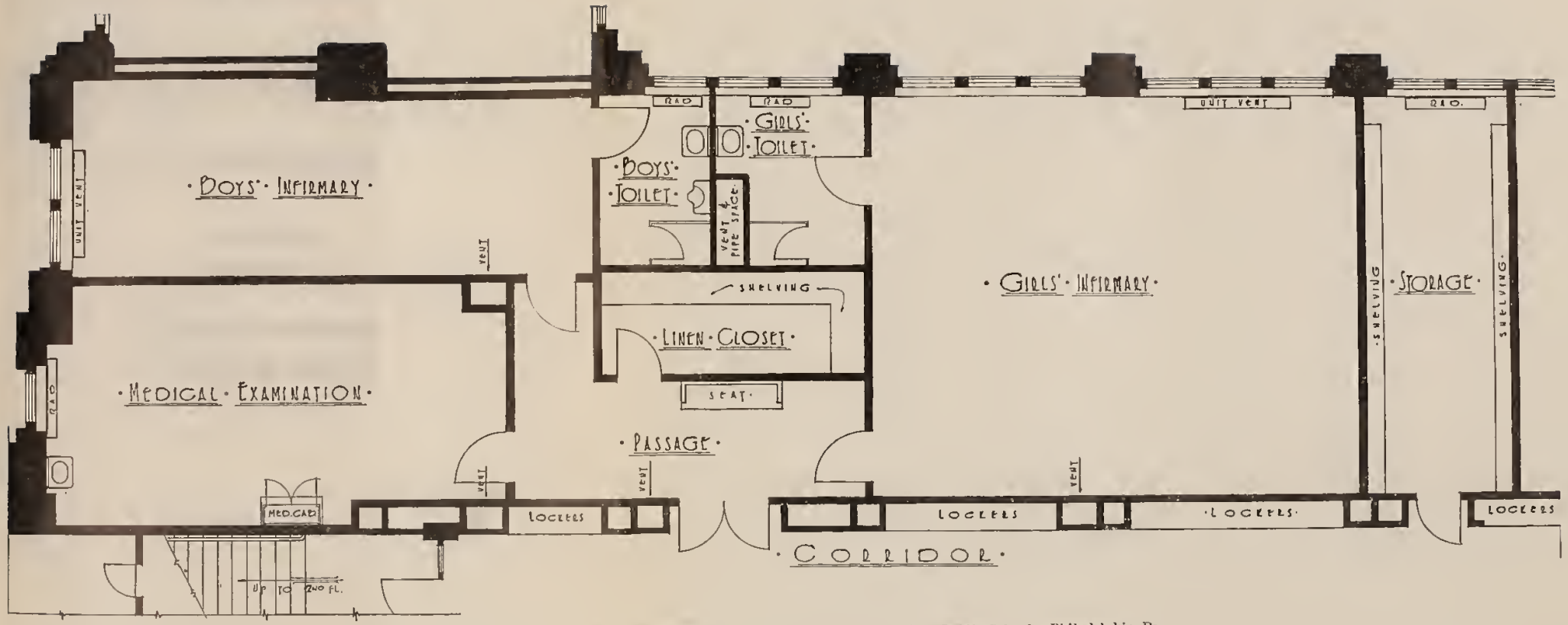
FIGURE II.—Examination Suite, Santa Barbara Public Schools, Santa Barbara, Calif.



466444°—42 (Face p. 50) No. 1

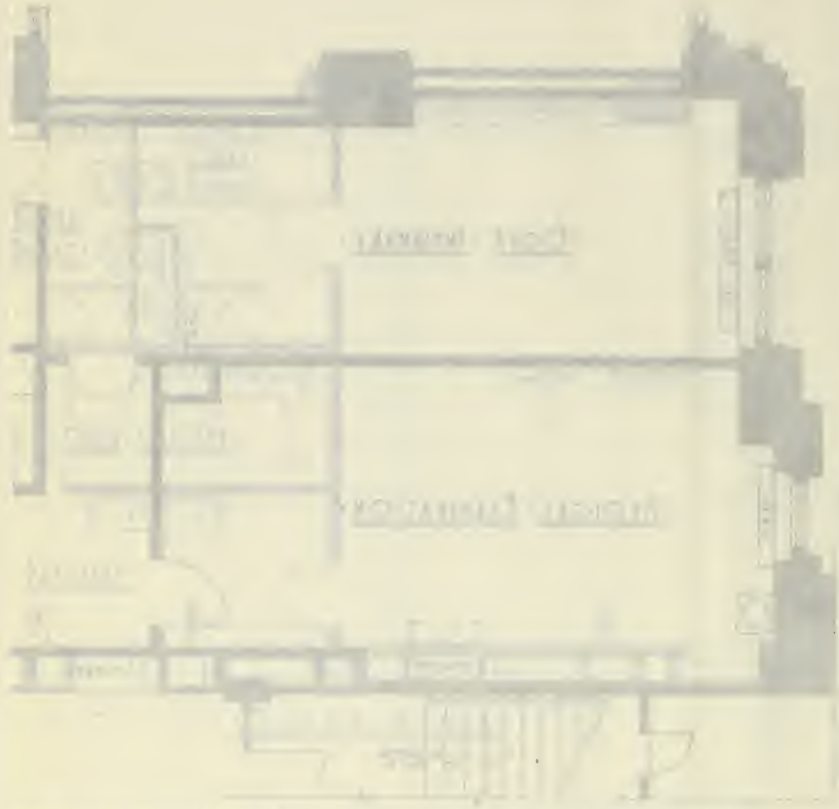
FIGURE III.—Medical Department Offices, Public Schools, Olean, N. Y.





466444°—42 (Face p. 50) No. 2

FIGURE IV.—Medical Examination Rooms and Infirmary for Boys and Girls, Public Schools, Philadelphia, Pa.



BIENNIAL SURVEY OF EDUCATION IN THE UNITED STATES

1938–40

SCHOOL HYGIENE AND PHYSICAL EDUCATION

VOLUME I

CHAPTER VI

FEDERAL SECURITY AGENCY

U. S. OFFICE OF EDUCATION

BIENNIAL SURVEY OF EDUCATION
IN THE UNITED STATES
1938–40

SCHOOL HYGIENE AND PHYSICAL EDUCATION

VOLUME I
CHAPTER VI

By
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Consultant in Hygiene, U. S. Office of Education

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U. S. OFFICE OF EDUCATION, John W. Studebaker, Commissioner

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SCHOOL HYGIENE AND PHYSICAL EDUCATION

1. Fundamentals in School Hygiene

Definitions.—A period of 9 years has elapsed since a review was made by the U. S. Office of Education of developments in the field of school health work. Progress in this realm is dependent on public interest, on educational experiments, and on the contribution of workers in the fields of science bearing on our knowledge of school hygiene. That knowledge is varied and extensive, for the maintenance and improvement of child health is not a simple matter but is dependent on various conditions, physical and mental, within and without the walls of the school.

Progress has not been promoted by the confusion of terms which has arisen in the present century, a confusion which may not have affected the circle of professional workers but has certainly muddled the minds of those engaged in the general field of education and the laity, as to just what school health work is all about. The use of the words "physical education" as covering the whole realm of school hygiene (as was once quite proper) or as confined to the teaching and conduct of physical activities; and the application of the words "health education" to the entire program or as limited to instruction in hygiene, are practices especially provocative of misunderstanding. There is some prospect that the linguistic atmosphere is beginning to clear and the earlier this occurs the better it will be for all concerned. In these pages "health education" is used in its more restricted sense as is also "physical education"; the phrase "health service" includes the medical, dental, and nursing care of school children, while "sanitation" is that phase of hygiene concerned with the production and preservation of healthful conditions in the school plant. The meaning of other terms used will hardly be mistaken.

Nutrition.—In no other field has so much work been recently accomplished as in the fundamental one of nutrition. Growth, development, physical and mental activity, emotional strength and stability all depend upon it, and it influences other phases of school hygiene. We refer to physical nutrition; the less material nutrition especially affecting the mental health of the child is, of course, as important. The direct application by the school of this science comes late in the life of the child, but through the planning and management of the school lunch and through health instruction, the

school is responsible for bringing to pass the later use of such knowledge and its practical employment in the rearing of the next generation.

A quick and ready test for good nutrition is still an alluring will-o'-the-wisp. There is "something to" each of the many means which have been tried but they are all wanting as generally applicable guides and for the very good reason, which is becoming more and more evident, that children differ so generally and often so widely. In the matter of growth, which is related to nutrition, and to which nutrition is essential, it is pointed out by Dunstan that "individual variations are legion." [1] Moreover, some children thrive on a diet which seems, to our present knowledge, faulty, while others do badly with what we consider adequate feeding.

Cathcart and Hutchinson [2] remark that "Height and weight assure growth but are of little value for assessment of that intangible condition called nutrition."

Among the tests for malnutrition recently tried are: The haemoglobin index, which is certainly most important in itself; persistence of effort by the use of a dynamometer; equilibrium and coordination when standing at attention; and cold hands. These are all worth experimenting with.

Except for the fact that some children do not do well on a diet recommended by our present-day nutritionists, supplementary feeding would seem to be the most certain test and, at the same time, a means of correction of malnutrition, for "if a child's nutritional condition is capable of being improved, it follows logically that its nutrition is defective." Working on this principle, Wilkins and Rollason [3] in England have been experimenting with a group of children with controls. During 5 months of supplemental feeding the special group showed better school attendance; there was an increase in haemoglobin by most of them; there was more gain in weight and there was report of better sleep, better posture, better appetite, more energy, less fidgetiness, less timidity, less listlessness, better attention, better memory, better motor control, and more zest in play. Since no conditions other than food were changed, the idea that malnutrition is due to other conditions would seem to lose weight. Nevertheless, while food is fundamental, "food to be really effective must be ingested by a subject physically and mentally sound." After all is said, "Our ignorance on every phase of the subject is simply abysmal." [2] Our

[1] Dunstan, W. C. Correlation in growth. Medical Officer, 1457: 257–58, June 27, 1936.

[2] Cathcart, E. P., *and* Hutchinson, Robert. Nutrition and public health. Public Health, 48: 8–286 May 1935.

[3] Wilkins, E. H., *and* Rollason, A. H. Supplementary feeding as a test of malnutrition. Medical Officer 115–118, Sept. 11. 1937.

ignorance is abysmal but what we do know is not put into practice. The same writers state, that "it is possible to live and thrive on the simplest means; whole-meal bread and milk, possibly a portion of cheese and some fresh fruit and vegetables." But how often this "simplest means" is not applied. As Sherman [4] put it:

> It is well that in times like these our otherwise unemployed resources be put to work in building good houses, good roads, and good bridges—why not good bodies, too? (Human bodies, not "built by Fisher," and of which we cannot buy a new one next year!)
>
> With millions of motors on our roads, how rare is the accident which is due to faulty construction of the car! Can we believe that our country is yet building its children as well as its cars? It is of one of the most prosperous of present-day industrial cities that Priestley in his *English Journey* writes: "I have no doubt that boys and girls in Coventry are comparatively well looked after, but nobody has attended to them as their fathers are attending to the proud young Double-Six Daimlers."
>
> The collapse of a bridge is so rare that it makes Nation-wide news; the premature collapse of a human body is, unfortunately, not yet correspondingly rare.
>
> But even those young growing bodies which are in no immediate danger of collapse may still be far from developing as they could if better fed. As soon as science can teach economics "to know the value, not merely the price," it will be possible to break the evil spell of "poverty in the midst of plenty." And why not now? With our country producing so much food that its ("profitable!") disposal is a problem, may we not make it a near objective that each child be well enough fed to permit the full development of its innate potentialities, and give it a really fair start.

Unfortunately, as the editor of the *Medical Officer* [5] says,

> We cannot make a sensational story out of malnutrition as it occurs today—it produces a slow, silent rot of virility, vitality, and fiber from which recovery soon becomes impossible. It takes a lot of ill feeding to kill a child directly, but it takes very little to sap his value seriously.

Nutrition and defects.—Our most common physical defects are carious teeth and it is evident that these are due to our ignorance of nutrition and our failure to put into practice the little we know. But many of our other physical defects are due in whole or in part to faulty nutrition early in life. If the complicated and extremely delicate machine called a human body is constructed of faulty materials, how can it be other than defective? A striking example of what happens when the knowledge we have is not applied is presented in the following figures from McGonigle and McKinley,[6] who studied young chil-

[4] Sherman, H. C. Food as a far-reaching factor in health. Child Health Bulletin, 11: 1–4, January 1935.
[5] Medical officer, 49: 162, Apr. 29, 1933.
[6] McGonigle, G. M. C., *and* McKinley, P. L. An investigation in the effects of certain factors upon child health. Journal of Hygiene, 32: 465–88, October 1932.

dren fed on what was considered a "satisfactory" or an "unsatisfactory" diet:

	Percent satisfactory	*Percent unsatisfactory*
Bone defects	31. 18	55. 01
Pharyngeal conditions	10. 22	23. 85
Dental decay	17. 45	36. 59
Squint	1. 34	6. 23
Anaemia	21. 51	40. 92
Otorrhea	9. 14	13. 82

If maximal growth is indicative of good nutrition and, with exceptions, it would seem to be, then children who are especially defective should, on the average, be less tall and less heavy than their fellows and studies of the U. S. Public Health Service presented by Gafafer [7] indicate such a relationship.

Some figures from abroad show at least some relationship between the height-weight index and defectiveness which, in turn, indicates that the Baldwin-Wood tables are in some degree indicative of malnutrition. Freeman [8] classified his defective children by these tables as (*a*) 10 percent underweight, (*b*) 5 percent under to 5 percent above, and (*c*) 10 percent or more overweight. The results were as follows:

Percent defective

	(*a*)	(*b*)	(*c*)
Girls 8 years old	47.0	44.6	30.7
Boys 8 years old	55.0	43.0	27.0
Boys 12 years old	41.0	39.0	16.2

Notwithstanding our present physical imperfection we are much better off than our ancestors of a century and more ago when variety of available foods was much more limited and there is evidence that the draftees for the Napoleonic and other earlier wars were a much more sleazy lot than those who were examined for the World War.

The change which has been going on in the physique of school children the world over, due chiefly to better nutrition and other conditions of living, was reviewed in a publication of this Office entitled, "The Physique of the School Child," Leaflet No. 37, issued in 1936.

As recorded in that publication, there has been a decided increase in height and weight of children of school age and of college students over a period of 50 years. The relative increase at later ages is even greater for some years than in the beginning year of school life and

[7] Gafafer, W. M. Relation of physical defects to physical growth of children in 21 States. Public Health Reports, 51: 831–41, 1936.

[8] Freeman, V. Weights, heights, and physical defects in school children. Medical Officer, 1360: 65–66; 75–78, August 1934.

this would indicate that school attendance has no permanent effect upon growth or has even a benign influence in this direction. However, now, as a half a century ago, the pupils of private schools are relatively larger than are those of public schools which points to the influence of relatively better home conditions in early life.

Nutrition and disease.—From 1868 to 1890 the death rates of children of school age (in Massachusetts) remained at about 8 per thousand between 5 and 9 years; about 3.8 between 10 and 14 years; and around 6 between 15 and 19. Since then there has been a steady decline of mortality to about 1.7 for the first group; 1.4 for the second; and 1.8 for the third. The school health service introduced in this century must have contributed to this lengthening of life as have also other phases of school health activity. Nevertheless schoolroom conditions are not always what they should be and the imposition of unsuitable or impossible tasks brings about a "school sickness" which is anything but conducive to either physical or mental welfare.

One of the hopeful happenings of the past few years has been the decline in both incidence of sickness from communicable disease and of fatality from such illness. Incidentally, there has been less damage to bodily organs from these sources of injury and untimely death. While due in part to better living conditions and better child care, improved nutrition is undoubtedly an important factor in the increased resistance to infection.

Nutrition and sleep.—It might be expected that good nutrition and hours of sleep would be closely related and we have made much of rest periods in our special nutrition classes. However, a study of the hours of sleep of 1,600 school children made by Anderson showed no such relationship.[9]

II. Health Conditions in the Schools

Ventilation.—Studies in ventilation have of late centered about the matters of temperature and humidity. Along this line we have a study to determine the "comfort zone" for 25 healthy children, 7 to 14 years of age, in a Canadian school.[10] In the winter months, with an average outdoor temperature of 34° and a relative humidity between 20 and 45, the majority of the children were comfortable between 57° and 73°, the largest number being satisfied at 66.5°. During the warm months the comfort zone for the majority rose to 66° to 75° with, for a maximum number, 70.5°. The range for boys was wider than for girls, and that for adults was less than that stated above. The significant thing about these data is that there is this wide range

[9] Anderson, A. Hours of sleep of 1,600 school children. Medical Officer, 1446, 147-149, Apr. 11, 1936.

[10] Partridge, Ruth C., *and* MacLean, D. R. Determination of comfort zone for school children. Journal of Industrial Hygiene, 17: 66-71, March 1935.

of individual variation, and there were not a few individuals beyond the extremes mentioned. All cannot be quite comfortable at one temperature and, in a schoolroom, adjustments can only be made by remoteness or proximity with reference to the source of heat or by variations in amount of clothing. This was more readily possible in the school heated by a central stove of blessed memory. No matter what the source of heat, there should be some means by which children who reach school chilled or with wet clothing can find warmth and a means of drying wet shoes and other garments. In not a few schools pupils keep a pair of stockings in their desk for change under such conditions.

Ventilation has lately resumed an old and somewhat abandoned phase—that of need for cleanliness of the air supplied. From studies by Winslow and Herrington [11] it is evident that odors have an effect upon health and comfort. Malodorous material has long been connected with poor ventilation and there is now experimental evidence to back common experience. Cleanliness of rooms and occupants helps reduce offensive odors, but in addition there is need for constant and adequate change of air or cleansing of air.

But besides odorous substances in the air, the possibility of bacterial transmission by dust, which has been given scant consideration, takes on significance from recent investigations which have shown the presence of pathological organisms. How the filterable viruses fare outside the body we do not as yet know. For two good reasons, then, there is need for more than a mere comfortable temperature of the air of schoolrooms and, besides a thermometer, an instrument for determining the relative purity or "freshness" of the air, such as the nearly abandoned tests for carbon dioxide content, is needed.[12]

Illumination.—Agitation for adequate and salutary illumination of schoolrooms has been going on for a hundred years but in the twentieth century all too many children sit, and do their work, in comparative darkness. The obsession for light from the left of the pupil which has had not a little to do with poor illumination has about run its course, for artificial lighting from above is accepted without remonstrance. In an effort to prove by "research" what common sense has always taught, a number of investigations have recently been conducted with reference to school work under differing conditions of lighting. While the techniques employed in these experiments have not been all that could be desired, the results are what one would expect. In the study by Long,[13] two groups of children were exposed to illuminations of about 5 footcandles and 12 footcandles. At the

[11] Winslow, C.-E. A. *and* Herrington, L. P. The influence of odor upon appetite. American Journal of Hygiene, 22: 143, January 1936.

[12] Owens, J. S. Ventilation and the need of new standards. Journal Royal Sanitation Institute, 53: 623–35, May 1933.

[13] Long, C. M. Lighting and pupil achievement. Master's thesis. University of Pittsburgh. 1934.

end of the experiment 23.7 percent "failures" were reported for those in the less lighted room as compared with 8.8 percent in that which was better lighted.

Similar results were reported by Albert [14] and by Allphen.[15]

Attacking the subject from another standpoint, the older pupils in grades 5, 6, 7, and 8 in certain Chicago classrooms were permitted to control the lighting of their own rooms. In some rooms the lighting was indirect and in others, direct. With the diffused lighting the median value chosen was 19 footcandles and where the light was undiffused it was 44 footcandles. [16]

Carpenter [17] found that the scholarship (based upon teachers' marks and estimates) of pupils in rooms with unilateral lighting was about 3.9 percent higher for those located in the half of the room next the windows. "In the rooms with artificial lighting the scholarship was higher in the half of the room farther from the windows." The amount of illumination, either natural or artificial, is not reported.

Tinker [18] investigated the effects of illumination on speed and fatigue in reading. His subjects were college sophomores. The intensities of light employed were 0.1, 0.7, 3.1, 10.3, 17.4, and 53.3 footcandles. With 2 minutes for adaptation to changes the rate of reading 10-point type was significantly retarded with intensities below 10.3 and, with 15 minutes for adaptation, there was further retardation with illuminations under 3.1 footcandles.

He concludes that the "critical level of illumination [for adults] for reading 10-point type [the type used for this page] is approximately 3 footcandles" but "since a margin of safety is desirable, it is suggested that 10 to 15 footcandles be employed when reading this sized type or slightly larger type."

The standards for school lighting approved by the American Standards Association, the American Institute of Architects, and by the Illuminating Engineering Society, in 1932, were as follows:

	Footcandles
Sewing rooms, drafting rooms, art rooms, and rooms where fine detail work is to be done—on the work	15–10
Classrooms—on desks and blackboards; study halls and libraries; on desks and tables; shops, manual arts, and vocational training laboratories—on the work; gymnasia, playrooms, and swimming pools	12–8
Auditoriums, cafeterias, and other rooms not used for study	5–3
Recreation areas, locker rooms, corridors, stairs, passageways, toilets	4–2

[14] Albert, F. C. Scholarship improved by light. Transactions of the Illuminating Engineering Society, 28: 866-871, 1933.

[15] Allphen, Willard. Influence of school lighting on scholarship. Magazine of Light, January 1937.

[16] Fleischer, J., *and* Hoffman, A. J. A new approach to school lighting. Transactions of the Illuminating Engineering Society, 31: 389-402, 1936.

[17] Carpenter, W. W. Relation of light to scholarship. School and Community. 25: 164, April 1940.

[18] Tinker, M. A. The effect of illumination intensities upon speed of perception and upon fatigue in reading. Journal of Educational Psychology, 30. 561-571, November 1939.

Certainly the left-hand figures in these recommendations are preferable.

There are a great many poorly lighted classrooms throughout the country and while natural light is greatly to be preferred, deficiency below 10 footcandles should be made up by artificial light from indirect sources.

All too frequently we need only the application of soap and water to windows or lamps, or a coat of paint of an appropriate kind to walls or ceilings, to vastly improve the working conditions of the classroom. In a school of Pontiac, Mich., 40 percent better illumination was recorded after the cleaning of the electric lamps and 60 percent after such cleaning and the painting of the ceilings.[19]

Here is ample evidence of the waste of public funds in ineffective lighting, and the consequent ineffective school work which this entails, and from inefficient janitor service.

Sanitation and physical activities.—So much has been said with reference to healthful conditions in schools that one takes it for granted that the knowledge expressed is put into practice. The incidence of ringworm of the feet among high-school and college students is sufficient to disillusion one regarding the care of gymnasiums and pools. An investigation by Jackson [20] of the current practices in the management of high-school athletics (or of high-school athletes) reveals all too plainly that in many quarters we are still a bit primitive and far from emulating the Greeks, whom we pretend to worship, in their cult of cleanliness.

According to this study, the practices of sharing a common towel or sponge, of mouthing the same water bottle, of exchanging soiled clothing, and even of spitting on the playing floor, are countenanced by a considerable proportion of principals and coaches.

As might be expected, this investigator found a correlation between epidemics of colds and of skin diseases and such insanitary practices.

> The study indicates that in spite of the increased attention to public health and the many developments in medical and sanitary knowledge, the average high school does not take the necessary precautions to maintain safe and healthful surroundings for its students, particularly in gymnasiums, showers, and locker rooms. Likewise, in the conduct of sports, practices which have been condemned for years as dangerous and lacking in social approval are still permitted to continue.

Not only with reference to cleanliness are many schools remiss; they overlook first principles in the management of athletics otherwise, and they fail to make use of opportunities for instruction in hygiene. Many schools pay no attention to the feeding of contestants and neglect to allow for adequate rest before special events.

---

[19] Du Fraim, F. J. An experiment in lighting. Bulletin, Michigan Association School Physicians, March 1935.

[20] Jackson, C. O. Health and sanitary practices in high-school athletics. University of Illinois. Mimeographed, 1936. *See also* Health practices in athletics, Scholastic Coach, September 1940.

Despite such reports as we have quoted, it is encouraging to find that at least some gymnasia, pools, and equipment are beyond reproach from every point of view. They serve as object lessons in sanitary living. Also, there are doubtless many high-school and college coaches who are as wise and as careful of their charges as are the trainers and jockeys of candidates for the Kentucky Derby.

The custodian.—The phase of school health provision which goes by the name of sanitation finds professional personification in that nearly-always-present official—the custodian. He should know just what to do to maintain safe and healthful conditions (within the limits of possibility considering the equipment furnished) and to do this in the most economic fashion. The modern school, or at any rate the many-roomed school, is an elaborate mechanism equipped with complicated apparatus for heating and lighting and cleaning which, unfortunately, is far from automatic but requires much knowledge for its effective direction. School authorities are discovering this and they are not only making a wiser choice of a caretaker but they are proceeding to train him for his duties just as any other school official is trained for the special work to which he is assigned. Progress along this line is rapid. The subject was reviewed in detail in a recent publication of this Office.[21]

Especially significant is the summer school for custodians maintained by the North Carolina State School Commission where the State assumes the cost of board and room, materials, and instruction, with the expectation that more than the cost of schooling will be saved in the economical use of fuel and electricity. There is also the added assurance of lowered risk from fires and from accidents due to careless housekeeping and, on the positive side, better work by pupils on account of better lighting and greater comfort.

Health conditions in colleges and universities.—In 1938 this Office published the results of a questionnaire study of what colleges and universities are doing in the way of furnishing safe and sanitary conditions for the students in their care. Even more than public schools, these institutions seem to be backward in putting into practice what is known in this field. In only a small percentage of these institutions is a well-informed person made responsible for conditions on which life and health depend and seldom do the custodians have any training. There are exceptions, however. Purdue University furnishes an example in the training and supervision of its janitors and at least three institutions have placed trained sanitarians in charge of their buildings and grounds.[22]

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[21] U. S. Office of Education. The school custodian. By James Frederick Rogers. Washington, U. S. Government Printing Office, 1938. (Bulletin, 1938, No. 2.)

[22] U. S. Office of Education. Safety and sanitation in institutions of higher education. By James Frederick Rogers. Washington, U. S. Government Printing Office, 1938. (Pamphlet No. 84.)

III. Instruction in Health and Safety

Health instruction in public schools.—The revival of interest in health instruction which began about 20 years ago has left a much more than temporary mark on the curriculum of the elementary school and, indirectly, has affected the accompanying features of the school health program. However, the methods of instruction have undergone considerable change and the appearance of the word "tentative" on the title page of most courses of study indicates that curriculum makers are far from certain of just what to do. The transmission of information in this field is simple enough save for the fact that so much of it is "old stuff" with which the child is more or less familiar before he enters school. But the modification of conduct which is the end sought in health teaching is doubly difficult in that family tradition and custom may need to be overcome along with change of practice in the individual.

It is little wonder that unusual means of exciting interest were thought advisable in such instruction and we have seen the use of a variety of artificial devices from clowns, puppets, and fairy tales to weighing and measuring, health clubs, and the use of ribbons, stars, and other rewards. While claims have been made for results in practice obtained by the use of all these devices, there has been a considerable reaction against the use of most of them in that they were only temporary stimuli. In their stead it has seemed best to stick closely to happenings in the daily lives of the children from day to day as offering more reliable hooks on which to hang information and to influence conduct.

In their enthusiasm for health many curriculum makers made a liberal use of the pedagogical practice of repetition. If health teaching was a good thing then it should be a good thing to have our teaching every year and every day in the year. Owing to the fact noted above that there is little of freshness in the material offered, the subject soon becomes not only monotonous but boring to both pupils and teacher and this is particularly the case where a special teacher must handle the subject year after year. It is now felt by some experienced workers that instruction in this field can easily be overdone and especially where that instruction is direct.

The project method of instruction has offered a means of health teaching, which at least permits repetition without irritation in that the material bearing on the subject may be more or less novel. The result in absorption of facts does not seem to equal that of more direct teaching, but those facts can be kept before the pupil while they are embroidered with material bearing on the subject which maintains interest. Results in actual practice are dependent not only on the needs of the pupil and the nature of the instruction but on conditions

in the school and in the home which permit or hinder the use of knowledge.

While instruction in hygiene is furnished to elementary pupils in practically all schools, and such teaching is reported from about 50 percent of junior high schools, less than 10 percent of pupils in the last 4 years receive instruction in this field although it may be touched upon in courses in general science and in biology to which a larger proportion of students is exposed.

One reason for the omission of instruction in hygiene in the last three grades has been that comparatively few students remained in school and that instruction in this field should come early in order that all should be benefited. Now that so large a number continue in high school through all grades, this argument becomes less appropriate and there has been a growing interest in the idea of supplying a thoroughgoing course in physiology and hygiene, personal and public, in the last or the last two grades.

Health instruction in colleges.—As indicated by the results of questions asked senior college students regarding instruction received in high school, such instruction where given often falls below what might have been expected in content and in method. Dr. Cain of the University of Illinois in an investigation, the results of which were published in the Annual Report of the University of Illinois Health Service for 1935–36, found that of the teachers of hygiene, 80 percent, and of instructors in physiology, 58 percent were teachers of other subjects. Dr. Cain remarks, "The practice of drafting whoever might be willing to attempt to teach hygiene and sanitation is clearly shown by the fact that teachers of English, mathematics, physics, history, agriculture, physiography, and chemistry were given an opportunity to instruct high-school students in preventive medicine."

The nature of the instruction in this field furnished to high-school students is of concern to colleges and universities in that they find it difficult to adjust their own required courses to the needs and interests of students with such a variety of schooling or no schooling along this line.

A review of the situation by this Office in 1936 showed that about one-third of our institutions of higher education require their students to attend a course in hygiene.[23] There is a wide variety of offerings in these courses from one of 6 to one of 144 exercises, the most usual being 2 semester hours. The equipment for instruction has an equal range.

Subject matter of instruction—(a) Alcohol and narcotics.—Instruction concerning the effects of alcohol and narcotics is required by law in nearly all States and the repeal of prohibition has revived some public

[23] U. S. Office of Education. Instruction in hygiene in institutions of higher education. By James Frederick Rogers. Washington, U. S. Government Printing Office, 1936. (Bulletin, 1936, No. 7).

concern for the carrying out of these laws. Interest is also evidenced by the revision of such laws in a number of States. To just what extent instruction is furnished cannot be stated. Instruction in hygiene is given in about 50 percent of junior high schools and 5 percent of high schools and as the effects of alcohol are usually mentioned in connection with this subject, we can derive some hint from these figures. Some 12 State departments of education have been doing their part toward such instruction through the issuance of special courses of study in this field.

(*b*) *Sex education.*—Sex education began a long time ago, but in the days of Hippocrates and for thousands of years afterward, the content of teaching referred only to moderation in the exercise of the function of sex. The transmission of disease in connection with this function opened a new, and of late, very definite chapter in the subject and one which has made its teaching more urgent.

Since William Alcott and Sylvester Graham, in this country, made their bold venture a hundred years ago in the field of sex instruction, there have been those interested in its promotion as a part of the scheme of public-school education. That it is a delicate matter in some sections is indicated by laws which forbid or restrict such teaching or which would have it conducted only by physicians or nurses.

A study made under the direction of this Office in 1937 [24] showed that there was not only omission of essential teaching concerning sex and sex hygiene in most high schools but that the students, on reaching the status of college seniors, were resentful of such omission.

Here and there throughout the country thoroughgoing teaching is being carried on in an unobtrusive, and, hence, acceptable fashion, and there has been some indication of a spreading interest in this field. In 1928 the U. S. Public Health Service and this Office issued jointly a publication which might be helpful to high schools, and in the past year that publication was revised and reissued by the U. S. Public Health Service with the cooperation of this Office.

While the subject of sex is included to some extent in the required work of not more than 30 percent of our colleges and universities, there has been a considerable development of elective courses concerned with marriage and what it involves. A review of such instruction was made by Cecil E. Haworth and was published under the title "Education for Marriage Among American Colleges" in the *Bulletin of the Association of American Colleges* for November 1935.

(*c*) *Safety education.*—The excessive mortality and casualties from motor vehicles has brought about educational concern for the reduction of accidents not only from this but from other causes. The extent to which safety education has developed is indicated by legis-

[24] U. S. Office of Education. Student interests and needs in hygiene. By James Frederick Rogers. Washington, U. S. Government Printing Office, 1937. (Bulletin, 1937, No. 16.)

lation for such teaching in 15 States and the publication of courses of study in this field by about half of all States.

In 1938 Dr. Sullivan gathered information from 75 representative cities, large and small, concerning their activities in this field. Eighty percent of these cities furnished instruction in safety and in 50 percent there was an independent course in this subject. The subject is usually handled in connection with hygiene or with physical education.[25]

IV. Physical Education

Physical education and athletics in public schools.—In the field of physical education there has been much activity in the development of tests and measurements. One is reminded of a similar interest in tests and measurements under the name of "anthropometry" of 50 years ago. There is a decided difference, for in that earlier epoch the measurements (some 50 of them) were of dimensions of bone and muscle and the tests were of strength of groups of muscles. The purpose was an appraisal of the student's size and strength in comparison with the average, on the ground that these were measures of health and that increase in such measurements meant increase in health. There is still a search for some hoped-for, will-o'-the-wisp index which will indicate approximation to the highest physical condition, but more often tests are now made for the purpose of improving methods of teaching certain activities, for grouping pupils for participation in such activities, and as a pupil stimulus to athletic excellence. And so we have "motor ability tests" and "athletic achievement tests." Always in such examinations the investigator is confronted with the extreme complexity of the human organism and with many other factors that must be taken into account. When these are given consideration, the results of studies in this field have proven useful.

Notable in the field of curriculum making has been the final report of the Committee on Curriculum Research of the College Physical Education Association. This committee, under the chairmanship of Professor LaPorte, spent 9 years in its study and it attempts to present "a national program of physical education suitable for uniform adoption and use in schools and colleges throughout the United States." The committee hopes that its curriculum will serve: "First, to set the standards for a sound educational program that can be made available to every child in the United States; and second, to make it possible for children to transfer from one school, city, or State, to another, without excessive loss or embarrassment due to lack of uniformity of

[25] Sullivan, J. P. Present status of safety education. American Journal of Public Health, 28: 1175-84, October 1938.

program." The curriculum was published by the University of Southern California Press in 1937.

Physical educators have been growing more conscious of the need for providing a background of healthful and safe conditions for the activities over which they preside. Efforts have been made to reduce accidents on playgrounds and in gymnasiums and in camps to a minimum. Notable in this field have been the studies by Lloyd and his co-workers, Deaver and Eastwood, which were published in 1936.[26] We have already referred to the investigation by Jackson into the sanitary conditions under which physical activities are conducted.

In the realm of interscholastic athletics, the following opinions of the State directors of physical education taken from a résumé published by James Edward Rogers in 1937 seem especially important:

> Athletics should be a part of the general physical education program.
>
> The attention of high-school administrators is called to the fact that their programs of athletics should provide greater opportunities for participation in sports which may carry over into later life, such as tennis, golf, swimming, handball, volley ball, etc.
>
> The State directors are opposed to national or interstate championships in athletics.
>
> All athletics in high schools should be in the hands of and entirely controlled by properly constituted school officials.
>
> American interscholastic football for junior high school boys is undesirable.
>
> Girls should not imitate men's and boy's activities. They should have programs of activities based on their interests and needs. Girls' games should not be staged with boys' games.

At their 1938 meeting the State directors went on record as disapproving boxing as an interscholastic sport.

The actual effect of physical activities as variously prescribed, or participated in, is difficult of study especially where, as is almost invariably the case, we put all pupils through the same paces and in doing so, lose our controls for comparison. We have no knowledge as to the relative results of systems of gymnastics as compared with more natural activities. One attempt at such a study developed negative results. In such a barrenness of research the work by Floyd Rowe is of especial interest.

He compared the relative height and weight and lung capacity of students in junior high schools who participated in interscholastic sports with those not taking part in such activities. Whether or not the athletically inclined, or directed, children were worse off, they did not increase as much over a period of 1 to 2 years, by the above measures, as did their fellows. The athletes gained 1.27 inches in height and 21 cc. in respiratory capacity while the nonathletes averaged 3.06 inches and 45 cc.

[26] Lloyd, Deaver, *and* Eastwood. Safety in athletics. Philadelphia, W. B. Saunders company, 1936.

Rowe [27] compared 7-B boys excused from, with those required to take part in, physical education 5 days a week. Those in the latter group gained slightly more in height, weight, and respiratory capacity. He also compared three groups of boys in 10-B, one of which was excused from physical activities, one had no directed exercises except swimming, and the third, two double hour periods of gymnasium work per week. Except for weight, the second and third groups increased in measurements more than the first, and the third group gained most. The boys taking swimming, however, fell below the comparatively inactive group in average gain in weight.

Always children differ and often they differ widely in interests and in aptitudes and it should not be overlooked that in the modern school they do not all fit into, or fully profit by, a certain prescribed physical curriculum any more than they fit into, or fully profit from, a uniform mental curriculum. For not a few children, the physical activities offered and enjoyed by most children are an awful bore, moreover, even if suitable and agreeable in themselves, they may become unsuitable and disagreeable when "required" as a part of the school program. The situation is well stated by the distinguished English pediatrician, George F. Still:

> Organized games—football, cricket, hockey, net ball, etc.—excellent in themselves, when they become part of the school routine, or the scheduled order of each day's doings, are to be reckoned as part of the day's burden. I do not suggest that they are undesirable; on the contrary, I feel sure they are a very valuable part of school training, but they are sometimes not sufficiently recognized as items in the sum total of school expenditure of nervous as well as physical energy, a total which requires more careful adjustment for some children than others.[28]

In this connection it is refreshing to record that some physical educators are preaching the gospel of rest and relaxation as well as of strenuous activity—of gentleness and refinement as well as tension and aggressiveness. This is in addition to the cultivation of sportsmanship, which has been in progress for a longer period. This emphasis on the negative side of activities and the practice of the niceties of living is by no means new. The first State law requiring physical education in public schools, that of California in 1866, also included instruction in manners and morals, and, a generation ago, the "system" of Delsarte was expressly directed along these lines.

Physical education in colleges and universities.—Provisions for and practices in physical education in colleges and universities were reviewed by this Office in recent years and the reader is referred to the

[27] Rowe, F. A. Should junior high schools have programs of highly organized competitive athletics? Twenty-second annual Schoolmen's Week proceedings. University of Pennsylvania Bulletin, June 25, 1935.

[28] Still, George F. Common happenings of childhood. London, Oxford Press, 1938.

resulting publication for details on this subject.[29] From this study it is evident that with few exceptions our colleges and universities are endeavoring to furnish the rank and file of their students with ample opportunity for both indoor and outdoor physical activities. In most institutions it is required that certain periods be devoted, especially by undergraduates, to such activities usually in the first 2 years. The kinds of activities are often made elective and where they are not, there is a drift from the formal gymnastics of previous years toward activities of a more recreative nature. Tennis and golf are prominent, while horseback riding and even fishing are taught in a few schools. In an endeavor to meet the needs of students more than one investigation of student interests has been made.

V. Health Services

Present policies and practices in public schools.—In the field of medical, dental, and nursing service, there has been much agitation for more thorough periodic examinations than have often been conducted and for emphasis on the educational values of such examinations. In the effort to be more thorough and educational with the same personnel a few communities have reduced the number of examinations in the school life of the child, and one of the surprising features of a study of periodic examinations in a group of cities is the great variety of choice as to grades in which such examinations are to be made.[30] In a recent review of the subject by this Office it was found that, in the 51 cities of 100,000 and over reporting on this matter, examinations (omitting the kindergarten) were made in:

Number of grades	*Number of cities*	*Number of grades*	*Number of cities*
All	19	4	12
10 lower	2	3	8
9 lower	2	2	1
6	3	1	1
5	3		

To be consistent we would expect the time devoted to each examination to be relatively greater where examinations are made less frequently, but such is not the case. On the whole, the average length of the examination has increased. In 54 cities reporting, the periods were:

[29] U. S. Office of Education. Physical education in institutions of higher education. By James Frederick Rogers. Washington, U. S. Government Printing Office, 1937. (Pamphlet No. 82).

[30] This question of the frequency of periodic health examinations was presented in a paper of that title by the author of this survey, published in *The Journal of School Health*, January 1940.

Minutes	Number of cities	Minutes	Number of cities
1	1	10	12
3	6	12½	2
4	2	15	6
5	10	20	1
6	6	28	1
7½	4	30	1
8	2		

In 32 of 71 cities there is complaint of lack of personnel, so that if this lack were supplied we would expect more thorough or more frequent examinations.

In 60 percent of these larger cities, one or more parents are present at the first, if not subsequent examinations and in 10 percent, 100 percent of the children are accompanied by a parent; in 25 percent the percentage is 75 or more.

There has been a shift or apparent shift in the administration of school health services during the past 10 years. In 1930 this work was administered by the department of education in 60 percent of cities of 100,000 or more people; in 1940 the figure is 70 percent. It is likely that there has been no real change in this proportion but that the seeming change is due to the addition, in the last census, to cities of the first class from those of the second which, in 1930, had a proportion of 78 percent administered by the department of education.

In 1930 the percentage with administration by departments of health was 26, and in 1940 it is 20. In the 10 percent not accounted for, there is a joint arrangement.

In 30 of the 71 cities reporting, the salary of the chief medical officer is $4,000 or more; in 19 it is $5,000 or more; in 7 it is $6,000 or more; and in 5, it is $7,000 or more. The highest salary reported is $8,500. In 1930 only 6 cities reported a salary of $4,000 or more.

While most of the directors of school health services were trained only in the school of experience, 10 of those reporting in 1940 have had some schooling in public health. In 22 of these cities the nurses have had special training in public health.

Tuberculin tests and X-ray pictures are taken, usually of pupils in the high-school years, in 53 of these cities. Twenty of these cities have established their own facilities for refraction; in 46, dental treatments are furnished; and in 27 such treatments include fillings and extractions.

In 56 cities the teachers are expected to report the appearance of gross physical defects and they usually receive some in-service training to this end.

More detailed data with reference to these cities and to those with a population of from 10,000 to 100,000 will be made available in a special publication of this Office.

The dental problem.—The dental problem is as large as ever or nearly so. Despite all the strides of recent years the decay of teeth goes merrily on. We are able only in very small measure to "turn off the tap" of such defectiveness, for although the source is malnutrition we know too little about right nutrition to make much impression on the malady. In Oslo only 170 of 25,000 school children were found with perfectly healthy teeth. Schiotz studied 159 of these children including their dietary from the mother's pregnancy. One point which stands out is the high proportion of well-to-do homes from which these 159 children came as if "the comparatively varied menu of this class does much to repair its ignorance." Studying conditions in five homes in detail Schiotz [31] found (*a*) open-air life, (*b*) plenty of sleep, (*c*) and in four homes, an abundant supply of fresh milk, coarse bread, fruit, and vegetables. Toothbrush ritual was not practiced by all and in one home there was a generous supply of sweets, hence the beneficial effects of the brush and the harmfulness of sugar are not proven.

In 1936 the Medical Research Council of England published its final report on the influence of Diet on Caries in Children's Teeth, [32] but it gets nowhere in solving the problem. It does show, however, as Lilian Lindsay comments in the *Bulletin of Hygiene* for September 1936, "Each human being has its own special make-up affected in quite different ways from that of any of its fellows, reacting in its own particular way to its environment."

Many pieces of research in this country point to dietary deficiencies as the cause of caries and the incidence of the disease has been reduced in more than one experiment. However, the essentials for full prevention still slip through the fingers of the investigator.

The most positive word in this field has come from R. W. Bunting [33] and his associates in the University of Michigan who claims to have arrested caries in institutional children and rendered 80 to 90 percent of children practically free from this condition by the elimination of sugar and starch from their diet and sometimes by removing sugar alone. They have set up a caries prevention service in the university.

An encouraging report of what may be accomplished through persistent health instruction of pupils and parents comes from Des Moines where the percentage of children entering school with no

[31] Schiotz, C. The most important problems in hygiene today. Tidsskr. f. d. Norske Laegeforening. 56: 849–79, 1936.

[32] Medical Research Council. Special Report Ser. #211. Influence of diet on caries in children's teeth. (Final Report) by the committee for the investigation of dental disease. London, H. M. S. O., 1936.

[33] Bunting, R. W. Diet and dental caries. New York State Journal of Medicine, 39: 1–18, Jan. 1, 1939.

decayed and no filled teeth has been increased from 5 to 27 percent.[34]

Aside from the recommendation of a generous diet, not dominated by sugar or starch, the school health worker of 1940 is thrown back upon the prompt repair of the results of our ignorance on this subject, and the problem of repair is so huge that it can only be carried out in wholesale fashion by schools if there is no other available public agency. What can be accomplished in the saving of teeth is exhibited by New Zealand, where by thoroughgoing practices the rate of extraction of teeth per filling was reduced from 114.5 per 100 in 1921–22 to 17.5 per 100 in 1934–35.

A careful review of the school dental situation from the standpoint of meeting the demands for repair was presented by Klein, Palmer, and Knutson.[35] By the proposed scheme, in the initial year of its installment, complete treatment would be furnished all carious defects in the permanent teeth of all first-grade children. During the succeeding year such care would be provided for all first-grade children and for all second-grade children treated in the previous year. In the third year all first-grade children would be treated and the new defects in those of the second and third grades.

After the operation of this plan for 8 years all the pupils of these grades will have received yearly systematic treatment of all defects in permanent teeth. By the end of the eighth year and thereafter the services of only 10 percent of the available professional dental services of the community would need to be utilized in giving complete care for defects in the children of the elementary schools. If that were done there would be fewer cases to deal with at later ages.

Tuberculosis.—Information concerning tuberculosis in school children was most indefinite until the tuberculin test, supplemented by X-ray pictures, came into use on a large scale. The statistics derived from tuberculin tests show that infection is becoming much less common, but there is still a considerable percentage of children who give evidence of invasion. While dangerous development seldom begins to appear before high-school age, those who are infected should send the school health authorities searching for the possible sources of the infection and the proper and expeditious treatment of that source. What is done with the child himself will depend on his general condition and on what the X-ray picture shows as to developments.

The school management of children with tuberculous infection and those who are in delicate health from other causes has recently been reviewed by a committee, of which Louise Strachan of the National Tuberculosis Association was chairman. We quote from this report.[36]

[34] Moore, Fred. School health program. Illinois Health Messenger, Mar. 1, 1940.

[35] Klein, H., Palmer, C. E., *and* Knutson, J. W. Dental status and dental needs of elementary school children. Public Health Reports, 53: 751–65, May 13, 1938.

[36] The physically below-par child. Report of the Committee on the Care and Education of Below-Par Children. New York, National Tuberculosis Association, 1940.

Segregation of below-par children in special classes is not necessary and is detrimental to their educational and social development.

Experience has shown over the years that low temperatures in classrooms where children stay in a state of physical inactivity are not desirable. For below-par children as well as for all children, classroom temperature of between 65° and 70° F., with provision for renewal and gentle air movement without drafts, is recommended. Play and activity out of doors should be a part of every child's program.

Supplementary feeding at school is open to question.

School procedures adapted for individual children should provide rest periods, a lightened school program with avoidance of competitive activities which cause undue stress and strain, and attendance at regular classes for as much of the academic program as the child is able to carry.

A program must be developed which is sufficiently inexpensive and elastic, so that many children may receive this assistance. It must permit the below-par child to avail himself of a constructive health program and, at the same time, to benefit from regular academic education to the extent of his physical ability.

There is ample evidence of the much higher frequency of infection of children exposed to a teacher with active tuberculosis, and an examination for evidence of this disease becomes an essential part of the first and of periodic examinations of all teachers.

In 1939 the State of New Jersey required the periodic examination of pupils for the "presence or absence of active or communicable tuberculosis," according to rules and regulations of the State Board of Education (S. 92, 1939) and "the administration of tuberculin tests shall be an essential part of the health examination" of all who enroll as regular students in the State Teachers Colleges. (Regulation 147.)

The college health service.—The health services of colleges have had considerable scanning in recent years. In 1932 Griswold and Spicer [37] published a detailed account of the organization and activities in six of our larger institutions. In 1936 the Bureau of Medical Economics of the American Medical Association made an investigation with special reference to the relation of the work of colleges and universities to that of local practitioners.[38] In connection with the Second National Conference on College Hygiene in 1936 [39] statements were published concerning desirable provisions and practices in all phases of student health work. In 1937 the Office of Education published a general review of the activities in this field in all institutions of higher education.[40]

In 1939 Professor Cornely made a first-hand investigation of the medical and other health activities of most of the colleges and univer-

[37] Griswold, D. M., *and* Spicer, H. I. Student health services. Committee on the costs of medical care. University of Chicago Press. (Pub. #19, 1932.)

[38] University and college student health services. Chicago, American Medical Association, 1936.

[39] Health in colleges. New York, National Tuberculosis Association, 1937.

[40] U. S. Office of Education. Student health services in institutions of higher education. By James Frederick Rogers. Washington, U. S. Government Printing Office, 1937. (Bulletin, 1937, No. 7.)

sities for Negroes and furnished these institutions with recommendations for improvements. The survey is not yet published.

In 1939 an intimate study of medical practice with suggestions for its organization and development was issued as a report of the American Youth Commission.[41]

The studies in this field show that practically all colleges and universities are supplying medical service, preventive or curative, or both, but these services are in all stages of evolution from an examination of the heart of prospective intercollegiate athletes in the realm of sports (a more primitive service than that furnished three-quarters of a century ago at Amherst) to the most detailed investigation of the physical condition of all students now possible, with correspondingly thorough advisory and treatment services.

VI. Mind and Body

Physical condition and school progress.—The relation of bodily development and organic perfection to scholarship is a subject of perennial interest. All the many studies which have been made show that, on the average, there is such a relationship, but only a very slight one according to our means of educational measurement. The relationship seems to be an indirect one, as if some common factor were at work to produce both physical and mental imperfection, and so far as we know, it is largely physical and mental malnutrition which so often go together.

Attempts at correcting or improving physical defects have not had the results upon school progress that might be anticipated. A detailed study in this field worthy of especial note is that by Farris [42] on the relation of visual defects to progress in reading.

Farris found that "eye defects when judged solely as defects of structure . . . have no significant influence upon achievement in reading." In particular "minor defects had little or no effect." While pupils with visual defects wearing glasses made, on the average, more progress than the defectives without glasses, a much larger percentage of the latter progressed beyond the median for both. Children with far sight were more often benefited by glasses, while those with near sight seemed to be hindered by their use.

Seeking an explanation of the lack of relationship of visual defects to school work, Swanson and Tiffin [43] concluded that "probably sensory deficiencies are relatively unimportant as compared with central and more generalized habits and capacities." This does not,

[41] Diehl, H. S., *and* Shepard, C. E. The health of college students. Washington, D. C., American Council on Education, 1939.

[42] Farris, L. P. Visual defects as factors in influencing achievement in reading. Thesis, University of California, May 1934.

[43] Swanson, D. E., *and* Tiffin, J. Betts' physiologic approach to the analysis of reading disabilities. Journal of Educational Research, 29: 433-48, February 1936.

however, rule out the anatomical or physiological defect as of no importance. We must remember that school work is a deliberate process, with variety of visual occupation. When it comes to the more exacting tasks of office or factory, defects of vision which had no notable relation to school work may prove a hindrance to accuracy of performance while reflex nervous disturbances may reduce capacity for work and for enjoyment of life.

As already mentioned the study by Farris indicated that the application of glasses is not always a blessing or at least an unmixed good. Two investigations, one in this country and one abroad, have shown that a very large percentage of children who had been fitted with glasses had abandoned their use. If these had been really helpful this would hardly seem possible. Had ocular changes come about after application? Were there mistakes in filling prescriptions or was the application of glasses somehow unwarranted? The subject needs study from the standpoint of expenditure of money if for no other. But this is not the only practice of the school health program which needs investigation.

Home study.—The perennial complaints concerning home work which have arisen from both pupils and parents seem to have led to some reform both in the nature and extent of assignments. The White House Conference recommended the elimination of home work in the elementary school and in a few instances this recommendation has been followed. In some schools, as in Philadelphia, it is not introduced before the third grade and in others, as New York City, not before the fourth grade. In the former city there is to be a maximum of 20 minutes work in the third year; of 30–45 minutes in fourth, fifth, and sixth grades; and of 60 minutes in the seventh and eighth grades. The State Department of Public Instruction of Pennsylvania warns that home study should be a privilege and not a task and that assignments should be made according to capacity and individual needs.

Home work is as troublesome to teachers and pupils abroad as in this country and the most recent systematic study of the matter was reported from England in 1937. Following its inquiry the Board of Education recommended that no home work should be prescribed for children under 12, and that the amount for older pupils should be reduced.

VII. The Welfare of the Teacher

In recent years considerable thought has been given by administrators to the physical fitness of teachers. Not only has this been considered in the employment of new teachers, but periodically, in some schools, teachers may expect an appraisal of their physical condition, and occasionally the school offers a consultation service by its medical staff.

In 1934 the Office made an investigation with reference to health examinations now given to teachers prior to and in service, and the granting of sick and sabbatical leave. [44] The requiring of medical examinations before employment and periodically is becoming a more frequent practice.

In the matter of sick leave there is every variety of regulation from no leave to unlimited leave with pay, but, on the whole, there is a strong tendency to liberality and toward making the sick leave cumulative. School authorities are growing aware that it is better for all concerned that an ailing teacher should be at home rather than in the schoolroom and are acting accordingly.

The granting of a semester, or a year, of leave for travel or study at intervals of 7 or more years (sabbatical leave) is not very general but, especially in a time when there is need of more positions for teachers, it would seem to deserve consideration. As Sir John Adams put it, "After a good human holiday a teacher comes back better fitted for his professional work, even if he has not visited a single museum or picture gallery. He has met different types of people, has experienced different ways of eating and drinking and playing; he has taken a deep bath in the great pool of humanity and therefore is more at home with himself and the world than he was before."

Permission to teach for a year or a semester in some other community, granted by a few cities, is a move toward placing the dissatisfied or unhappy teacher in a more congenial position which should benefit all concerned.

In 1938 the Department of Classroom Teachers of the National Education Association issued the results of a more general investigation concerning teacher welfare in "Fit to Teach," The Ninth Yearbook of that department.

The conclusions from this study support our previous knowledge that teaching is one of the healthiest of occupations:

> Evidence seems to suggest that teachers, generally speaking, have as much good health as they probably would have enjoyed if they had entered some other vocation. Only a small percentage of them—about 15 to 20 percent—lack the kind of vigorous health needed for successful classroom work. There is some encouraging evidence, too, that teachers' health is improving through the years, evidence which comes not only from teachers' self-ratings but also from illness-absence records.

Evidence is presented which would indicate beneficial effects from health examinations, nonteaching periods, recreational programs, tenure protection, definite salary schedules, etc. The publication suggests details of personal hygiene for the teacher.

[44] U. S. Office of Education. The welfare of the teacher. By James Frederick Rogers. Washington, U. S. Government Printing Office, 1934. (Bulletin, 1934, No. 4.)

VIII. Organization and Administration of School Health Work

General policies.—In the past few years there has been little activity in the way of lawmaking in the fields of school health work and physical education. National and State committees have, however, been busy in setting down on paper their collective ideas as to what should be included in the school health program and how, in general, things should be done in this field. The reader who is interested in such pronouncements is referred to the production by the Educational Policies Commission of the National Education Association on "Social Services and the Schools" published by that organization in 1939; the statement concerning "The Public-School Program in Health, Physical Education, and Recreation" prepared by the Society of State Directors of Physical and Health Education, and printed in the *Journal of Health and Physical Education* for October 1939; and the Report of a Committee on School Health Policies of the State of Connecticut, issued by the State department of education of that State in February 1939.

A formidable group of committees representing the American Public Health Association, American Academy of Pediatrics, the Joint Committee on Health Problems in Education, and the National Organization for Public Health Nursing has been at work in this field for some 2 years, but its report is still in the making at the time of this writing. It is fortunate that there is little disagreement in the statements of these various committees.

There should be included in these general overviews of what seems best in organization and procedures, the section of the Regents' Inquiry concerning the State Department of Education of New York which has to do with school health supervision.[45] A great deal of good advice is packed into the few pages of this report. It is significant that the report recommends that "The elements of the school hygiene program should never be regarded as separate entities . . . For this reason the Committee believes that all phases of the program should be under the jurisdiction of educational authorities."

There has never been any question as to the administration of school health work save in the field of health examinations. The Regents' Inquiry would evidently place the responsibility for such activities, where in New York, it already legally belongs, with the department of education. The School Health Policies Commission in Connecticut suggests "that schools assume responsibility for developing a program of periodic examinations".

[45] Winslow, C.-E. A. The school health program. The Regents' Inquiry. New York, The McGraw-Hill Book Company, 1938.

The statement of the Educational Policies Commission reads:

> The provision of medical and dental examinations at regular intervals during the school career of each child constitutes a definite responsibility of school authorities. Physicians and dentists making these health inventories are employed either by the board of health or board of education specifically for this purpose; when making examinations they should be responsible to the school health authorities and through them to the board of education for the quality and completeness of their work in the school. The board of education is obligated to provide the services of physicians for the same reasons that it provides the services of psychologists and, at times, psychiatrists, for making mental health inventories, namely, to determine health status, facilitate removal of handicaps to learning, and find out whether some special adaptation of the school program may be necessary (as, for example, the omission of some forms of physical education or provision of lip reading or sight-saving classes).

School health services began in the search for communicable disease and were promoted by the agencies most responsible for their control, the departments of health. However, from their beginnings these departments leaned heavily on the school personnel for results, for the examinations were made by the teachers and the school health officer merely confirmed or rejected the findings of the teachers. Later came the search for physical defects and attempts to educate the parents in their treatment and prevention. With this came the shifting of responsibility for this work until at the present time, in only 20 percent of our largest cities (over 100,000) and in a smaller proportion of smaller cities it is administered by departments of health.

It is notable that in no institution of higher education has its health service been set up or managed by a department of health—State or local.

When it comes to the work of health instruction which has been carried on by schools for a century, there has been no question as to the school's responsibility in the matter and yet supervisors or "coordinators" of school health education are now to be found on the staffs of a number of State departments of health. The fact that they have not been employed by departments of education in those States is a better reason for this trespass in the school field than the more basic one that Federal funds have been forthcoming to health departments but not to education authorities. In Missouri we have a recognition of the administrative rights and advantages in that the supervisor of health education, while financed by the department of health, is located on the staff of the department of education.

Referring to the matter of administration of the school health program, the United States Commissioner of Education remarks:

> Because of the progress the schools have made and are making in the field of education for health, which is their peculiar province, it seems to me that there is no warrant for the displacement of a school-administered health

> education program, State or local, by another agency. Obviously there is so much that can advantageously be done by schools and public health authorities working together that our persistent effort should be the development of cooperation rather than the assumption of control by either group of functions which do not properly belong within its legitimate sphere of authority. It is my belief that progress will be most rapid if the needed improvement in school health programs is undertaken by the educational authorities themselves, employing additional trained health education personnel where needed, rather than imposed from without by another agency.[46]

When it comes to the treatment of defects and diseases of school children the role of the school is not so clear for it has never been its function to deal with the treatment of bodily ills. Aside from private physicians, the public clinics fostered by public welfare or public health agencies are the logical source of such work, and it is only in situations where facilities are not forthcoming through such organization that school authorities have felt obliged to go into the field of correctional work.

Recent legislation.—Of recent legislation, the most significant is that in New Jersey in 1939 which requires the periodic examination of pupils for the presence of active or communicable tuberculosis. Such an examination is also required by State regulation of all candidates for entrance to State teachers' colleges. Tuberculin and X-ray examinations are being made in a considerable percentage of schools the country over but this is the first legal requirement of such work.

Activities of State departments.—State-wide promotion of school health work has followed waves of country-wide legislation in this field and such lawmaking disturbances have been occasioned by times of national stress. The first State law for physical education followed close on the Civil War; the laws requiring health instruction with special reference to the effects of alcohol were begot by the war against intemperance; the World War was a strong stimulus to legislation for both physical education and health education and also to the requirement or permission of medical examination of school children. Some of these laws were revised or repealed and, in the year 1940, we find that 34 States have statutes requiring provision for physical education; 45 require or permit medical or dental examinations of lesser or greater extent; and nearly all require instruction in hygiene, including the effects of alcohol and other habit-forming drugs.

Injuries and fatalities from automobile accidents and the development of the public transportation of school children have brought forth legislation in the field of safety and safety education in some 15 States.

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[46] U. S. Office of Education. Organization and administration of school health work. By John W. Studebaker *and* Fred Moore. Washington, U.S. Government Printing Office, 1939. (Bulletin, 1939, No. 12.)

State supervision along these lines first appeared in 1914 in the field of medical inspection, and in 1916, in physical education, and both such appointments were made in New York.

Health instruction and the maintenance of healthful conditions have been included in the work of many State supervisors. At the present time we have supervisors of "Health and Physical Education" in departments of education of 15 States; supervisors or assistant supervisors of "Physical Education" in 8 States; supervisors of "Health Education" in 5; supervisors of "Nursing Service" in 3; of "Medical Service" in 1; of "Oral Hygiene" in 1; and of "Safety Education" in 1. The work of these agents is not always so limited as would appear from these titles. Altogether 25 States have one or more such workers. New York State leads in personnel with a staff of 16 specialists, including, besides the director of the division, 1 person devoted to "health and physical education"; 5 persons to medical inspection; 2 to school nursing; 2 to health education; 5 to physical education; and 1 to oral hygiene.

Not only is there no active promotion of health and physical education by State departments of education in half of our States, but it is evident that the personnel in those which carry on supervision is not always adequate. As a consequence of omissions in this field, we find, as previously mentioned, some 17 States in which the department of health has added to its staff a supervisor or coordinator of school health education, and this has been made possible by the receipt of Federal aid. [47]

Need for financial support.—The primary factor in the failure of State and local departments of education to rise to the occasion in the promotion of school health work, for which they are responsible, has been the lack of funds for employment of special personnel. A committee of the American Association of Health, Physical Education, and Recreation has been active in the promotion of legislation for the extension of Federal aid to such departments, as well as to departments of health, for the promotion of health and physical fitness. Certainly no agency can compare with the schools in the opportunity it presents for such promotion.

If adequate funds were made available, the writer of the next biennial survey should have a much more encouraging report to make of the application by schools of our knowledge of what should be done in the fields of health and physical education.

[47] Details concerning the activities of State departments in the field of health and physical education will be published by the Office as a section of its cooperative study of such departments.

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BIENNIAL SURVEY OF EDUCATION IN THE UNITED STATES

1938–40

PRACTICES AND CONCEPTS RELATING TO CITY BOARDS OF EDUCATION

VOLUME I

CHAPTER VII

FEDERAL SECURITY AGENCY

U. S. OFFICE OF EDUCATION

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CHAPTER VII

By

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FEDERAL SECURITY AGENCY

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U. S. OFFICE OF EDUCATION

John W. Studebaker, Commissioner

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PRACTICES AND CONCEPTS RELATING TO CITY BOARDS OF EDUCATION

Boards of Education Necessary

So SELDOM is the need for boards of education questioned and so few are the cities in which there are no such boards that it is scarcely necessary to say that city school systems should be under the control of boards of education.

When cities began to adopt the commission form of government, however, the question was raised as to whether the city board of education would not in time be abolished and the schools placed directly under the control of the city commission. Some authorities on municipal government predicted that this would happen and some have advocated doing away with boards of education and substituting a director of education appointed by the city commissioners.

These predictions, however, have not been fulfilled. City after city has adopted the commission form of government, but in only two cities (Chattanooga, Tenn., and St. Paul, Minn.) having a population of 30,000 or more, is there no board of education, the schools being under the control of the city commission.

Thus it is apparent that boards of education still function undisturbed by the many changes that have taken place in municipal government, such as the abolition of various municipal boards.

"If one would inquire," says the Commission of the Department of Superintendence on Problems of School Administration,[1] "concerning the persistence of the board of education during the period through which we have just passed we would find two important reasons for its continuance. In the first place, students of municipal government and the public at large have long been convinced that the schools have been administered better than have other units of government. In the second place, the people desire to keep the schools directly responsible to themselves without the intervention of any general municipal body. There is no other function of government in which all of the people are so vitally interested. We may all enjoy protection from the police department or from the health department, but most of us have little or no direct contact with policemen and are, for the most part, unaware of the steps that are taken to safeguard our health through sanitation or other measures. But all of us have come through some sort of school experience and all who have children are vitally concerned with the program of education provided for them."

[1] Critical Problems in School Administration, 12th Yearbook, Department of Superintendence, National Education Association, Washington, D. C., 1934. p. 14.

The commission that made a survey of the schools of Cleveland, Ohio, commenting upon the view held by a few persons that it would be a good plan to do away with boards of education entirely and trust the direction of the schools to a superintendent who would have something of the same relationship to the work as exists between the chief of police or the chief of the fire department and their assistants and subordinates says:[2] "If the proper work of the board of education were to deal with a mass of routine business detail, this view would be sound and the board of education might well be dispensed with." It was also pointed out by the commission that educational government is more likely to be flexible and adaptable if it has the advantage of lay counsel than if its policies are exclusively decided by its professional officials, and that in the conduct of public education the function of the layman is to moderate the transports of the experts.

In brief, whenever consideration is given the matter the values of lay boards of education representing the desire of the people seem so overwhelming that the public, legislators, and school administrators are firmly convinced that boards of education are necessary.

Powers and Duties

Boards of education are usually granted broad powers by the State legislature and for the purpose of carrying out the requirements of the State regarding educational functions they are by necessary implication vested with considerable power in matters of detail.

The corporate powers usually granted boards of education are: The power to acquire, hold, lease, and sell real and personal property; to receive requests and donations; to sue and be sued; to condemn property needed for educational purposes; and to perform other corporate acts required for the management and control of the schools and other agencies committed to their care.

Among other powers and duties that a board of education should have are:

1. To select the chief executive officer and to hold him responsible for carrying out the policies of the board.
2. To determine all questions of general policy.
3. To appoint upon nomination and recommendation of the chief executive, teachers, principals, supervisors, and other employees.
4. To authorize the preparation of the annual budget for the schools and other agencies maintained by the board and to pass upon and adopt such budgets as the work of the schools appears to necessitate and as the finances of the school district warrant.
5. To establish and maintain such types of schools and classes as deemed necessary to meet the needs of all the children.
6. To authorize the courses of study and to approve such courses before they are put into operation.

[2] Cleveland Educational Survey School Organization and Administration. The Survey Committee of the Cleveland Foundation, Columbus, Ohio, 1916. p. 124.

7. To determine the schedule of salaries of all employees.
8. To purchase school sites, and to contract for new buildings or additions.
9. To pass upon the architect's plans, approved by the chief executive and his assistants for buildings that the board has authorized.
10. To adopt a set of bylaws, rules, and regulations for the government of the school system and of other agencies and activities under its charge or direction.
11. To authorize the selection of such books and all other supplies as may be necessary, and to approve such selections, prices, and other conditions before contracts are made.
12. To act as a board of appeals for teachers, principals, and school patrons in cases in which they feel that the decisions of the chief executive officer should be appealed to the board for its action.

The foregoing list of powers and duties of boards of education could be greatly expanded but they represent the most important ones. One point should be clear, namely, that in order to function efficiently a board of education should act as a policy forming body and in an inspectorial or judicial capacity rather than in an executive capacity. As a legislative body it formulates and adopts policies and then places the responsibility for the execution of its policies directly in the hands of the superintendent of schools and in due time ascertains whether the policies are working out satisfactorily and if not, why not.

Qualifications

The qualifications required for school-board membership vary among the States. Among the qualifications prescribed in some of the State laws are: "Taxpayer," "freeholder," "citizen," "not a holder of another public office," "good moral character," "school patron," "resident of the city for a specified time." The question is sometimes asked whether certain educational attainments should be required of school board members, the standard being at least graduation from the grade of school over which they have control. Men and women who have completed a high-school or college course it would seem should be better school board members than those of less attainments, but many men and women who have not completed high-school and college courses are ardent supporters of progressive school systems. To bar such persons by legislation from boards of education might not in some instances be good policy. In general, the voters should decide what citizens because of certain desirable traits are qualified for school board membership.

There are numerous traits that a school board member should possess. Mendenhall,[3] who compiled a checking list of desirable traits of a city school board member from replies to a questionnaire sent to presidents of city boards of education and superintendents of schools in 112 cities, lists 58 traits that a school board member should have.

[3] Mendenhall, Edgar. The City School Board Member and His Task. Pittsburg, Kans., College Inn Book Store, 1929. pp. 50–59.

It is doubtful whether any candidate for school board membership would possess all of them. In general, however, a board of education should be composed of persons who possess ability in dealing with private and public affairs, sterling character, and breadth of mind, who are convinced of the importance of education, who are willing and able to give time and energy to their office, and who clearly understand what their duties are.

The question is sometimes raised "What vocations should be represented on school boards?" The answer is that no vocation as such should be represented. Naturally, however, each school board member has some vocation, but as a board member he should not be considered as representing that vocation but all the people of the community. A board of education composed of persons having various occupations, however, doubtless tends to make it cosmopolitan in its views. No one would advocate that a board should be composed almost entirely of lawyers, physicians, or of persons of any other professional or vocational group. A school board composed of members who are broad-minded, who possess sound judgment, who know the community and its needs, and who are free of entangling alliances should be able to consider fairly the claims of any individual, group, or organization advocating the adoption of certain measures.

Selection

Elected or appointed.—Members of city boards of education are in a majority of the cities elected by popular vote. In most of the other cities members of the board of education are appointed by the mayor, or by the city council or commission. In a few cities they are appointed by the judges of the county courts, by the city manager, or by the legislature. In 55, or 69.6 percent, of 79 cities having a population of 100,000 or more reporting, the boards of education are elected by popular vote; in 17, or 21.5 percent, they are appointed by the mayor; in 3, or 3.8 percent, they are appointed by the council or commission; and in 4, or 5.1 percent, they are appointed by the courts. In 153, or 75.7 percent, of 202 cities having a population of 30,000 to 100,000 reporting, school board members are elected by popular vote; in 27, or 13.4 percent, they are appointed by the mayor; in 20, or 9.9 percent, by the council or commission; in 1, or 0.5 percent, by the city manager; and in 1 by the State legislature.

Over a period of years there have been so few changes in the method of selection of members of city boards of education that no trend can be noted. The data contained in table 1 might indicate a slight change from 1917 to 1940, but this may be accounted for by the fact that a different number of cities reported at each date. A comparison of the methods of selecting school boards in 46 cities having a population of 100,000 or more reporting in 1917 and 1940 reveals

that only 1 of the 46 cities changed its method. That city changed from popular election to appointment by the court. Of 71 cities having a population of 30,000 to 100,000 reporting in 1917 and 1940, 2 changed from appointment by council to popular election and 1 from appointment by mayor to popular election.

Table 1.—*Number and percent of cities using certain methods of selecting boards of education in 1917, 1927, and in 1940*

Method of selection	Cities of 100,000 or more population						Cities of 30,000 to 100,000 population					
	1917		1927		1940		1917		1927		1940	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
1	2	3	4	5	6	7	8	9	10	11	12	13
Elected	29	64	38	69.0	55	69.6	107	79.3	103	76.3	153	75.7
Appointed by:												
Mayor	10	22	11	20.0	17	21.5	22	16.3	16	11.9	27	13.4
Council or commission	3	7	3	5.5	3	3.8	6	4.4	15	11.1	20	9.9
Courts	3	7	3	5.5	4	5.1						
City manager									1	.7	1	.5
Legislature											1	.5
Total	45	100	55	100.0	79	100.0	135	100.0	135	100.0	202	100.0

It thus appears that from 1917 to 1940 there were so few changes in the method of selecting school board members that no trend is evident. In fact, since the beginning of the century only a few cities have changed their method of selecting their boards of education. Election by popular vote has always been the prevailing method.

Whether school board members should be elected or appointed is a question upon which there is a difference of opinion, but in general, authorities on school administration are in favor of election by popular vote. The opinion of those favoring the elective method is that the people take more interest in the schools under this method than under the appointive method; that appointment by the mayor or city council places the schools to a great extent in the hands of city officials who are generally elected upon local municipal issues rather than upon school issues which, since education is a State function, are of State-wide concern; that the city officials making the appointments may appoint school board members for local political reasons; and that appointment by the city officials offers an opportunity for them to control the board of education. On the other hand it is claimed by those favoring appointment by the mayor that he can be made directly responsible to the people for the kind of board he appoints, and that many men and women well qualified for school board membership will not become candidates for election but will accept appointment by the mayor.

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Elected or appointed at large or by wards.—It is doubtful whether anyone who has made a study of city school administration advocates the election or appointment of school board members by city wards or districts. The ward or district method of selecting school board members was once the practice in many cities, but today in only a few cities are school board members elected by wards (table 2). Under the ward system, board members frequently were concerned chiefly with the schools of their respective wards rather than with the schools of the entire city. The representatives were usually inclined to get as much as possible for the wards that they represented; consequently the schools in the wards represented by the most influential members fared better than did the schools in the wards represented by the less influential members. The evils of the ward method of selecting school board members at the time when a number of cities used this method are pointed out in the 1895–96 report of the U. S. Commissioner of Education as follows:

> Ward policies is a matter constantly before the mind of school lawmakers, and any amount of inventive genius has been exercised to devise a way of choosing school boards that would make it impossible for the ward boss to interfere. Incompetent principals and teachers chosen to "encourage" political henchmen; contracts corruptly given to fatten the treasuries of partisan organizations; assessment of teachers for campaign funds; unseemly intrigues, strifes, and bickering within the schools themselves by adherents of different parties; the son of some local heeler allowed to be habitually unruly, to the detriment of general school discipline, because the teacher fears for the position if he attempts to assert his authority—all these evils and more are feared by those who have seen the results when local politics has had undue influence.

In the cities that have abandoned the ward method of selecting school board members the universal verdict has been: (1) Better qualified men and women are elected; (2) local prejudices no longer dominate the board; (3) members work for the interest of the entire city and not for the wards represented; and (4) "logrolling" among ward representatives has been eliminated.

Table 2.—*Number and percent of cities selecting boards of education at large and by wards*

District from which selected	Cities having a population of 100,000 or more						Cities having a population of 30,000 to 100,000					
	1917		1927		1940		1917		1927		1940	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
1	2	3	4	5	6	7	8	9	10	11	12	13
City at large	31	81	48	87	68	85	82	77	106	86	164	86
By wards	6	16	5	9	10	13	16	15	14	11	20	11
Some by wards, some at large	1	3	2	4	2	2	9	8	4	3	6	3
Total	38	100	55	100	80	100	107	100	124	100	190	100

The trend is doubtless more nearly represented by the data in table 3 in which the same cities are used. In 1902, boards of education in 27 of the 55 cities listed in this table were elected or appointed by wards or districts; by 1917 the number had been reduced to 10; and by 1940, to 5.

Table 3.—*District from which school-board members were elected or appointed, 1902, 1917, 1927, and 1940, in 55 cities*

City	1902 [1]	1917	1927	1940
1	2	3	4	5
Los Angeles, Calif.	Wards	City	City	City.
San Francisco, Calif.	City	do	do	Do.
New Haven, Conn.	do	do	do	
Waterbury, Conn.	do	do	do	Do.
Washington, D. C.	do	do	do	Do.
Savannah, Ga.	do	do	do	
Chicago, Ill.	do	do	do	Do.
Peoria, Ill.	Wards	Wards	do	Do.
Evansville, Ind.	City	City	do	Do.
Fort Wayne, Ind.	do	do	do	Do.
Indianapolis, Ind.	do	do	do	Do.
Kansas City, Kans.	Wards	do	do	Do.
Louisville, Ky.	Legislative districts.	do	do	Do.
New Orleans, La.	Districts and city	do	do	Do.
Portland, Maine	1 from each ward, 3 city.	Both wards and city.	do	
Baltimore, Md.	City	City	do	Do.
Boston, Mass.	do	do	do	Do.
Holyoke, Mass.	7 ward, 2 city	Wards and city	Wards and city	Wards and city.
Somerville, Mass.	Wards	Wards	Wards	Wards.
Worcester, Mass.	do	do	1 city, 10 wards	1 city, 10 wards.
Detroit, Mich.	do	do	City	City.
Minneapolis, Minn.	City	City	do	Do.
Kansas City, Mo.	do	do	do	Do.
St. Joseph, Mo.	do	do	do	Do.
St. Louis, Mo.	do	do	do	Do.
Lincoln, Nebr.	do	do	do	Do.
Omaha, Nebr.	do	City	do	Do.
Jersey City, N. J.	1 city, other by wards.	do	do	Do.
Newark, N. J.	Wards	do	do	Do.
Paterson, N. J.	do	do	do	Do.
Binghamton, N. Y.	City	do	do	Do.
New York, N. Y.	Boroughs		Boroughs	Boroughs.
Rochester, N. Y.	City	City	City	City.
Utica, N. Y.	do	do	do	Do.
Akron, Ohio	Wards	do	do	Do.
Cincinnati, Ohio	do	do	do	Do.
Cleveland, Ohio	City	do	do	Do.
Columbus, Ohio	Wards	do		
Toledo, Ohio	City	do	City	Do.
Altoona, Pa.	do	do	do	Do.
Erie, Pa.	Wards	do	do	Do.
Harrisburg, Pa.	do	do	do	Do.
Lancaster, Pa.	do	do	do	Do.
Philadelphia, Pa.	do	do	do	Do.
Pittsburgh, Pa.	do	do	do	Do.
Scranton, Pa.	do	do	do	
Wilkes-Barre, Pa.	City	do	do	Do.
Pawtucket, R. I.	do	do	do	
Providence, R. I.	Wards	Wards	2 city, 5 districts	Districts.
Memphis, Tenn.	City	City	City	City.
Houston, Tex.	do	do	do	
San Antonio, Tex.	do	Wards	do	Do.
Salt Lake City, Utah	Wards	do	Wards	Wards.
Wheeling, W. Va.	do	do	City	County.
Milwaukee, Wis.	do	City	do	City.

[1] Rollins, Frank. School Administration in Municipal Government. New York, The Macmillan Company, 1902, p. 28.

Nomination of candidates.—In the cities in which school-board members are elected by popular vote it is the usual practice to nominate candidates for school-board membership on petition of a certain number of qualified voters. This is the case in 64 percent of the cities having a population of 100,000 or more and in 61 percent of the cities having a population of 30,000 to 100,000 reporting on the method of nominating candidates (table 4).

Data are not available to indicate trends in the methods of nominating candidates for school-board membership, but it is doubtful whether the methods have been changed in many cities within the past 20 or 25 years. Nomination upon petition of a certain number of qualified electors is doubtless the preferable method. Nomination by party caucus seems to be the least desirable way. The following method proposed in one of the city school survey reports has features to commend it:

> The matter of nominating candidates can be intrusted to a committee, 100 or more in number, made up of representative men and women chosen for the purpose from various civic bodies in the city which are working in a nonpolitical way for the betterment of conditions and for the progress of the city. Such a committee, coming together for the purpose of inviting representative men and women of the community to stand before the public as candidates for a place on the board of education and guaranteeing such candidates their support would serve to induce men and women to take places on the board.

Table 4.—*Number and percent of cities using certain methods of nominating candidates for school board membership*

Method of nomination	Cities having a population 100,000 or more		Cities having a population 30,000 to 100,000	
	Number	Percent	Number	Percent
1	2	3	4	5
On petition	32	64	81	61
At primary	8	16	37	28
Party caucus	4	8	5	4
Announce on candidacy	5	10	10	7
P. T. A. committee	1	2		
Total	50	100	133	100

Type of ballot.—In a majority of the cities in which school board members are chosen by popular vote they are elected on a nonpartisan ballot (table 5). This practice conforms with the principle that the schools should be free from partisan politics.

As stated by Dr. P. P. Claxton, former U. S. Commissioner of Education: [4]

> Educational administration has in principle, and should have in practice, no direct relation to partisan politics as we know partisan politics in this country. The public-school system of any State is its greatest cooperative

[4] U. S. Department of the Interior, Bureau of Education. Organization of State Department of Education. (Bulletin 1920, No. 46) p. 4.

enterprise, supported by all the people in proportion to their ability, regardless of the amount of their wealth, and regardless of any political or religious affiliations, in order that all the children of all the people may, regardless of their poverty and all other conditions, have as nearly as possible equal and full opportunity for the education that will best develop their individuality, and prepare them for life, for making a living, and for the duties and responsibilities of democratic citizenship. From the standpoint of statesmanship and the public welfare, all the people are interested alike in the schools. Our political parties do not differ in regard to educational principles or practices any more than they do in regard to the Ten Commandments or the moral code; and to attempt to make education a matter of partisan politics is good neither for education nor for politics. Education is the largest and most important part of what has well been called our "purposive government," through which all the people are served and united, rather than controlled under policies on which the people are divided into parties.

Table 5.—*Number and percent of cities using the type of ballot indicated, 1927–1940*

Type of ballot	Cities having a population of 100,000 or more				Cities having a population of 30,000 to 100,000			
	1927		1940		1927		1940	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
1	2	3	4	5	6	7	8	9
Partisan	5	12	8	15	30	22	29	21
Nonpartisan	36	88	47	85	104	78	113	79
Total	41	100	55	100	134	100	142	100

As may be noted from table 5 there has been no trend toward either type of ballot. A comparison of the same cities reporting both in 1927 and in 1940 reveals that in no city has a change been made from one type of ballot to the other.

When elected.—In a majority of the cities in which school board members are chosen by popular vote, they are elected at a general election. This is the case in 76 percent of the cities having a population of 100,000 or more and in 61 percent of the cities having a population of 30,000 to 100,000 reporting (table 6).

Table 6.—*Number and percentage of cities in which school board members were elected at a special or at a general election in 1927 and in 1940*

Type of election	Cities having a population of 100,000 or more				Cities having a population of 30,000 to 100,000			
	1927		1940		1927		1940	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
1	2	3	4	5	6	7	8	9
General election	33	81	42	76	67	66	91	61
Special election	8	19	13	24	36	34	58	39
Total	41	1.00	55	100	103	100	149	100

A comparison of the practices in the same cities reporting in 1927 and in 1940 reveals that one city having a population of 100,000 or more changed from general election to special election, and that one city having a population between 30,000 and 100,000 changed from special to general election (table 7).

Table 7.—*Number of same cities in which school board members were elected at a special or at a general election in 1927 and 1940*

Type of election	Cities having a population of 100,000 or more				Cities having a population of 30,000 to 100,000			
	1927		1940		1927		1940	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
1	2	3	4	5	6	7	8	9
General election	26	87	25	83	37	60	38	62
Special election	4	13	5	17	24	40	23	38
Total	30	100	30	100	61	100	61	100

The advantages claimed for the special election are that school board members are more likely to be elected without regard to partisan politics at a special than at a general election; that the electors exercise greater care in voting for candidates at a special than at a regular election where city, county, and State officials are given more consideration than are school officials; and that a special election fixes the attention of the people directly upon the schools.

The special election plan, however, has certain disadvantages. In some instances, possibly in a majority of instances, only a few people vote at a special election; and equally as well qualified men and women may possibly be elected at a general election if voted for on a separate ballot without designation as to political party.

Data are not available to show how well special elections for school board members are attended, but before any definite conclusion can be reached regarding the superiority of the special election over the general election a study of the subject is needed. If fewer electors vote for school board members at a special election than at a general election, the special election plan may well be questioned.

Number of Members

At the beginning of the century many cities had large boards of education, some of them consisting of 30 or more members each, but experience hás shown that a small board is much more efficient than a large one. There is, however, some difference of opinion as to the number of members that should constitute a small board. The number most frequently advocated is 5, 7, or 9, and in practice there are comparatively few boards of education that are composed of fewer

than 5 members each and comparatively few of more than 9 members each. The median number is 7 (table 8). Whether or not 7 is the ideal number, it is the general opinion that boards of 5 to 9 members can transact business much more expeditiously than can boards of more than 9 members. In a small board, school matters can be carefully discussed, each member having an opportunity to express his views, while on large boards only a few members can talk on the proposals unless there are frequent and long meetings of the board. The large board offers an opportunity for the oratorically inclined members to make a speech, thereby delaying the consideration of important matters. The large board tends to break up into committees, thus depriving the entire board of giving the consideration it should to matters before it, while the small board can attend to the business before it at board meetings without referring it to some committee. The trend has been toward boards of education composed of not more than 9 members (table 8).

Table 8.—*Number and percentage of cities having various sized boards of education, 1917, 1927, 1940*

Number of members	Cities having a population of 100,000 or more						Cities between 30,000 and 100,000 population					
	1917		1927		1940		1917		1927		1940	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
1	2	3	4	5	6	7	8	9	10	11	12	13
3	0	------	1	1.8	1	1.3	7	4.9	7	5.1	9	4.5
4	1	2.3	0	------	0	------	0	------	1	.7	1	.5
5	11	25.0	11	20.0	20	25.7	27	19.0	37	27.0	65	32.5
6	2	4.6	3	5.4	6	7.7	14	10.0	8	5.8	14	7.0
7	8	18.1	21	38.4	26	33.3	26	18.3	27	19.6	47	23.5
8	0	0	0	------	0	------	4	2.8	6	4.3	4	2.0
9	9	20.4	11	20.0	15	19.2	39	27.5	33	23.9	38	19.0
10	0	------	1	1.8	2	2.6	5	3.5	6	4.3	6	3.0
11	0	------	2	3.6	2	2.6	2	1.4	3	2.2	6	3.0
12	4	9.0	2	3.6	3	3.8	10	7.0	2	1.4	3	1.5
13	0	------	0	------	0	------	0	------	3	2.2	4	2.0
14	1	2.3	0	------	0	------	2	1.4	2	1.4	0	------
15	3	6.8	3	5.4	3	3.8	0	------	1	.7	2	1.0
16	0	------	------	------	------	------	1	.7	1	.7	0	------
17	0	------	------	------	------	------	3	2.1	0	------	1	.5
18	0	------	------	------	------	------	1	.7	0	------	------	------
19	0	------	------	------	------	------	1	.7	1	.7	------	------
21	2	4.6	------	------	------	------	------	------	------	------	------	------
30	2	4.6	------	------	------	------	------	------	------	------	------	------
46	1	2.3	------	------	------	------	------	------	------	------	------	------
Total	44	100.0	55	100.0	78	100.0	149	100.0	138	100.0	200	100.0
Median	9		7		7		7		7		7	
Percent having more than 9 members	20.6		14.4		12.8		17.5		13.6		11.0	

In 1917, 20.6 percent of the boards of education in cities having a population of 100,000 or more were composed of more than 9 members each; in 1927, 14.4 percent; and in 1940, 12.8 percent. A similar reduction in the size of boards of education in cities having a population of 30,000 to 100,000 occurred. In 1917, 17.5 percent of the boards

in these cities were composed of more than 9 members each; in 1927, 13.6 percent; and in 1940, 11.0 percent.

A comparison of the number of members on boards of education in certain cities in 1902, 1917, 1927, and 1940 shows that from 1902 to 1917 the boards of education in a number of cities were reduced in size, that from 1917 to 1927 some other boards became smaller, and that from 1927 to 1940 there were only a few cities in which changes were made in the number of school board members (table 9).

Table 9.—*The size of boards of education in certain cities in 1902, 1917, 1927, and 1940*

City	1902[1]	1917	1927	Change 1902 to 1927	1940	Change 1927 to 1940
1	2	3	4	5	6	7
Los Angeles, Calif.	9	7	7	−2	7	0
San Francisco, Calif.	4	4	7	+3	7	0
Denver, Colo.	6	5	7	+1	7	0
New Haven, Conn.	7	7	7	0	----------	----------
Waterbury, Conn.	7	9	9	+2	9	0
Washington, D. C.	7	9	9	+2	9	0
Chicago, Ill.	21	21	11	−10	11	0
Peoria, Ill.	16	17	19	+3	7	−12
Evansville, Ind.	3	3	5	+2	5	0
Fort Wayne, Ind.	3	3	7	+4	5	−2
Indianapolis, Ind.	5	5	5	0	5	0
Kansas City, Kans.	6	6	6	0	6	0
Louisville, Ky.	14	5	5	−9	5	0
New Orleans, La.	20	5	5	−15	5	0
Portland, Maine	13	12	7	−6	----------	----------
Baltimore, Md.	9	9	9	0	9	0
Boston, Mass.	24	5	5	−19	5	0
Brockton, Mass.	10	10	9	−1	9	0
Holyoke, Mass.	9	9	9	0	9	0
Somerville, Mass.	14	16	16	+2	9	−7
Worcester, Mass.	24	30	11	−13	11	0
Detroit, Mich.	17	21	7	−10	7	0
Minneapolis, Minn.	7	----------	7	0	7	0
St. Joseph, Mo.	6	6	6	0	6	0
St. Louis, Mo.	12	12	12	0	12	0
Lincoln, Nebr.	9	----------	6	−3	6	0
Omaha, Nebr.	15	12	12	−3	12	0
Jersey City, N. J.	13	9	9	−4	9	0
Newark, N. J.	30	9	9	−21	9	0
Paterson, N. J.	8	9	9	+1	9	0
Binghamton, N. Y.	7	5	5	−2	5	0
New York, N. Y.	46	46	7	−39	7	0
Rochester, N. Y.	5	5	5	0	5	0
Troy, N. Y.	7	3	3	−4	3	0
Utica, N. Y.	6	6	6	0	6	0
Akron, Ohio	16	7	7	−9	7	0
Cincinnati, Ohio	31	7	7	−24	7	0
Cleveland, Ohio	7	7	7	0	7	0
Toledo, Ohio	5	5	5	0	5	0
Altoona, Pa.	6	9	9	+3	9	0
Erie, Pa.	18	9	9	−9	9	0
Harrisburg, Pa.	27	9	9	−18	9	0
Lancaster, Pa.	36	9	9	−27	9	0
Philadelphia, Pa.	42	15	15	−27	15	0
Pittsburgh, Pa.	39	15	15	−24	15	0
Scranton, Pa.	21	9	9	−12	9	0
Wilkes-Barre, Pa.	6	9	9	+3	9	0
Pawtucket, R. I.	9	9	9	0	----------	----------
Providence, R. I.	33	30	7	−26	7	0
Charleston, S. C.	10	----------	10	0	10	0
Memphis, Tenn.	5	5	5	0	5	0
Houston, Tex.	7	7	7	0	----------	----------
San Antonio, Tex.	7	9	7	0	7	0
Salt Lake City, Utah	10	----------	10	0	10	0
Norfolk, Va.	14	----------	6	−8	6	0
Wheeling, W. Va.	21	21	15	−6	5	−10
Milwaukee, Wis.	23	15	15	−8	15	0

[1] Rollins, Frank. School Administration in Municipal Government. New York, The Macmillan Company, 1902, p. 24.

Term of Office

The prevailing opinion among authorities on school administration is that school board members should be elected or appointed for a term of more than 2 or 3 years and that the terms of only 1 or 2 members should expire at the same time. Practically all the city school survey commissions recommend that school board members have a tenure of not less than 4 years. Some recommend that the tenure be the same as the number of school board members; that is, if there are 5 members on the board, the term should be 5 years, with one member elected or appointed each year. If school board members are elected for a term of only 2 or 3 years, there may be frequent changes in the board personnel, resulting in a lack of the necessary continuity of service to produce a high degree of efficiency. If school board members are elected for a short term, they may not have an opportunity to carry out some necessary reform. A long term is more likely to insure a settled administrative policy than is a short term.

In practice the average length of term for which school board members are elected or appointed is 4.3 years in cities having a population of 100,000 or more, and 4 years in cities having a population of 30,000 to 100,000. The tendency appears to be in the direction of longer tenure (table 10).

Table 10.—*Term of school board members, 1917, 1927, and 1940*

Term of office in years	Cities having a population of 100,000 or more						Cities having a population of 30,000 to 100,000					
	1917		1927		1940		1917		1927		1940	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
1	2	3	4	5	6	7	8	9	10	11	12	13
2	2	4.7	5	9.0	4	5.0	20	15.0	13	10.0	12	6.0
3	14	32.6	14	25.5	17	21.3	54	40.6	55	41.9	68	34.3
4	15	34.8	18	32.8	32	40.0	28	21.0	23	17.6	59	29.8
5	4	9.3	3	5.5	5	6.2	6	4.6	16	12.2	31	15.7
6	8	18.6	13	23.6	21	26.3	23	17.3	24	18.3	28	14.2
7	------	------	2	3.6	1	1.2	2	1.5	------	------	------	------
Total	43	100.0	55	100.0	80	100.0	133	100.0	131	100.0	198	100.0
Average in years	4		4.2		4.3		3.7		3.9		4	
Percent of cities having term of more than 3 years	62.7		65.5		73.7		44.4		48.1		59.7	

From 1902 to 1927 the length of term was increased in practically every city reporting at both dates. From 1927 to 1940 the length of term was increased in 3 of these cities, and in 4 it was decreased (table 11).

Table 11.—*Term of school board members in 1902, 1917, 1927, and 1940, in 54 cities*

City	1902 [1]	1917	1927	Changes from 1902 to 1927	1940	Changes from 1927 to 1940
1	2	3	4	5	6	7
San Francisco, Calif	4	4	7	+3	5	−2
Denver, Colo	3	6	6	+3	6	0
New Haven, Conn	4	4	4	0		
Waterbury, Conn	2	6	6	+4	2	−4
Washington, D. C	7	3	3	−4	3	0
Chicago, Ill	3	3	5	+2	5	0
Evansville, Ind	3	3	3	0	4	+1
Fort Wayne, Ind	3	3	4	+1	4	0
Indianapolis, Ind	4		4	0	4	0
Kansas City, Kans	3	4	4	+1	4	0
Louisville, Ky	2	4	4	+2	4	0
New Orleans, La	4	4	6	+2	6	0
Portland, Maine	2	2	3	+1		
Baltimore, Md	6	6	6	0	6	0
Brockton, Mass	3	3	6	+3	4	−2
Boston, Mass	3	3	4	+1	4	0
Somerville, Mass	2	2	2	0	2	0
Worcester, Mass	3	3	2	−1	2	0
Detroit, Mich	4	4	6	+2	6	0
Minneapolis, Minn	6		6	0	6	0
St. Joseph, Mo	2	6	6	+4	6	0
St. Louis, Mo	6	6	6	0	6	0
Lincoln, Nebr	3		6	+3	6	0
Omaha, Nebr	3	4	4	+1	4	0
Jersey City, N. J	2	3	3	+1	3	0
Newark, N. J	2	3	3	+1	3	0
Paterson, N. J	2	3	3	+1	3	0
Binghamton, N. Y	7	5	5	−2	5	0
New York, N. Y	5	5	7	+2	7	0
Rochester, N. Y	4	5	4	0	4	0
Troy, N. Y	3	6	6	+3	6	0
Utica, N. Y	3	6	3	0	3	0
Akron, Ohio	2	4	4	+2	4	0
Cincinnati, Ohio	3	4	4	+1	4	0
Cleveland, Ohio	2	4	4	+2	4	0
Toledo, Ohio	5	4	4	−1	4	0
Altoona, Pa	3	6	6	+3	6	0
Erie, Pa	3	6	6	+3	6	0
Harrisburg, Pa	3	6	6	+3	6	0
Lancaster, Pa	3	6	6	+3	6	0
Philadelphia, Pa	3	6	6	+3	6	0
Pittsburgh, Pa	3	6	6	+3	6	0
Scranton, Pa	4	6	6	+2		
Wilkes-Barre, Pa	3	6	6	+3	6	0
Pawtucket, R. I	3	6	3	0		
Providence, R. I	3	6	6	+3	6	0
Charleston, S. C	4		4	0	4	0
Memphis, Tenn	4	4	4	0	4	0
Houston, Tex	2	2	2	0		
San Antonio, Tex	2	2	2	0	6	+4
Salt Lake City, Utah	4	4	2	−2	4	+2
Norfolk, Va	2		3	+1	3	0
Wheeling, W. Va	6	6	6	0	5	−1
Milwaukee, Wis	3	6	6	+3	6	0

[1] Rollins, Frank. School Administration in Municipal Government. New York, The Macmillan Company, 1902, p. 24.

The terms of school board members should overlap. If the terms of all or of even a majority of the members expire at the same time, an entirely new board which knows little about the policies of previous boards may be elected. Under such circumstances the board may through ignorance of conditions ignore existing policies and adopt entirely new ones, thus tending to bring about revolutionary rather than evolutionary changes. The modal practice in cities having a

population of 100,000 or more is for the terms of 3 board members and in cities having a population of 30,000 to 100,000 for the terms of 2 or 3 board members to expire at the same time (table 12).

Table 12.—*Number and percentage of cities choosing a specified number of school board members at a time*

Number of members chosen at a time	Cities of 100,000 or more		Cities of 30,000 to 100,000 population		Number of members chosen at a time	Cities of 100,000 or more		Cities of 30,000 to 100,000 population	
	Number	Percent	Number	Percent		Number	Percent	Number	Percent
1	2	3	4	5	1	2	3	4	5
1	6	8.0	23	13.0	6	3	4.0		
1 or 2	7	9.4	16	9.0	7			1	.6
2	7	9.4	34	19.2	8			1	.6
2 or 3	16	21.3	48	27.1	9	1	1.3	1	.6
3	18	24.0	38	21.5	10			1	.6
3 or 4	7	9.3	1	.6	11	1	1.3		
4	5	6.7	7	3.9					
5	4	5.3	6	3.3	Total	75	100.0	177	100.0

Organization

Boards of education in their organization meetings appoint a president and a secretary and in some instances a treasurer. Many boards of education also organize by appointing several standing committees.

President of board.—The president of the city school board is usually elected by the members of the board. In a few cities the mayor is ex officio president of the board and in a few other cities the president is elected by the people (table 13).

Table 13.—*Number and percentage of cities using method indicated for selecting president of board of education, 1917, 1927, and 1940*

Method	Cities having a population of 100,000 or more						Cities having a population of 30,000 to 100,000					
	1917		1927		1940		1917		1927		1940	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
1	2	3	4	5	6	7	8	9	10	11	12	13
Elected by board	40	95.2	50	94.3	75	93.8	126	94.0	123	89.8	181	91
Mayor ex officio	2	4.8	2	3.8	5	6.2	6	4.5	6	4.4	6	3
Elected by people			1	1.9			2	1.5	8	5.8	12	6
Total	42	100.0	53	100.0	80	100.0	134	100.0	137	100.0	199	100

In a large majority of cities the school board president is elected for a term of only 1 year. In a few cities he is elected for an indefinite time (table 14). By electing the president for only 1 year an opportunity is given for passing the presidency around among the

various members of the board, which is a procedure that may be questioned, since only the board member best qualified for the position should be selected as president of the board.

Table 14.—*Number and percentage of cities in which president of board is elected for number of years indicated, 1917, 1927, 1940*

Length of term in years	Cities having a population of 100,000 or more						Cities having a population of 30,000 to 100,000					
	1917		1927		1940		1917		1927		1940	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
1	2	3	4	5	6	7	8	9	10	11	12	13
1	45	88	43	84	66	84	114	85	111	81	157	80
2	3	6	4	8	8	10	16	12	22	16	27	13
3							1	1	3	2	6	3
4	1	2					2	2	2	1	3	2
5												
6	1	2	4	8	2	3					1	1
Indefinite	1	2			2	3					2	1
Total	51	100	51	100	78	100	133	100	138	100	196	100

The efficient working of a school board depends to a very great extent upon the president, who should be a person capable of presiding over a deliberative body. In those cities in which the school board conducts its business with dispatch the president knows and applies the ordinary rules of parliamentary procedure. A board may waste time if its president fails to enforce the simplest parliamentary rules and if he permits members to speak without being recognized and upon subjects not before the board. An order of business is necessary and there should be no deviation from it except for good reason. Too often the president of the board is considered as having functions that he does not have. Not infrequently teachers, parents, and others appeal to the board president for decisions on certain matters, but he legally has no more right to make decisions than has any other member of the board. His chief function is to preside at board meetings and to sign such papers as he is authorized by law or board action to sign.

Secretary.—In a majority of cities the board of education elects someone not a member of the board as secretary. This is the case in 82 percent of the cities having a population of 100,000 or more, and in 59 percent of the cities having a population of 30,000 to 100,000. In some cities the superintendent of schools serves as secretary and in some as a member of the board (table 15).

Since there is a vast amount of work for the school board secretary in cities having a population of 30,000 or more, it would seem that the school board secretary should be someone other than the superintendent of schools. If, however, the superintendent is made secre-

tary, he should be given such assistance as to make it unnecessary for him to perform the clerical duties assigned the secretary.

Table 15.—*Number and percent of cities in which certain persons serve as secretary of the board of education*

Person serving as secretary	Cities having a population of 100,000 or more		Cities having a population of 30,000 to 100,000	
	Number	Percent	Number	Percent
1	2	3	4	5
Superintendent of schools	3	3	31	16
Board member	12	15	49	25
Neither superintendent nor board member	64	82	115	59
Total	79	100	195	100

Treasurer.—In 34 of 75 cities having a population of 100,000 or more reporting, the city treasurer handles the school funds; in 9, the county treasurer; in 4, a bank or trust company acts as treasurer; in 7, a member of the board; and in 21, an individual not a member of the board. In 74 of 196 cities having a population of 30,000 to 100,000 reporting, the city treasurer and in 27 the county treasurer handles the school funds; in 24 a bank or trust company acts as treasurer, in 24 a board member, and in 47 an individual not a member of the board (table 16).

Table 16.—*Number and percentage of cities in which certain persons acted as treasurer of school funds in 1940*

Person acting as treasurer	In cities having a population of 100,000 or more		In cities having a population of 30,000 to 100,000	
	Number	Percent	Number	Percent
1	2	3	4	5
City treasurer	34	46	74	38
County treasurer	9	12	27	14
Bank or trust company	4	5	24	12
Board member	7	9	24	12
Individual not a member of board	21	28	47	24
Total	75	100	196	100

Standing committees.—When boards of education were composed of many members and before the advent of professionally trained men and women for executive positions in school systems, most boards of education operated with a large number of standing committees. According to a publication of the Bureau of Education in 1885 it appears that boards of education in several cities at that time operated with a large number of committees; for example, the Cincinnati Board of Education had 50-some committees and the Chicago Board

had about 70 committees. As boards of education became smaller and as executives in the various departments were employed, boards of education began to abolish standing committees or to reduce them in number. It became evident that the functions of many of the committees, such as those on the promotion of pupils, courses of study, school attendance, elementary and secondary school discipline duplicated the functions of the superintendent and of his assistants. It was discovered by some boards that the superintendent could make recommendations to the entire board just as easily as he could to a committee; that when recommendations were made to the entire board each member had an opportunity to consider the recommendations; and that the board ceased to act as a rubber stamp to committee reports. At times when important matters of policy such as the consideration of a school building program or methods of financing the schools arise, a temporary committee may be desirable to make in cooperation with the superintendent a study of the situation and to submit to the entire board for its careful consideration a report containing all the facts.

Practically every city school survey commission has recommended that standing committees be eliminated or greatly reduced in number. The chief objection to standing committees as seen by school survey commissions in general is that the work of almost every committee takes it into a field which requires a degree of expert technical knowledge which the members of the committee cannot be expected to have. It is pointed out in all the school survey reports that a board of education can be of greatest service if it confines its functions to selecting school executives, determining policies, authorizing new projects, securing funds, and adopting school budgets, and if it acts as a deliberative body rather than as a body merely to approve the action of committees.

Although authorities on school administration have for years been recommending that standing committees be abolished or reduced in number, a majority of the city boards of education still operate with standing committees. In 78 cities having a population of 100,000 or more reporting, 48, or 61.5 percent, of the boards of education have standing committees; and in 200 cities having a population between 30,000 and 100,000, 131, or 65.5 percent, of the boards of education operate with standing committees.

In all there are more than 30 different kinds of committees reported as operating in the cities having a population of 30,000 or more. In most of the cities in which the boards of education have committees, there is a committee on finance, one on buildings and grounds, and one on supplies. In addition to these, some boards have one or more of the following committees: Courses of study, textbooks, teachers, attendance, library, athletics, grievances, vocational education, eve-

ning schools, executive, public relations, elementary schools, high schools, janitors, cafeterias, etc.

Although the majority of the boards of education still have standing committees, the tendency has been to reduce the number of such committees. The average number of committees of boards of education in cities having a population of 100,000 or more reporting decreased from 5.3 in 1917 to 3.4 in 1927 and to 3 in 1940. The percentage of boards of education having more than 3 committees decreased from 70.7 in 1917 to 52.7 in 1927 and to 38.5 in 1940.

In cities having a population of 30,000 to 100,000 reporting, the average number of committees decreased from 5.4 in 1917 to 4.1 in 1927 and to 3.5 in 1940. The percentage of boards having more than 3 committees decreased from 81.7 in 1917 to 57.1 in 1927 and to 50 in 1940.

Table 17.—*Number and percentage of city school systems reporting in 1917, 1927, and 1940 as having specified numbers of standing committees*

Number of committees	Cities of 100,000 or more population						Cities of 30,000 to 100.000 population					
	1917		1927		1940		1917		1927		1940	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Per cent
1	2	3	4	5	6	7	8	9	10	11	12	13
0	3	7.3	21	38.2	30	38.5	12	9.1	35	25.0	69	34.5
2	0	0	1	1.8	8	10.3	4	3.1	8	5.7	9	4.5
3	9	22.0	4	7.3	10	12.8	8	6.1	17	12.2	22	11.0
4	5	12.2	6	10.9	5	6.4	24	18.3	17	12.2	25	12.5
5	5	12.2	10	18.2	9	11.6	18	13.7	14	10.0	23	11.5
6	5	12.2	5	9.1	5	6.4	20	15.3	16	11.4	11	5.5
7	5	12.2	2	3.6	3	3.8	16	12.2	9	6.4	11	5.5
8	4	9.7	4	7.3	4	5.1	13	10.0	9	6.4	16	8.0
9	1	2.5	1	1.8	1	1.3	6	4.6	9	6.4	6	3.0
10 or more	4	9.7	1	1.8	3	3.8	10	7.6	6	4.3	8	4.0
Total	41	100.0	55	100.0	78	100.0	131	100.0	140	100.0	200	100.0
Average	5.3		3.4		3		5.4		4.1		3.5	
Percent having more than 3 committees	70.7		52.7		38.5		81.7		57.1		50.0	

Of the 30 school systems in cities having a population of 100,000 or more that do not have standing committees, 24 report that committees are appointed from time to time for special purposes, and of the 69 school systems in cities having a population of 30,000 to 100,000 that do not have standing committees, 58 report that special committees are appointed. Since the data for 1917, 1927, and 1940 in table 17 are not for the same number of cities, data for the same cities reporting in 1917, 1927, and 1940 are presented to show what the trend with respect to the number of standing committees has been among the same cities reporting at each date (table 18).

From 1917 to 1927 there was a strong trend toward the reduction of the number of standing committees in each population group. From

1927 to 1940 the trend in cities having a population of 100,000 or more was less marked than the trend for 1917 to 1927, and in cities having a population of 30,000 to 100,000 the trend toward fewer committees continued at about the same rate as from 1917 to 1927.

Table 18.—*Number and percentage of same school systems reporting number of committees in 1917, 1927, and in 1940*

Number of committees	Cities of 100,000 or more population						Cities of 30,000 to 100,000 population					
	1917		1927		1940		1917		1927		1940	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
1	2	3	4	5	6	7	8	9	10	11	12	13
0	3	8.8	12	35.3	8	23.5	4	6.5	12	19.3	19	30.7
2	0	------	1	2.9	5	14.7	1	1.6	4	6.4	3	4.8
3	6	17.7	3	8.9	6	17.7	4	6.5	5	8.7	9	14.5
4	4	11.7	4	11.7	4	11.7	13	21.0	7	11.2	7	11.2
5	5	14.7	5	14.7	4	11.7	11	17.7	7	11.2	9	14.5
6	4	11.7	4	11.7	1	3.0	13	21.0	12	19.2	5	8.1
7	5	14.7	1	3.0	1	3.0	7	11.3	6	9.6	4	6.5
8	4	11.7	3	8.9	4	11.7	5	8.0	4	6.4	2	3.3
9	1	3.0	0	0	0	0	2	3.2	4	6.4	3	4.8
10 or more	2	6.0	1	2.9	1	3.0	2	3.2	1	1.6	1	1.6
Total	34	100.0	34	100.0	34	100.0	62	100.0	62	100.0	62	100.0
Average	5.6		3.6		3.5		5.3		4.5		3.5	
Percent having more than 3 committees	73.5		52.9		44.1		85.4		65.5		50.0	

In general, the larger the board the more committees it has (table 19). By relating statistically the size of the board and the number of committees, a positive correlation coefficient of 0.46 is obtained.

Table 19.—*Number of standing committees in relation to the number of school board members in 270 cities of 30,000 or more population reporting*

Number of committees	Number of cities (by number of board members)							
	3	5	6	7	8	9	More than 9	Total
1	2	3	4	5	6	7	8	9
0	10	41	8	22	1	7	------	89
1	------	6	1	2	------	------	1	10
2	------	3	2	6	------	5	1	17
3	------	7	1	10	------	10	2	30
4	------	11	1	11	1	4	8	36
5	------	10	3	6	------	9	4	32
6	------	1	3	5	1	3	3	16
7	------	1	1	9	1	1	1	14
8	------	1	------	2	------	6	1	10
9	------	------	------	------	------	6	1	7
10 or more	------	1	1	1	------	2	4	9
Total	10	82	21	74	4	53	26	270
Percent having no committees	100	50.0	38.1	29.8	25.0	13.2	0	32.8
Percent having 1–3 committees	0	19.5	19.0	24.3	0	28.3	15.4	21.4
Percent having more than 3 committees	0	30.5	42.9	45.9	75	58.5	84.6	45.8

Number of Board Meetings

The number of regular meetings of city boards of education a year presents a considerable range in each group of cities. In cities having a population of 100,000 or more the practice is to hold a greater number of regular meetings a year than in cities having a population of 30,000 to 100,000, the median number in the first named group being 17 and in the latter named group 13 (table 20).

Table 20.—*Number and percentage of boards of education holding the number of regular meetings indicated during the year*

Number of regular meetings	Cities having a population of 100,000 or more		Cities having a population of 30,000 to 100,000	
	Number	Percent	Number	Percent
1	2	3	4	5
1–5	1	1.3	5	2.8
6–10	4	5.3	12	6.6
11–15	30	39.5	119	65.8
16–20	8	10.5	10	5.5
21–25	25	32.9	31	17.1
More than 25	8	10.5	4	2.2
Total	76	100.0	181	100.0
Median number of meetings	17		13	

In addition to the regular meetings, practically every board held one or more special meetings a year, which brings the median number of meetings of boards of education in cities having a population of 100,000 or more population up to 23; and in cities having a population of 30,000 to 100,000, up to 19. In each of several cities there was a total of more than 40 board meetings a year (table 21).

Table 21.—*Number and percentage of boards of education holding the total number of meetings indicated*

Total number of meetings	Cities having a population of 100,000 or more		Cities having a population of 30,000 to 100,000	
	Number	Percent	Number	Percent
1	2	3	4	5
0–10	1	1.3	3	1.7
11–15	14	18.7	54	28.9
16–20	13	17.3	40	22.9
21–25	18	24.0	37	20.5
26–30	12	16.0	19	10.5
31–35	6	8.0	10	5.5
36–40	3	4.0	11	6.1
More than 40	8	10.7	7	3.9
Total	75	100.0	181	100.0
Median number of meetings	23		19	

Just how many meetings a board of education should hold during a year no one can say definitely, but not more than 2 regular meetings a month would appear to be sufficient to transact all the regular business of the board. The number of special or called meetings depends largely upon circumstances. If, for example, a board is launching upon a school building program it may be necessary to call a number of special meetings in order to give the matter careful consideration. But, in general, there should be no or at least very few special meetings of boards of education. If there are many such meetings it would seem that the board is giving undue attention to routine matters that might be disposed of in a few minutes or to matters that need never come before the board but could be disposed of by the superintendent and his staff.

The meetings of boards of education in the cities reporting are as a rule open to the public. In only 3 cities having a population of 100,000 or more reporting, and in only 7 of 186 cities having a population of 30,000 to 100,000 are some of the board meetings not open to the public. The closed ones are usually meetings of the committee of the whole.

Compensation

In only 11 of 76 cities having a population of 100,000 or more and in only 14 of 182 cities having a population of 30,000 to 100,000 reporting do board members receive a salary. The salaries reported are, however, nominal ones ranging from $100 to $1,200 a year. In 4 cities having a population of 100,000 or more and in 7 cities having a population of 30,000 to 100,000 reporting, board members are paid a per diem ranging from $2 to $10 for attending a limited number of board meetings.

That members of boards of education should serve without compensation is generally considered more desirable than for them to receive pay for service on such boards. Occasionally, however, some layman advances the idea that school board members should be paid a salary. The few school survey reports that comment on salaried boards of education condemn the practice in the school systems surveyed. The following comment in one of the school surveys, that of Memphis, Tenn., expresses in general the recommendations in the other survey reports regarding the payment of salaries to school board members:

> Unfortunately, even the paying of but a nominal fee attracts some who but for it, would not be interested in the work of the board. Obviously, people who have no more interest in the schools than this should not be permitted to take offices. On the other hand, experience shows that the public-spirited citizen who has the welfare of the schools at heart will not be deterred from serving on the board of education through a failure to pay a salary or fees.

If it were the function of boards of education to execute the board's policies through the members of the board, then some consideration might be given the few proposals that its members be paid a salary. Since the direct management of the schools belongs to paid experts, the superintendent and his assistants, the payment of a salary to school board members so that they may give practically their entire time to school matters would substitute in large part lay for professional administrative services.

Relationships

To city officials.—Authorities on school administration are in agreement that city boards of education should be fiscally independent; that is, that they should have power to levy taxes for school purposes or to prepare budgets within statutory limits without consulting some municipal body or officer, as the mayor, city council, or a board of estimate. Many authorities on municipal government, however, claim that boards of education should be fiscally dependent upon the city officials, just as are certain municipal boards.

Those persons who advocate fiscally independent school boards claim that school matters are of such importance and so different from municipal matters as to make it necessary for boards of education to determine what the school budget should be; that since the school budget, which in financial terms represents the boards educational policy, may be revised by the city officials, such officials and not the board of education determine educational policies; and that since public education is a State and not a municipal function, the municipal officials should have no part in deciding how much should be spent for education. An authority on school administration has expressed the generally accepted views of school administrators regarding fiscally independent boards of education, as follows:[5]

> No principle of either law or sound taxation is violated in those States in which the legislatures delegate to boards of education the duty of determining the amount of money required for public-school purposes and then of levying it. Such an arrangement is made in order to give effect to the State law which safeguards public education by making it a State function and so removing it, as the court has said, from the mismanagement and the taint of local municipal politics, and such an arrangement is necessary if it is to be in fact as well as in theory set free from bondage by local maladministration. The school system which must go to the city hall for its appropriations of money to run the schools will inevitably find its schools conducted by the city hall even though the laws expressly state that the control and administration of all school affairs is vested in a board of education, which is a State body created and empowered to conduct the schools and to keep their interests separate from all other municipal interests and business.

[5] Moore, Ernest C., Indispensable Requirements in City School Administration. American School Board Journal, May 1913, p. 13.

Those persons who believe that boards of education should be fiscally dependent, on the other hand, claim that there should not be two taxing bodies in the same city, since the two operating independently of each other may together spend more money than the city can well afford; that the affairs of a city should be conducted on business principles thus making it inadvisable to divide responsibility between two different bodies; and that it would be just as logical to have the board of health or any other municipal body fiscally independent of the city council or commission.

Such, in general, are the views held regarding fiscally independent and fiscally dependent boards of education. In practice 34, or 43 percent, of 78 boards of education in cities having a population of 100,000 or more are required to submit their annual budgets to some municipal body or official. In 10 of the 34 cities the school budget is submitted to the council or commission, in 11 to the mayor, and in 13 to a board of estimate or similar body. In 10 cities the budget may be revised item by item, and in 24 only the total amount.

In 70, or 38 percent, of 183 cities having a population of 30,000 to 100,000 reporting, boards of education submit their annual budgets to the city officials. In 15 of the 70 cities the school budget is submitted to the mayor, in 30 to the council or commission, and in 25 to a board of estimate. In 9 of the 70 cities the budget may be revised item by item, in 50 only the total amount, and in 11 cities the budget may not be revised by the body or official to whom it is submitted. Thus in the 183 cities only 59, or 32 percent, of the boards of education are really fiscally dependent upon city officials.

In those cities in which some municipal body may revise item by item the estimates of the board of education, it would seem that such municipal body, and not the board of education, may determine school policies by approving or disapproving the expenditures of funds for purposes that the board of education deems necessary. If, as claimed by some persons, the school budget should be reviewed by a municipal body, such body should have authority to revise only the total amount. The board of education itself should decide where reductions in its budget can be made with least detriment to the schools.

There is in some cities a relationship between the board of education and the city not only in the matter of the school budget but also in the matter of the purchasing of school sites and the contracting for new school buildings. In 61 of 78 cities having a population of 100,000 or more reporting, the school board purchases school sites, and in 17 cities schools sites are purchased by the city council or some other municipal body. In 65 cities the board contracts for new buildings, and in 13 the city council or other municipal body. In 59 of these

cities the title to school property is vested in the board of education or school district, and in 19 it is vested in the city.

In 161 of 193 cities having a population of 30,000 to 100,000 reporting, the school board purchases school sites, and in 32 sites are purchased by some municipal body. In 167 of the cities the school board contracts for school buildings, and in 36 the council or other municipal body. In 151 of the 193 cities the title to school property is vested in the board of education or school district, and in 42 in the city.

If boards of education are to be held responsible for providing an efficient school system it would seem that the selection of school sites and the erection of school buildings are matters that belong to boards of education rather than to municipal boards.

To the superintendent.—In a majority of the cities the boards of education make the school superintendents their executive officers in all matters connected with the administration of their respective school systems, all other officers being responsible to the board through the superintendent of schools. This is the case in 53, or 67 percent, of 79 cities having a population of 100,000 or more; and in 156, or 83 percent, of 187 cities of 30,000 to 100,000 population reporting. In 13 of the first named group of cities the business manager; in 5 both the business manager and the superintendent of buildings; in 5 the superintendent of buildings; and in 3 both the superintendent of buildings and supplies are directly responsible to the board for the administration of matters within their respective fields. In 13 of the second named group of cities the business manager, in 9 both the business manager and the superintendent of buildings, and in 12 the superintendent of buildings are responsible directly to the board of education.

Exactly comparable data to show trends from 1927 to 1940 with respect to the relation of the board to the superintendent of schools and to the business manager are not available, but such figures as are available indicate that the trend has been toward placing all administrative matters in the hands of the superintendent of schools. For example, in 41 percent of the cities having a population of 100,000 or more reporting in 1927, the business manager was directly responsible to the board of education; and in 1940, 23 percent of such officers were directly responsible to the board in cities reporting.

Some years ago it was thought that educational and business matters were entirely distinct and that the superintendent of schools should be concerned only with what were considered educational administration and supervision. There thus grew up in some cities a dual system of administration, the superintendent being given charge of educational matters, and the business manager, or the secretary of the board, of business affairs. It is now generally thought that in those cities in

which the business manager is directly responsible to the board and not to the board through the superintendent of schools, a principle of school administration is violated since educational and business problems overlap and intermingle. For example, the planning of school buildings and the selection of supplies and equipment are as much educational as business problems.

The superintendent being the executive officer of the board of education, the relationship that should exist between the board of education and the superintendent should be similar to the relationship that exists between a board of bank directors or a board of any private corporation and its executive officer. The stockholders of a private corporation elect a board of directors to have control of the enterprise. The directors knowing but little concerning its technical aspects confine their work to a consideration of policies, and upon the adoption of certain policies place their execution in the hands of the chief executive officer and hold him responsible for results. The chief executive not only executes the policies but is called upon for recommendations as to the policies that should be adopted.

If a proper relation is to exist between the board of education and the superintendent of schools the following, it is generally agreed, are some of the powers and duties that should be conferred upon the superintendent:

1. To serve as the chief executive officer of the board of education in its conduct of the schools and of other agencies and activities under its control.
2. To attend all meetings of the board and of its committees and to exercise the right to speak on all matters before the board or committees, but without vote.
3. To nominate, as needed, assistant superintendents, business managers, supervisors, principals, teachers, custodians, and all other employees authorized by the board of education.
4. To recommend for suspension or discharge any employee whose services are so unsatisfactory as to warrant such action, subject to approval by the board after a hearing in the case.
5. To recommend, after conferring with supervisors, principals, teachers, and such other persons as the superintendent may designate, textbooks and all other supplies and appliances needed for the activities of the schools or other agencies under the control of the board.
6. To prepare or have prepared for his approval the content of each course of study authorized by the board of education.
7. To determine the boundaries of school attendance districts, subject to the approval of the board.
8. To have general supervision of the operation and maintenance of the school plant and equipment and the purchase and storage and distribution of textbooks and other supplies.
9. To direct the supervision of the elementary and high schools, of all special schools, and of all extracurriculum activities.
10. To assign principals, custodians, and other employees to the schools and teachers to schools and grades, and to transfer them according to the needs of the service.

11. To prepare, or to have prepared for his inspection, the school budget showing in detail the amount of funds necessary to meet the estimated needs for the ensuing year and submit it to the board for consideration and action.
12. To approve and direct all purchases and expenditures within the limits of the detailed budget approved by the board and to make monthly reports of such expenditures to the board.
13. To keep the board informed as to school building needs and to recommend plans for new buildings and for alterations of old buildings.
14. To grant the use of schoolrooms, auditoriums, and gymnasiums, for such community purposes and under such terms as the school board may establish.
15. To make monthly and annual reports to the board on the conditions and needs of the schools.
16. To prepare for the approval of the board bylaws, rules, and regulations needed for the direction and control of the schools.

As previously stated, school superintendents should make recommendation to the board of education on various matters, but this does not mean that the board should always adopt the recommendation of the superintendent. It is the function of the board to consider carefully every proposal presented to it and to adopt only such proposals as in its judgment seem desirable and feasible. No school board should accept recommendation simply because they have been presented, or in other words it should not act as a "rubber stamp." This is not the democratic way if the schools are to be under the control of the people through their representatives—the members of the board of education.

Summary

The following is a summary of the data presented in the preceding pages to show what the practices are in a majority of cities having a population of 30,000 or more reporting:

1. In 74 percent of the cities boards of education are elected by popular vote.
2. In 86 percent, boards of education are elected or appointed from the city at large.
3. Of the cities in which school board members are elected:
   (a) In 62 percent, the candidates are nominated upon petition of a certain number of electors.
   (b) In 65 percent, board members are elected at a general election.
   (c) In 81 percent, board members are elected on a nonpartisan ballot.
4. In 85 percent, boards of education are composed of from 5 to 9 members, inclusive.
5. In 64 percent, board members are elected or appointed for a term of 4 or more years.
6. In 92 percent, the school board president is elected by the board.
7. In 81 percent, the school board president is elected for a term of 1 year.
8. In 65 percent, the secretary of the board is not a member of the board.
9. In 53 percent, the county or city treasurer acts as treasurer for the board of education.
10. In 64 percent, boards of education operate with standing committees.
11. In 91 percent, school board members serve without pay.
12. In 64 percent, boards of education are fiscally independent of the city officials.

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BIENNIAL SURVEY OF EDUCATION IN THE UNITED STATES

1938–40

LIBRARY SERVICE

VOLUME I

CHAPTER VIII

FEDERAL SECURITY AGENCY

U. S. OFFICE OF EDUCATION

BIENNIAL SURVEY OF EDUCATION

IN THE UNITED STATES

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LIBRARY SERVICE

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VOLUME I

CHAPTER VIII

By

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LIBRARY SERVICE, 1938–40

Introduction

Library development at any given time is largely the resultant of social forces, economic resources, and individual ideas and activities. These factors, furthermore, are usually not ones which have sprung suddenly into being, but rather are forces which have been operating over periods of considerable length. Periodic surveys serve, therefore, to fix attention on the various conditions affecting library development, to analyze and interpret these forces, and to indicate possible remedial measures and future trends.

As far as libraries are concerned, this surveying task was well performed by two publications which appeared early in the biennium and covered the situation up to 1938. One was the monograph, *Library Service*, prepared by Carleton B. Joeckel [1] for the Advisory Committee on Education and the other was the *Geography of Reading; A Study of the Distribution and Status of Libraries in the United States*, by Louis R. Wilson.[2] Based on objective data, these works not only assembled significant facts on the holdings, financial resources, and services of all types of libraries but presented the library as an institution of vital social significance and as an essential factor in the educational process, both formal and informal. Each writer stressed the problem of equalizing library service throughout the Nation and of coordinating existing library facilities; and also emphasized the importance of libraries becoming a matter of State and Federal concern.

Although the two works just mentioned have filled, and are still filling to a considerable extent, the need for a comprehensive survey of libraries, nevertheless it may be helpful as the 1940's begin, to record some of the general activities and developments which have taken place since the publications appeared in 1938. This survey, therefore, is concerned with considering (1) certain general conditions and activities affecting all fields of librarianship and (2) describing some specific conditions and activities in school, college, public, and special libraries.

[1] Joeckel, Carleton B. Library service. Advisory Committee on Education, Staff study No. 11. Washington. U. S. Government Printing Office, 1938. 107 p.

[2] Wilson, Louis R. Geography of reading. Chicago, American Library Association and the University of Chicago Press, 1938. 481 p.

In order to give an idea of the extent of the problem, it may be well to present some statistical facts regarding these various types of libraries. According to the latest data available, the number in round figures is as follows:

Type of Library	*Number*
School—centralized libraries with over 1,000 volumes	6, 400
College and university	1, 600
Public	6, 500
Special	1, 500
State	135
Federal	130
Total	16, 265

General Trends and Activities

Reemphasis of Educational Objectives

An important trend, noted when professional literature is examined, is the one towards reemphasizing and restating the educational objectives of libraries. College and school librarians, for example, are stating that emphasis must be placed not upon books themselves but upon the use of books and their effects on the students. From a group of public librarians comes this recent statement: "Public libraries should be truly educational organizations and not mental playgrounds." Similar statements testify to the efforts which are being made by the different types of libraries to bear out the introductory sentence of the report on library service made by the Advisory Committee on Education:[3] "In the United States today, it is accepted as axiomatic that the library is an essential and integral part of the educational system of the Nation."

Policy on Controversial Issues

Closely allied with this educational responsibility has been the one placed upon libraries by the spread of intolerance, censorship, and war. In order to orient themselves in the crisis, librarians formulated at the close of 1939 a so-called *Library's Bill of Rights*,[4] adapted in large part from the one previously issued by the Des Moines Public Library. The basic policies are stated as follows:

1. Books and other reading matter selected for purchase from the public funds should be chosen because of value and interest to people of the community, and in no case should the selection be influenced by the race or nationality or the political or religious views of the writers.
2. As far as available material permits, all sides of questions on which differences of opinion exist should be represented fairly and adequately in the books and other reading matter purchased for public use.

[3] Joeckel. Op. cit., p. 1.

[4] American Library Association. Library's bill of rights. Chicago, The Association, 1939. 1 p.

3. The library as an institution to educate for democratic living should especially welcome the use of its meeting rooms for socially useful and cultural activities and the discussion of current public questions.

Commenting upon the task confronting librarians in the present world situation, Archibald MacLeish, Librarian of Congress, recently stated: "We can either educate the people of this Republic to know or we can watch the people of this Republic trade their democratic culture for the ignorance and prejudice and the hate . . ." Speaking before a national conference of librarians, he declared that librarians must become active and not passive agents of the democratic process.[5]

Extension and Improvement of Library Service

Stimulated by the report of the Advisory Committee on Education on library service, both the national and the State library associations have continued their efforts to extend and improve library service in all areas of the Nation. This report brought home to those interested in libraries the fact that many persons are still without library service, that much inequality exists in the service and in the ability to support it, that 50 percent of our public libraries are operating on annual incomes of less than $1,000, and that our libraries have developed largely as a result of individual efforts.

Plans embodying certain principles for State-wide library service have been drawn up, and attention paid to the means of strengthening the State library agencies. The library associations have accordingly pressed for State and Federal aid during the 2 years of the biennium. The need for larger administrative units of service also has been emphasized.

Personnel

Accredited library schools.—During the biennium, two more library schools have been accredited by the A. L. A. Board of Education for Librarianship: One at the University of Southern California and the other at the Texas State College for Women. Inasmuch as one institution, Hampton Institute, previously accredited, was discontinued in June 1939, the total of accredited library schools in the United States is now 28. Of these, 20 are requiring a bachelor's degree for entrance; 5 are accredited for the training of school librarians. According to the latest data available, 18,198 degrees, certificates, or diplomas had been awarded by these library schools in the United States up to July 1, 1939.

In-service training.—Increased attention is being given to further training of professional librarians already on the job. With short

[5] MacLeish, Archibald. Librarian and the democratic process. American Library Association Bulletin, 34: 385–388, 421, June 1940.

vacation periods prevailing for librarians, additional training for those in service has been a problem. To meet this need, library schools in growing numbers have sponsored planned institutes of 1 or 2 weeks duration. In 1939, no less than nine such institutes were conducted; three were on school libraries, one on library work with children, two on county and regional libraries, one on adult education, one on public libraries, and one on book selection. In addition, Washington University held an institute on public library service; Chautauqua Institution, one on service to children and young people; and the A. L. A. Board on Salaries, Staff, and Tenure, one on library personnel problems.

During 1938–39, one of the first experiments with library internship was made in the T. V. A. Under the plan, a graduate from an accredited library school was appointed to the T. V. A. staff for 11 months on a regular salary and worked under the supervision of an experienced librarian. In addition, time was allowed for planned study, so that a thorough understanding of the principles underlying the library could be acquired. The results of this training program as a supplement to the regular library school courses were scrutinized carefully.

In order to ascertain what training agencies for library service were needed in Indiana, the Board of Education for Librarianship made a survey, considering such points as: Library services actually being rendered; additional services desirable and possible; qualifications of present library personnel; their prospects for advancement; and the existing Indiana training agencies for library service. On the basis of these facts and the estimated annual turn-over, specific recommendations have been made regarding the number and kind of training agencies required.

Classification of library positions.—To meet the need resulting from the increased interest in civil service, in certification and in State aid, a board of librarians after a year's work, issued a model schedule of classification of positions in public library service.[6] Similar plans have been in operation in a number of large cities, and have been formulated by several State library associations, but this one goes further in scope, for besides classifying the various positions, duties, types of tasks, and rates of pay, and specifying qualifications required of library personnel, it sets up suggested standards for libraries. It is hoped that the model plan, when adapted to local needs, will aid in promoting better standards and higher efficiency of service. In addition to classification plans for municipal public libraries, similar ones are under way for the libraries of the institutions of higher education, and later those for other types of libraries will be undertaken.

[6] American Library Association. Board on salaries, staff, and tenure. Classification and pay plans for municipal public libraries. Chicago, The Association, 1939. 189 p.

Staff welfare.—In both the national and State library associations, boards and committees have paid increased attention to library staff welfare. Studies have been completed on the cost of living for library assistants in the various sections of the country; consideration has been given to the establishment of credit unions and hospitalization plans. In addition, the Board on Salaries, Staff, and Tenure of the American Library Association completed and published a model scheme of service[7] intended to serve as a guide in advancing satisfactory employee-administrator relationships.

During the American Library Association conference in 1940, an employer-employee clinic to discuss personnel problems was held early each morning before the regular sessions. The topics considered were: Classification plans; service ratings; internal relationships; and working conditions. In order to encourage frank discussion, the employers met in one section and the employees in another, with coordinators summarizing for each section the trends and results of the discussion in the other.

With the thesis that "the effectiveness of a library's service is determined in large part by the quality of its staff," a recent publication, *Personnel Administration in Public Libraries*, by Clara W. Herbert,[8] covers not only desirable working conditions of the staff but also sets forth principles and methods of careful staff selection, training for advancement, and means of developing a progressive service.

Research and Studies in Librarianship

In his *Geography of Reading*, Louis R. Wilson stated: "One of the great limitations of librarianship today is that it lacks a fundamental body of data as well as of special studies which can be compared exactly and applied to the solutions of problems by which it is beset."

Some idea of the extent to which this limitation is being attacked may be seen by examining the list of graduate theses compiled at intervals by Douglas Waples and published in the *Library Quarterly;* the listing of studies in *Library Literature*, the annual compilation of books, periodicals, and pamphlets in the field of librarianship; and the *Bibliography of Research Studies in Education*, which contains many theses on library subjects.

One important undertaking, without connection with a library school, has been the study of cost accounting in public libraries[9] initiated by William E. Marcus, a trustee of the Montclair Public

[7] American Library Association. Organization and personnel procedure of the ---------- library—a suggested plan. Chicago, The Association, 1940. 36 p.

[8] Herbert, Clara W. Personnel administration in public libraries. Chicago, American Library Association, 1939. 204 p.

[9] Baldwin, Emma V. *and* Marcus, William E. Library costs and budgets; a study of cost accounting in public libraries. New York, Bowker, 1941. 201 p.

Library, and participated in by 37 cooperating libraries located in cities ranging in population from 25,000 to 150,000. The purpose of this survey is to supply librarians, trustees, and appropriating bodies with a factual basis for determining operating costs; to provide a uniform basis for the comparison of libraries of the same general type; and to furnish statistical data which might prevent the continuance of unprofitable operations or services.

In the fall of 1939, a conference of librarians interested in research was called by the U. S. Commissioner of Education in Washington to discuss areas in which investigation was needed and to consider means of coordinating efforts and avoiding duplication. Among the needed studies and research, the conferees noted the following:

Studies of nonreaders.

Attitudes of populations, not only as regards reading but also towards social, economic, and other current problems.

Forces determining the demand for library service in the public library, the school, and the college.

Relations of libraries as social institutions to other institutions and agencies which perform functions related directly or indirectly to education.

Qualitative data in addition to the quantitative data on growth, service, finance, and users.

In connection with this matter of library research, the presidential address of Ralph Munn, before the American Library Association in the spring of 1940, contains this pertinent statement: [10]

> During recent years there has been a small but growing group of librarians . . . who have been concerned with research studies as a basis for determining library policies. They have not always had a full hearing from some of us busy librarians who have thought we could administer our libraries without academic aid. Now I am beginning to see more clearly that, if our libraries are to respond effectively to changing needs, we must have objective studies of every kind.

Uniform Reporting of Library Data

Progress has been made in the field of library reporting. Recent surveys have frequently commented on the serious lack of adequate and comparable library data. On the other hand, the reporting libraries have complained about the number of different statistical blanks which they are asked to fill out each year at various times. Often there has been little or no consistency in the definition of terms used.

In order to remedy the difficulty, a joint committee of librarians and U. S. Office of Education representatives during the biennium devised uniform blanks, one for public libraries and one for college and university libraries, which contained the basic data and could be used by all information-seeking agencies. As reports from many libraries indicate a greater facility in answering the questions, there

[10] Munn, Ralph. Fact versus folklore. American Library Association Bulletin, 34: 380–384, 422, June 1940.

is promise of securing through the uniform blank not only a higher percentage of returns but also more adequate and comparable data. It may be worth noting also that the National Committee on Municipal Accounting has accepted as standard the classification of finances on the public library form.[11]

Union Catalogs

Activity continued during 1938–40 in the matter of union catalogs, a cooperative undertaking of libraries in a given region or in a special subject field in order to facilitate use of their resources. To the union catalogs in Washington, D. C., Philadelphia, Cleveland, Chapel Hill and Durham in North Carolina, Nashville, and Denver, have been added the ones in Columbus, Ohio, and in Nebraska. This movement for the better coordination of the resources of printed materials has important implications for research and scholarship.

Microphotography

The advance of microphotography, as seen in the perfection of cameras for making the film and in the improvement and reduction in cost of the apparatus for reading the film, continued during 1938–40. It has aided in a number of problems always confronting librarians: Interlibrary loans, the acquisition of rare and out-of-print materials, and storage space. By the process of photography, it is possible to reproduce on film the pages desired as reference from an irreplaceable book.

The American Documentation Institute, a nonprofit organization, operating the bibliofilm service at the U. S. Department of Agriculture Library, has undertaken to reproduce not only extracts from rare and not readily available volumes but also research papers and theses essential to advanced students or scholars but not in sufficient demand to warrant their inclusion in the already crowded columns of professional and scientific journals. Among other institutions possessing film laboratories are The National Archives, the Library of Congress, and the University of Chicago.

Library Service at the Federal Level

The Library of Congress continued to perform important bibliographic and research services for the scholars and libraries of the country. The facilities of this institution for effective service were greatly enlarged by the occupation of the new annex. In addition, the completion of the Hispanic Room and the Whittall Pavilion for housing the Stradivari instruments and Tourte bows made available noteworthy cultural features. According to 1940 figures, the Library

[11] National Committee on Municipal Accounting. Standard classification of municipal revenues and expenditures. P. 102–103. 1313 East 60th Street, Chicago, National Committee on Municipal Accounting, 1939.

of Congress contains 6,102,259 printed books and pamphlets; 1,441,719 maps and views; 1,399,357 volumes and pieces of music; and 552,514 prints. About 6,500 different institutions, organizations, and individuals are now subscribing to the printed card service.

The Department of Agriculture Library, at the close of the biennium, reports a collection of nearly 300,000 volumes carefully selected to meet the special research and informational needs of the Department. In this library system are included 15 branch libraries and 3 subbranches serving the various bureaus, offices, and services but now coordinated under the direction of the Department librarian.

The Office of Education Library at present contains one of the largest collections in the field of education. In addition to serving the specialists on the staff, it also renders valuable service to teachers and administrators in the field. Its collections now number 275,000.

Encouraging development has occurred also in many of the other Federal libraries, indicating the value to Government agencies of organized collections of printed materials. During 1938–40 efforts were made by Federal librarians to have a council of Federal libraries established. This council, purely an advisory body, would aid in matters of policy and in the coordination of the various Federal libraries.

Following the report of the Advisory Committee on Education, congressional legislation was sought to provide Federal aid through State agencies for both school and public libraries; for the latter primarily in rural sections. Action has not yet been taken on the bills by the Congress.

In the U. S. Office of Education, a Library Service Division was established early in 1938 as a Federal unit to aid the development of libraries. This objective is to be attained through fact-finding and research in the field of librarianship; through fostering cooperation between schools and libraries; by assisting in the coordination of present facilities; and by aiding library participation in adult education.

Libraries have been benefited in no small measure by the lowered postal rates on books. This reduction, started in November 1938 by an Executive order of President Roosevelt and later extended until September 30, 1941, makes it possible to mail books at a flat rate of 1½ cents per pound, regardless of post zone. Legislation is pending before the Congress to make the rate permanent.

Literature Relating to Librarianship

The literature published by and about a profession is generally an important force in shaping the development of that profession. During the biennium, about 300 different books and pamphlets relating to the library profession were published. Furthermore, *Library Literature 1936–39,* an index to current books, pamphlets, and periodical literature relating to the library profession, contains for the

4-year period 1,748 pages of author and subject entries, arranged in double columns.

Although they should not be considered in any way as being a complete list of books on libraries published in the United States during 1938–40, the following titles may give some idea of the subjects covered:

BRANSCOMB, B. H. Teaching with books; a study of college libraries. Chicago, American Library Association, American Association of Colleges, 1940. 239 p.

An analysis of the problems which confront college libraries in attaining their educational objectives.

CARLSON, W. H. Development and financial support of seven western and northwestern State university libraries. Berkeley, Calif., University of California press, 1938. 106 p.

Includes the State universities of Idaho, Montana, Nevada, North Dakota, South Dakota, Utah, and Wyoming.

CHANCELLOR, J. M., *ed.* Helping adults to learn. Chicago, American Library Association, 1939. 296 p.

Intended to aid medium-sized and small libraries to develop a practical readers' advisory and guidance service.

DANTON, E. M., *ed.* The library of tomorrow. Chicago, American Library Association, 1939. 191 p.

A symposium by librarians and others on the probable course of library development in the future.

DOWNS, R. B., *ed.* Resources of Southern libraries; a survey of facilities for research. Chicago, American Library Association, 1938. 370 p.

A comprehensive survey of the books, periodicals, Government documents, and manuscripts to be found in the libraries of the South.

FARGO, L. F. Library in the school. Chicago, American Library Association, 1938. 568 p.

A presentation of the various phases of school library work: Functions, administration, services, and relationships to the school and other agencies.

HANLEY, E. R. College and university library buildings. Chicago, American Library Association, 1939. 152 p.

Contains a discussion of the essentials in library planning, and the floor and school plans of 42 American college and university libraries built, except in one instance, within the last 16 years.

HAYGOOD, W. C. Who uses the public libraries. Chicago, University of Chicago press, 1938. 137 p.

A survey of the patrons of the circulation and reference departments of the New York Public Library, who they are, what they read, what difficulties they meet in the use of the library, and what they think of the library.

HERBERT, C. W. Personnel administration in public libraries. Chicago, American Library Association, 1939. 190 p.

A study of the problems involved in selecting a competent staff, organizing it, and managing it so as to achieve the objectives of the library in the most effective manner.

JOECKEL, C. B., *ed.* Current issues in library administration. Chicago, University of Chicago Press; Cambridge University Press, 1939. 392 p.

A collection of papers presented by specialists before the Library Institute at the University of Chicago, August 1–12, 1938.

JOECKEL, C. B. *and* CARNOVSKY, LEON. A metropolitan library in action. Chicago, University of Chicago press, 1940. 466 p.

Although directed specifically at the Chicago Public Library, the principles of administration and recommendations have general application.

JOHNSON, A. S. The public library—a people's university. New York, American Association for Adult Education, 1938. 85 p.

An appraisal of the public library's activity in adult education, the present status, and future possibilities.

JOHNSON, B. L. Vitalizing a college library. Chicago, University of Chicago press, 1929. 122 p.

An account of the 7-year experimental library program at Stephens College in which a special effort has been made to integrate the library with the curriculum.

MCDIARMID, E. W., *jr.* The library survey; problems and methods. Chicago, American Library Association, 1940. 243 p.

A discussion of survey methods and procedures which could be used in testing the extent to which a given library is achieving its objectives.

MANLEY, M. C., *ed.* Special library profession and what it offers. New York, Special Libraries Association, 1938. 130 p.

A survey of the 15 fields in which special libraries are active, describing the scope, methods, requirements, and opportunities.

MUNTHE, WILHELM. American librarianship from a European angle. Chicago, American Library Association, 1939. 191 p.

A critical appraisal of library methods and accomplishments in the United States, by a Norwegian librarian.

THOMPSON, J. W. The medieval library. Chicago, University of Chicago press, 1939. 682 p.

A collection of lectures and essays on the history of libraries from the fall of the Roman Empire to the Renaissance.

WAPLES, DOUGLAS *and* CARNOVSKY, LEON. Libraries and readers in the State of New York. Chicago, University of Chicago press, 1939. 160 p.

"The State's administration of public and school libraries with reference to the educational values of library services."

WILSON, L. R., *ed.* Practice of book selection. Chicago, University of Chicago press, 1940. 368 p.

A collection of papers presented by specialists before the Library Institute at the University of Chicago, July 31–August 13, 1939.

School Libraries

Growth

In the study on libraries issued by the Advisory Committee on Education,[12] it was stated that "school libraries constitute the most rapidly growing library group in the United States today." Although comparable statistics are not available as the present biennium closes, there are many indications that this fact still holds true.

At a conference assembled late in 1939 at the invitation of the U. S. Commissioner of Education, the State School Library Supervisors ascribed the progress in their field to the following causes:

1. Growing tendency on the part of some States to grant increased State aid for the purchase of library books.
2. Adoption of standards for school libraries.
3. Growth of certification for school librarians.

[12] Joeckel. Op. cit., p. 21.

4. Cooperation of school librarians with curriculum revision problems.
5. Effective use of book funds through the pooling of resources and the rendering of advice at a central agency.
6. Increased opportunity for in-service training through institutes, summer courses, etc.
7. Growing interest of school administrators and teachers in the school library as an important factor in the educational program.

State Aid

State aid has been granted to school libraries for some time, usually from funds available for general school purposes. Recently these grants have increased in size in a number of States. For example, in Tennessee $100,000 was appropriated for each year of the 1937–39 biennium, and for 1939–41, $60,000 each year. In Virginia, State aid with matching provisions made possible the expenditure of $242,402 for public-school library books in 1938–39. In that year Louisiana spent $300,000 on the purchase of books for its school libraries, on the basis of one-half book per pupil. Another State, Georgia, set aside in 1939–40, $150,000 to be used with local matching funds for school library books. At the close of the 1938–40 biennium, 14 States had some form of State aid granted specifically for school library purposes.

Evaluation

The completion of the *Cooperative Study of Secondary School Standards* marked a step in the procedure for evaluating school libraries. Sponsored by the six accrediting associations, this study sought among other things to measure school libraries in terms of their objectives and use, rather than by purely quantitative standards. Furthermore, the library was not considered as a thing apart, but rather as an integral unit in the whole educational program of the school. The aim, "To acquire suitable library materials," was expressed not in terms of how many volumes, but in terms which take into account the recency, appropriateness, and distribution of the books. Library efficiency is measured in terms of use by pupils and teachers.

Using as a basis the pamphlet, *Evaluation of the Secondary School Library*,[13] many schools have been measuring the "temperature" of their libraries, and as a result have reconsidered their library service. In Massachusetts and Connecticut, school librarians are using the *Evaluative Criteria* in surveying school libraries. This emphasis on qualitative aspects has had its effect on school libraries.

[13] Cooperative Study of Secondary School Standards. Evaluation of a secondary school library, 1938 ed. Washington, Cooperative Study and the American Library Association, 1939. 49 p.

Certification of School Librarians

According to a study made in the U. S. Office of Education,[14] 8 States (recently increased to 9) have legislation expressly providing for the certification of school librarians. Of these States, 7 have adopted State-wide certification regulations. In 24 States, even though there is no specific legislation, the State school officers have exercised their broad certifying powers and have adopted regulations for the certification of school librarians; and one other State is planning to do so.

In the remaining 16 States, the power to decide upon the qualifications of persons to be employed as school librarians rests with the local board of education. It also should be noted that even in the States where certification is State-wide, local school boards have the authority to make the decisions regarding the employment of librarians, provided the latter meet the minimum State requirement.

The article further states: "The general trend in legislation relative to the certification of school librarians is similar to that for teachers; namely, to give State boards of education or other State certifying authorities power to establish regulations for the certification of such librarians rather than fix them by statute."

Statistics

No statistics of school libraries have been collected on a Nation-wide scale since those for 1934–35, which were published in the *Biennial Survey of Education in the United States: 1934–36*. A sampling made by the American Library Association late in 1939, however, yields some interesting facts.

Obtained from 33 representative cities, these data show that $254,223 was spent to buy books for 641,675 pupils, an average of 39 cents per pupil, a figure considerably below the recommended minimum of $1. Of the total high-school expenditures, slightly over 2 percent was spent for school library service including salaries. On the basis of the sample taken, library salaries amounted to 1.6 percent of the total salary budget.

Some interesting data on school library use were obtained by a 2-week survey of the New Trier High School Library in Illinois, made at a normal time.[15] This library has a seating capacity of 160, contains about 12,000 books, has a staff of 3 librarians, and the supplementary assistance of about 50 pupils who aid in checking attendance and handling reserve books and magazines. Adjoining the libraries are 2 classrooms to which teachers may bring their classes for reading and study; separate from the library are a number of study halls.

[14] Lathrop, Edith A. Certification of school librarians. SCHOOL LIFE, 25: 239, 256, May 1940.

[15] Dixon, Genevieve. Active workshop for the school. American Library Association Bulletin, 33: 234–36, 301–2, April 1939.

According to the statistics reported for this survey in the Bulletin of the American Library Association, 12,221 pupils used the library for reference and free reading during the 10 days. No studying is represented in the figure; that work, because of limitation of space in the library, must be done in study halls. The pupil enrollment at the time of the survey was 1,361 boys and 1,202 girls. This library attendance was distributed as follows:

Occasion for use	Boys	Girls	Total
Before and after school	1,983	2,007	3,990
From study halls (for reference and free reading)	3,448	2,682	6,130
By permits (to use library for special work)	447	254	701
Pupils in classes (reading and reference period)			1,400
Total			12,221

Although no generalizations can be drawn from the data, nevertheless the figures do give some indication of the extent of use by pupils of a modern school library.

Audio-Visual Aids

Special attention is being given by school librarians to the problem of selecting and distributing films. For some time, librarians have endeavored to link the showing of a commercial moving picture with the opportunity to stimulate the reading of a classic, but now, going further, they have come to regard films as important instructional materials, just as books are.

In a number of cities, Minneapolis, San Francisco, and Newark, for example, a trained librarian in the board of education library is handling this visual educational material. In Minneapolis, with its 89 elementary schools, 12 junior and 10 senior high schools, a centralized library is maintained which circulates films to the individual units just as if they were books.

The problem in the small-sized cities or in the country-school systems is one of working out some sort of cooperative arrangement, because unit costs of films are high. Sometimes this cooperation is with the State library extension agency, at times with the department of school libraries, and still again, with the county or regional library. The Ventura County Library in California, for example, is receiving from each school district an annual sum for the purchase of films and projectors which are lent to the schools upon request.

Librarians have felt that radio is a competitor of reading on the part of children and young people, because time spent in listening to the radio lessens the opportunity for reading. They are now realizing that radio may be used advantageously in stimulating reading, however, particularly if the outstanding programs are used in connection with reading guidance. *Americans All—Immigrants All, The*

World is Yours, and *Frontier of Democracy* are some of the radio programs stressed by librarians.

School Administrators and School Libraries

There are many indications that administrators and teachers are taking a growing interest in the problems of the school library. This may be due in part to work of the *Cooperative Study of Secondary School Standards*, to such pamphlets as, *The School Library Is . . .*[16] and *Elementary School Libraries*,[17] or to the realization that present methods of instruction require adequate library service. However that may be, the examination of current literature shows the increased awareness. Typical of many statements is the recent one of the Superintendent of Public Instruction in Virginia: "Whatever affects the total school program must inevitably affect every department of the school—nothing does this more than the school library."

State Supervision

During the biennium, three more States—Illinois, Missouri, and Oregon—added the position of school library supervisor or consultant to their roster. At the close of the 1938–40 period, the list of States which have established such positions is as follows:

In State Department of Education:

State	*Title of Position*
Alabama	School libraries consultant.
Georgia	Supervisor of school libraries.
Indiana	School library advisor.
Louisiana	Supervisor of school libraries.
Minnesota	Do.
Missouri	Supervisor of school libraries (part-time).
New York	Supervisor of school libraries.
North Carolina	School libraries adviser.
Tennessee	Director of school libraries.
Virginia	Director of public-school libraries and textbooks.
Wisconsin	Supervisor of school libraries.

In Library agencies (separate from the State department of education):

State	*Title of Position*
Illinois	School library visitor.
Oregon [1]	School library adviser.
Vermont	Children's and school librarian.

[1] In Oregon, funds were sufficient for 1 year only, but the experiment proved highly satisfactory.

In other words, 11 States have State school library supervisors as a specifically designated member of the State department of education; in 3 cases such State officials are not on the staff of the department of education but on the library agency roster.

[16] Joint Committee of the National Education Association and the American Library Association. School library is . . . Chicago, American Library Association, 1938. 6 p.

[17] ———. Elementary school libraries. Chicago, American Library Association, 1939. 6 p.

College and University Libraries

In the field of higher education, the biennium witnessed the continuance of the effort to build up libraries so that they could meet adequately their responsibilities in the educational program. Stress in the professional literature, however, was laid not on the size of the collections but upon their suitability and the importance of evaluating the use to which these resources are put.

Strengthening of Book Collections

Realizing that changes in the curriculum and new methods of instruction had added heavy burdens to the college library without adequate provision being made for the additional facilities, steps were taken early in this decade to meet the problem. Beginning with the 4-year liberal arts college, the Carnegie Corporation of New York sponsored surveys of individual libraries in order to ascertain the state of their book collections, budgets, and personnel as well as other factors affecting library service. [18]

The advisory group on college libraries, established by the Corporation, undertook the preparation and publication of the recommended list of 14,000 titles for college libraries [19] and also the volume on the *College Library Building*, by J. T. Gerould of Princeton University.

As a result of the deficiencies in the book stock found by the surveyors, the advisory group made grants totaling $1,101,000 to 83 liberal arts colleges for the purchase of needed books. Although a recommended list of books was available, no attempt was made by the advisory group to dictate book selection. With a view to facilitating the order process, a central purchasing agency was established which was used by all except a few colleges with well-established purchasing departments of their own.

Following the work with the liberal arts colleges, the Carnegie Corporation turned its attention to the junior college libraries. A procedure was pursued similar to that for the liberal arts colleges: A preliminary request for pertinent information about the library; the compilation of a recommended list of books for the junior college library, resulting in the Mohrhardt list [20] of 5,300 titles and 64 pages of indexes; visits to junior colleges deemed possibly worthy of grants. Then, in 1937, on the basis of reports made by the investigators, grants totaling $300,000 were made to 92 institutions, the payments

[18] Bishop, William W. Carnegie Corporation of New York and college libraries, 1929–38. New York, Carnegie Corporation of New York, 1938. 66 p.

[19] Shaw, C. B. List of books for college libraries . . . Chicago, American Library Association, 1931. 810 p.

[20] Mohrhardt, Foster E. List of books for junior college libraries. Chicago, American Library Association, 1937. 378 p.

to be spread over a period of 3 years. As in the case of liberal arts colleges, a central purchasing agency was established.

Teachers college libraries were the next object of attention. Following procedures similar to the preceding ones, an advisory group awarded in 1939 grants totaling $180,000 to 29 teachers colleges to buy books. This activity is in progress as the new biennium begins.

Although perhaps it is still too soon to evaluate the results of the activities just described, some facts do emerge. There has been a focusing of attention on college library needs and on the importance of the library in the attainment of institutional objectives. Many administrators and faculty members became aware of library problems as never before; college presidents are demanding of the library schools a different type of librarian.

In addition, the success of centralized purchasing (the financial savings for junior colleges amounting to 27½ percent) demonstrated the desirability of this arrangement for the future pooling of orders, not to mention the advantage of being able by means of adequate bibliographic facilities thus provided to trace and fill orders for unusual but important items requested by the instructional staff. Furthermore, certain standards emphasizing adequacy in relation to the work of the college, were formulated by the advisory groups. It has been pointed out also that the book lists, produced in the course of the work, have had an effect in raising the quality of book selection. And then, of course, there has been the practical result of an important increase in book collections of the colleges.[21]

Evaluation of Library Use

Librarians in the college field have not rested content with this accomplishment of increasing book resources. They have been making determined efforts to evaluate the use of the library facilities placed in their charge. In a study sponsored by the Association of American Colleges and published in 1940, Harvie Branscomb states: [22] "The problem is one of securing a sufficient use of these enlarged resources to justify the investment that has been and is being put into them."

It has been felt by some that such a statement is justified by the recent studies of student use of the library. For example, an investigation of student reading in 7 colleges in the north central region showed that on the average a student went to the reserve room 24 times a semester and that he borrowed from that collection a total of 11 different titles. For optional curricular reading, he borrowed 5½ volumes per semester; and for extracurricular (i. e., free) reading

[21] Bishop. Op. cit., p. 37–48.

[22] Branscomb, Bennett Harvie. Teaching with books. Chicago, American Library Association, 1940. 239 p.

only 1½ volumes, making in all 18 books on the average for a student per semester. Furthermore, the data showed that even this average was the result of a comparatively few students reading a great deal.

In the Branscomb project just referred to, the reading records of 20,000 students were used, 6 studies being involved. The statistics showed that the average number of books borrowed per student ranged from 10.28 volumes to 13.86 per year from the general collection, or approximately 1 every 3 weeks. In the case of the reserve collection, the borrowing amounted in range from 50 to 60 volumes per year, but involved only about 25 different titles. As reported by Dr. Branscomb:

> These 20,000 undergraduates borrowed on the average slightly more than 1 book per course per semester from the general library collection, and made 6 withdrawals per course per semester from the reserve book room, the latter involving about 3 different titles.

It is with such findings as these in mind that college librarians have been studying the problem of integrating the library with the educational objectives of the institution. They are distinctly emphasizing the use of books rather than the books themselves. Toward this end, developments in the accrediting procedures have been a decided aid.

New Accrediting Procedures

Having realized that quantitative standards, such as total number of books and library expenditure per student, were unsatisfactory measures of the effectiveness of a college library, one accrediting agency worked out qualitative criteria. Instead of requiring 8,000 books, which after all might be wholly unsuited for the work of the college, or of setting $5 per student as a standard of expenditure, which might be wholly inadequate for bringing or keeping the book collection up-to-date and effective, the new accrediting procedure aims to evaluate the college library in terms which measure the extent to which it serves as an effective agent in attaining the educational objectives of the institution.

In order to do this, such items as these are taken into account: Book resources qualitatively considered; financial support; and the extent of use made of the library by students and faculty. It is intended, moreover, that these measures shall in no sense be considered minimal ones, which when once attained offer no inducement for further improvement. Instead, the new accrediting procedure rates an institution in terms of its position on the scale in relation to comparable institutions. If a college library fails to keep up with the rate of improvement of its group, it will find itself declining in its percentile position.

According to the North Central Association requirement: "The library should provide the reading facilities needed to make the educa-

tional program effective, and there should be evidence that such facilities are appropriately used." In this statement, it will be noted that current accrediting procedure emphasizes that the resources of the library must be suitable for the objectives of the institution and that account must be taken of their effective use.

Cooperation Between Institutions

In the earlier sections of this survey mention was made of the cooperative agreements between research libraries in the matter of union catalogs. There is a special case of institutional cooperation which is worth noting. It is the arrangement under which by contractual agreement, Vanderbilt University, George Peabody College, and Scarritt College have undertaken to establish joint library facilities. Located in close proximity, these three Nashville institutions, with the aid of a General Education Board grant and donations from other sources, have joined in erecting a central library building. They have also contracted to pool their interests in acquiring instructional materials and in providing the necessary library service. This cooperative agreement represents in many respects a new solution to a troublesome problem.

Other current examples of institutional cooperation are: The agreement between the University of North Carolina and Duke University in regard to interlibrary loans and the division of fields in the acquisition of printed materials; the research center at Atlanta in which various Georgia institutions are participating.

Surveys

In an effort to analyze present difficulties and to propose remedies, several universities have had their library facilities surveyed during the present biennium. At the University of Georgia in Athens, the surveyors undertook (1) to discover the limitations which are at present retarding the effective operation of the library, and (2) to formulate a plan of library development commensurate with the growth of the University of Georgia and designed to increase the effectiveness of the University's general program of instruction, research, and extension.

Surveys of libraries also have been made during the biennium at the University of Mississippi and at the University of Indiana. A general survey of the development and financial support of seven western and northwestern State university libraries has been made by William H. Carlson. Considerable attention has been paid to the self-survey of libraries.

At the 1940 annual meeting of college librarians, the technique employed in the self-survey at Mount Holyoke College was described by

Flora B. Ludington, the librarian.[23] According to her account, a full year was spent in preparation for the survey by studying the history of the college, the various changes in the curriculum, the research interests of present and former professors, and the annual library reports of the past 67 years. With the active cooperation of the faculty, the book collection was evaluated for its adequacy in relation to the courses now in the curriculum; the honors, graduate and research work; the subjects of general and cultural interests; and courses desired as additions to the curriculum. When deficiencies in the book collection were found, estimates were made of the number of volumes needed to bring the Mount Holyoke College Library to the state of adequacy, and the cost involved.

Faculty Status of Librarians

If the library is an integral part of the college's instructional program, it would seem to follow naturally that the library representatives should participate in the deliberative and policy-forming actions of faculty bodies. It should follow also that those directing the activities of the libraries should have the necessary qualifications and competence for such participation. During the biennium, there have been no comprehensive studies of the faculty status of librarians, but one made in 1939 covering a sample of colleges indicates the following:[24]

Of 129 chief librarians: 98 have faculty status; 31 do not.
Of 70 assistant librarians: 30 have faculty status; 40 do not.
Of 50 library department heads: 27 have faculty status; 23 do not.
Of 50 professional assistants: 20 have faculty status; 30 do not.

Statistics of College and University Libraries

No comprehensive statistics of university and college libraries have been gathered since 1929. Such figures as are available on conditions at the close of the present biennium come either from isolated library items in general surveys or else from special studies covering only a relatively small group of institutions. The U. S. Office of Education figures, for example, indicate that the total number of bound volumes in the libraries of our institutions of higher education is over 63,000,000 at the present time and that the amount of expenditures for libraries in the colleges and universities reporting is about $17,500,000.

[23] Ludington, Flora B. Evaluating the adequacy of the book collection. College and Research Libraries, 1: 305-313, September 1940.

[24] Maloy, Miriam C. Faculty status of college librarians. American Library Association Bulletin, 33: 232-33, 302, April 1939.

The statistical tables compiled annually by the American Library Association, but covering only a comparatively small number of cases, afford another source of information. On the basis of the latest data gathered by this association, it was reported that although library support decreased from 1937–38 to 1938–39 (and there are indications that this is the trend), this decrease, except in the case of teachers colleges, was at a less rapid rate than that for the total institutional expenditure. The point also was made in this American Library Association summary that the number of professional librarians has been increasing during recent years at a more rapid pace than the number of faculty members.

Another statistical study published during the biennium was made by F. P. Allen [25] of Rhode Island State College in order to bring up to date the library statistics of the *Survey of Land-Grant Colleges and Universities*. His data show that in the matter of library support, some slight gains have been registered since 1929; but they are not significant. Compared with those of 1930, his more recent figures disclose that an increased number of land-grant institutions are spending on their libraries 2 percent and more of their total budgets, and a smaller number are expending less than 2 percent.

Evaluation of Reference Service

In the higher education field, an attempt is being made to measure the amount of reference service rendered by libraries, an undertaking which admittedly involves many difficulties. Some librarians have felt that the amount of reference service, if it could be measured, would be a better indication of the use of the library than circulation figures, especially those of reserve books.

It was with such an objective in mind that questions on reference service, with the following definitions, were incorporated in the uniform statistical report blank previously mentioned:

1. *General questions* are those which involve the use of library material in answering or which involve interpretation of the use of library tools resulting in the use of library material.
2. *Search questions* are those of an investigatory or research nature requiring a search of 15 minutes or more.
3. *Bibliography compilation* includes only those lists of material which are of sufficient value to be typed and preserved.

By the trial of this series of questions it is hoped that eventually there will be evolved a fairly satisfactory method for measuring the reference service performed.

[25] Allen, F. P. Library expenditures of land-grant colleges and universities, 1928–37. Library Journal, 63: 404–407, May 15, 1938.

Cooperation with Public Libraries

College librarians have worked in close cooperation with public librarians in bibliographical undertakings, such as the *Union List of Serials;* in union catalog undertakings; and in problems involving technical processes. An additional area for cooperation was noted by Carl White in his address before a general session of American Library Association conference in 1940:[26] "Would it not be mutually advantageous for universities in their extension work and public libraries in their adult education work to plan their work in closer cooperation to each other."

Public Libraries

Public libraries have been affected also by many of the activities and conditions already described, such as attitude towards controversial issues, increased attention to personnel problems, research in librarianship, growth of school libraries, microphotography, and reemphasis of the educational basis of libraries. In public libraries, however, several developments may be noted as having been especially significant during 1938–40: The role of the public library in adult education; the studies made of the use of public libraries; and the importance of library extension.

Service in Adult Education

The adult education problem has been greatly to the fore. At a 1939 meeting of public librarians held at Princeton University under the auspices of the American Association for Adult Education, this question was posed: Is the public library simply a medium for recreation and amusement; or an agency for the indiscriminate distribution of print, with no other criteria than popular demand; or is it essentially an educational agency? With certain limitations, it was generally agreed that public libraries are basically educational, in large part the outgrowth of the adult-education movement of the middle nineteenth century.

On this point, the Adult Education Board of the American Library Association in a recent report declares, "There is a growing renaissance in adult education among librarians," and another statement declares that public libraries should be "truly educational organizations and not mental playgrounds." As illustrations of the current awakening, the following are noted: [27] The establishment of a readers' advisory

[26] White, Carl M. Place of the university library in the modern world. American Library Association Bulletin, 34: 440–445, 486–490, September 1940.

[27] Ulveling, Ralph A. How are libraries facing the social crisis? American Library Association Bulletin, 34: 396–398, 421, April 1940.

corps in the Portland (Oreg.) Public Library; the perfecting of readers' advisory service in the Chicago branch libraries; the small library in Cortland, N. Y., making itself the community culture center by organizing the latent art and music interests of the town. In addition, there are many reports of library cooperation with vocational guidance centers, forums, rural women's groups, consumer groups, adult schools, and labor groups. To meet the need for library workers in this field some library schools have been adding courses in adult education to their curriculum. In Dunkirk, N. Y., some of the routine and special activities were dropped so that adult education, as a more vital activity, could be installed.

In Alvin Johnson's *Public Library—A People's University*, a survey of public library functioning in adult education, the point is made that the institution is peculiarly fitted in this field of work. Adult education, the author states, is highly individualistic and the public library is accustomed to working in terms of the individual; furthermore, adult education, particularly at the upper levels, depends on guidance in reading, a function which the public library is qualified to perform.

As analyzed by librarians and other observers, the difficulties confronting libraries in the field of adult education are limited budgets, insufficient supply of suitable books, and inadequate personnel. The remedies being proposed, as the biennium closes, are economies in administration, readjustment of emphasis on certain library activities, and additional funds.

Readable Books.—Librarians are still finding two obstacles in their work of reader guidance: One, the shortage of readable material suitable for those needing it; and the other, a lack of reading ability on the part of those seeking self-education. In these difficulties, some progress has been made. As an outcome of studies carried on by a committee on readable books, for example, a commercial publisher has issued on social, economic, and other subjects a series of books for the type of reader described as inexperienced, with eighth- or ninth-grade reading ability; and the experienced reader who is not a specialist in the particular subjects of which the books treat. The results of this experiment would seem to have considerable implication for adult education.

Studies of Public Library Use

Just as their colleagues in higher education have been doing, the public librarians have been making studies of the use of their collections. Early in the biennium, the results of W. C. Haygood's [28] 2-year study of the use of the New York Public Library were made known. The data from 20,000 patrons showed that men outnumbered

[28] Haygood, William C. Who uses the public libraries. Chicago, University of Chicago Press, 1938. 137 p.

women in the use of public libraries in New York City, 55 percent of the branch patrons and over 80 percent of the main reference department users being men. Students were the largest single group using the branch libraries, but professional people ranked highest in numbers using the main reference department. Clerks and stenographers were the second largest group in both branches and reference department. More than half the readers (56.2 percent) complained that there were not enough books, or the right books to suit their needs. Only 0.6 percent (less than 1 in 100) stated that when they tried to obtain assistance from a staff member they were disappointed.

Another study of public library use was reported from Alliance, Ohio, which was taken as a typical industrial community.[29] In this survey, special attention was paid to the younger borrowers. Based on the data gathered, the following were some of the conclusions drawn:

1. Men borrowed nearly as many books as women.
2. School girls borrowed nearly twice as many books as school boys.
3. Both boys and girls borrowed more books per capita than men or women.
4. Per capita reading for both boys and girls increased in the first six grades, decreased in the seventh and eighth, and reached their peak in high school.
5. Public-school students and housewives form the largest group of library clientele. They were followed in order by men in manufacturing, rural women, rural men, professional women, and men in trade.

At Rochester, N. Y., Helen L. Butler [30] carried on an inquiry into the statement of motives by readers; an endeavor, in other words, to find out why people were reading. As summarized by the investigator, these motives were: (1) Information getting; (2) recreation; (3) aesthetic appreciation of the artistically beautiful in books; and (4) critical understanding of the effect produced by the book.

Generalizing on the various studies of library users, the adult education specialist of the American Library Association has stated that of the 30 percent of the population registered as public-library borrowers: [31]

50 percent are students—children and youths.
15 percent are housewives.
5 percent are professional workers.
25–30 percent are adult education masses, skilled or unskilled workers, clerks and shopkeepers, unemployed, etc.

These studies, cited as examples of a growing body of literature, are not sufficient as yet to justify generalizations, but they are at least indicative of librarians' attempts to analyze the use being made of their resources.

[29] Krieg, Laurel L. Community studies in reading. Library Quarterly, 9: 72–86, January 1939.
[30] Butler, Helen Louise. Inquiry into the statement of motives by readers. Library Quarterly, 10: 1–49, January 1940.
[31] Chancellor, John. Mass education and the public library. Library Journal, 65: 54–56, January 15, 1940.

Library Extension

In the field of library extension, progress was recorded. According to a count made by the American Library Association in 1939 the number of people in the United States without library service decreased by almost 3,000,000 since 1934. Over 400 counties now have regional or county library service, counting only those in which the appropriation from county or State funds amounts to $1,000 or more. The Work Projects Administration also has entered the field with a library-extension program.

By either new legislation or amendment to old, five States—Alabama, Indiana, Montana, Oregon, and West Virginia—have permitted during the biennium the establishment of regional or joint library service. Louisiana not only continued its triparish library experiment but embarked upon another regional library system with headquarters at Ruston. In Kentucky, library service has been established in one instance with five counties participating, with the T. V. A., a State teachers college and the State library extension division joining in the activity. Vermont has placed its library service in the hands of four regional units, and New Hampshire has been trying out a similar demonstration regional service. In Tidewater Virginia regional library service is now being operated.

State Aid

Aware of the inequalities in ability to finance public-library service, friends of the institution, comprising not only librarians but organized groups of citizens, continued to work for State aid as a means of remedying the situation. In several cases the movement was successful. Arkansas renewed its appropriation of $100,000 for the biennium to cover grants for the purchase of books for county and regional libraries, and the operation of the library commission. New Hampshire provided for the continuance of regional bookmobile service, really a form of State aid. Ohio renewed the grant of $100,000 for public-library development. Vermont appropriated $25,000 for the biennium for the continuance of its program of bookmobile service to the communities and the rural schools. In addition, nine States have continued their allotments of small amounts to local libraries; but Michigan, in an endeavor to balance its budget, repealed the section of the 1937 law which provided for a continuing State-aid annual fund of $500,000. Altogether, these cases form some indication of progress towards making public libraries a concern of the State, rather than simply a municipal responsibility.

The regulations set up in Ohio for the distribution of State aid show how one State has handled the problem.[32] It is specifically stated that the aid shall be used to encourage the extension of library service. For the purpose of allocating the money, libraries are divided into 2 groups: (1) Extension center libraries, subdivided into four grades and (2) all other libraries.

In extension center libraries, the amount of funds granted depends upon the grade to which the library is assigned. This grade is determined by (1) the quality of work which the library is doing or is capable of doing and (2) the intangible tax income per capita of its county. The four work grades are defined as follows:

Grade A.—Libraries doing excellent county work, with trained or experienced personnel in charge and definite budgets secured from the budget commission.

Grade B.—Libraries doing good county work, but with great improvement yet to be.

Grade C.—Libraries preparing for, or just beginning, county work.

Grade D.—Libraries which were logical centers and agreed to act as such, but which have not made the proper advance.

After the tentative assignment of a library to a grade on the basis of quality of work, the intangible tax income per capita of the county is taken into account. If the latter is more than $2 per capita, the library is lowered 2 grades below the one to which it was placed by virtue of its quality of work; if between $1 and $2, the library is lowered 1 grade; if the intangible tax income per capita is less than $0.50, the library is raised 1 or 2 grades. In no case, however, is a library raised to grade A as a result of tax income adjustment unless it has trained or experienced personnel in charge of county work and everything possible is being done to secure county budgets of not less than $2,000.

Grade A libraries receive $750 per annum from State-aid funds; grade B libraries, $600; grade C, $400; and grade D, $200. Any money left after the allocation to the extension center libraries (group 1) is granted to the group 2 libraries, i. e., those which are not extension center libraries.

In this State-aid formula, there is evident intent to encourage one strong library in each county, so that service can be extended to the rural areas. There is also an effort to equalize income, for those counties poor in intangible tax income have higher grants made to them than they would have received had the work only been taken into account.

[32] Noon, Paul A. T. Five years of State aid in Ohio. American Library Association Bulletin, 34: 73–77, February 1940.

Especially pertinent to the question of State aid were the recommendations made early in 1940 at the White House Conference on Children in a Democracy:[33]

1. The States should encourage and assist in the extension and development of local public library service, and give financial aid for the maintenance of such service. In rural areas provision should be made for traveling libraries to reach isolated homes and communities.
2. Special Federal grants should be made available for extension of library service to rural areas.

That all types of libraries are interested in library extension is seen in the latest report of the American Library Association Extension Board which stated that it "has found university librarians, school librarians, staffs of large city libraries, and others as concerned about and ready to support the development of complete library service for their State and regions as those [librarians] specially labeled 'extension workers'."

Service to Young People

Public librarians have evidenced a growing concern in the matter of the reading of young people. Surveys have disclosed a startling drop in the reading habit as childhood passes into youth, and then on to adulthood. Many who were readers as children fail to continue as adolescents.

It is with these facts in mind that librarians have turned their attention to the needs of youth. In many libraries, special rooms with books believed to fit their needs have been set aside and personnel with special qualifications have been detailed to administer these rooms and to make contacts with youths and youth organizations. High-school boys and girls are being induced to use library facilities; out-of-school youth are not overlooked. Libraries are helping this latter group through community centers and youth-serving organizations.

In St. Paul a special vocational guidance service has been set up by the public library whereby, with the loan of a guidance specialist from the public-school system, 2 afternoons a week are devoted to helping the unemployed out-of-school youth. After the vocational possibilities of the individuals are diagnosed by the guidance expert, the librarian seeks to supply appropriate reading bearing on contemplated careers.

As another example of special library service for youth, Denver may be cited.[34] In that city the new service for youth, based on the

[33] White House Conference on Children in a Democracy. General report adopted January 19, 1940. Washington, U. S. Government Printing Office, 1940. p. 42.

[34] Nichol, Isabel. Denver increases work with young people. American Library Association Bulletin, 34: 235–238, April 1940.

experience of some 20 other cities pioneering in this field, made a special point of close cooperation between the library and the youth organizations. Having established a young people's alcove in the library to serve as a headquarters for this age group, all high schools were visited to make known this new facility. As a result of the contacts, book clubs, high-school reading round tables, and regular book review programs became a feature of the new service.

Out-of-school youth have been reached by the Denver Public Library through the community centers, with the result that two types of book clubs are now in operation: One for the mature young people who are alive to today's problems and wish to learn about and discuss them; the other for those who are still in the picture and pulp stage of literature. Still another activity of this Denver youth service is that with the juvenile court, where the list compiled by Mayor La Guardia's committee is being used effectively.[35]

With the new emphasis on the public library's responsibilities in adult education has come this similar emphasis on the reading needs of young people.

Statistics

During the biennium the U. S. Office of Education has had in progress a Nation-wide compilation of public library statistics. The figures covering the fiscal period 1938–39 show that 5,798 public libraries, reporting out of the 6,880 to which requests for information were sent, contained 104,728,725 volumes and had an annual circulation of 415,924,335 volumes. Their total operating expenditure for the year was $48,831,608, and their capital outlay was $2,699,398. In operating these libraries, 15,822 full-time and 4,967 part-time professional and subprofessional workers were employed. The total personnel (including professional, subprofessional, clerical, custodial, and other workers, but excluding all person paid from Federal emergency funds) numbered 21,943 full-time and 12,834 part-time employees.

Calculations made from a representative sample of 400 public libraries contained in the general compilation indicate that during the period 1938–39, local taxation formed 86.6 percent of the annual income of these institutions; county support, 0.9 percent; and State aid, 0.2 percent. In a sample of 270 public libraries serving populations under 4,000, the average annual total income was $1,152. The foregoing figures are based wholly on a sampling and should be considered as preliminary to the complete figures which will be available when all calculations are finished.

[35] New York City. Committee for the Selection of Suitable Books for Children in the Courts. An invitation to read. New York, Municipal Reference Library, 1937. 82 p.

The American Library Association publishes statistics from a small group of public libraries each year. On the basis of the data gathered for the fiscal year ended 1939, the following findings have been reported:

Of 47 libraries in cities with over 200,000 population, 21 percent spent more than $1 per capita, and 29 percent less than 50 cents per capita.

Of 45 libraries in cities with a range of 100,000 to 199,000 in population, 8 percent spent more than $1 per capita, and 33 percent spent less than 50 cents.

Of 56 libraries in the 35,000–99,999 population group, 28 percent expended more than $1 per capita, and 21 percent less than 50 cents.

Of 42 libraries in the 10,000–34,999 population group, 21 percent spent over $1 per capita, and 14 percent less than 50 cents.

School and Public Library Relationships

The problem of school and public library relationships is a vital one. It has become increasingly important as demands upon the libraries for service in education have become greater at a time when the amount of available financial support has tended to become stationary. Several statements made recently show the trend of the thought on the problem.

In *A Metropolitan Library in Action*, Joeckel and Carnovsky [36] state that "one of the most troublesome questions in the library world today is that of library-school relationships." They add, "Library service to students is too important to be subject to emotional reaction of a personal nature. To insure its performance on a high level and with economy, the two agencies must get together and study their problems calmly and realistically."

The Educational Policies Commission likewise has given consideration to the problem. In its *Social Services and the Schools*,[37] it points out that the public library offers to all citizens a type of education which is informal yet purposeful. Included in its library service is a highly specialized one for children. On the other hand, school libraries have been developing to serve children and in some communities have been expanding their service to include adults. The public libraries on their side have been extending their services into the schools.

With this situation in mind, the commission formulates the question in this manner:

> With two public agencies meeting a common educational need by essentially the same methods and coming to serve much the same population, the need for consideration of some means of uniting their efforts is apparent. The problem is to define a plan of relationships of the public library to the school library which will coordinate and prevent needless duplication of services.

[36] Joeckel, Carleton B., *and* Carnovsky, Leon. A metropolitan library in action. Chicago, University of Chicago Press, 1940. 466 p.

[37] National Education Association. Educational Policies Commission. Social services and the schools. Washington, The Association, 1939. p. 27–42.

As a possible solution, the Educational Policies Commission envisions the "unification of all public educational activities, in communities or areas of appropriate size, under the leadership of a *public educational authority*" which will be charged with the administration of the joint program of activities now carried on separately by the school, the library, and recreation boards.

Still another statement is the one made in May 1940, by Ralph Munn, president of the American Library Association and director of the Carnegie Library of Pittsburgh: [38]

> Duplication of effort is a waste which will not be tolerated indefinitely. The modern school library came into active use after public library work with children had been highly developed as our most successful specialty. . . . Educators believe it to be an essential part of the school's teaching equipment, and it is a rather natural step to broaden its scope to include complete service. I am one of those who believe that both the public library's children's room and the school library have essentially different contributions to make towards the child's development, and that we need both.

At the close of the biennium, 1938–40, attention was thus being paid to this problem of school and public library relationships. It is highly desirable that a satisfactory solution be reached, because the most effective and adequate library service possible is needed for all our people in the crisis that lies ahead.

Special Libraries

In any consideration of the total library situation, special libraries should be taken into account. These libraries, some privately financed and others supported as a part of public institutions or government agencies, render important research and informational service to their special clientele.

Beginning with a few libraries created by public utility and commercial companies, this type of library has grown steadily. In 1908, for instance, there were only 108 such libraries; in 1921, the number had grown to 429; in 1925 to 975; and in 1935 to 1,475, with indications at the close of the biennium that the figure is still increasing. The Special Libraries Association points out that the following fields are covered by special libraries: Architecture, art museums, banking, business, chemical industry, commerce, engineering, Federal departments and bureaus, historical societies, insurance, medical and public health, newspaper work, public utilities, religion, and university and college department libraries.

Through the medium of this association, these special libraries have made during the biennium important contributions in the field of bibliography, in-service training, and the coordination and improved utilization of special library resources.

[38] Munn. Op. cit., p. 384.

Effect of the International Situation

As the 1938–40 biennium closed, libraries of all types were beginning to feel the impact of the international situation. The increasing menace of totalitarianism made necessary a far-reaching defense program involving expansion of our armed forces, mobilization of our industries, and increased emphasis on democracy and morale. Public libraries especially were experiencing heavy demands for technical materials from persons engaged in or preparing for work in defense industry. University and special libraries along with the public libraries began to have requests for research materials needed for the planners of the defense program. School libraries as well as other types of libraries were finding it necessary to give increased attention to the demands for printed materials on democracy and relations with the other American republics.

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BIENNIAL SURVEY OF EDUCATION
IN THE UNITED STATES
1938–40

THE SCHOOL PLANT: TRENDS PRESENT SITUATION AND NEEDS

VOLUME I
CHAPTER IX

FEDERAL SECURITY AGENCY
Paul V. McNutt, Administrator

U. S. OFFICE OF EDUCATION
John W. Studebaker, Commissioner

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THE SCHOOL PLANT: TRENDS, PRESENT SITUATION, AND NEEDS

By
ALICE BARROWS
Senior Specialist in School Building Problems

Introduction

THE PURPOSE of this bulletin is to describe trends in the school building field in the past 10 years, and to summarize the present school building situation and needs.

The past 10 years have been years of unprecedented change. They have included the end of a period of prosperity, the worst depression in the history of the country, a period of extensive Federal relief and public works to meet the conditions arising out of the depression, the beginning of economic recovery, and the beginning of the second World War.

In such a period, old habits of thinking and acting have been uprooted. This has been particularly important so far as the schools are concerned. New conditions had to be met with new solutions. It was possible to try new ideas and to push forward progressive plans that had been held back by the inertia of custom. All these factors have contributed to make the past 10-year period particularly significant in the school building field.

Historical Review.

In order to place the events of the past 10 years in their proper perspective it is desirable to review briefly the history of school building planning and construction from the years preceding the first World War to the present era. From the standpoint of school building construction, those years can be divided into five periods: The pre-World War period, the World War period, the post-World War period, the depression or economic crisis period, and the second World War period.

During the pre-World War period there was little or no recognition of the relation of school buildings to the development of an adequate educational program. School building construction was a simple matter. So far as elementary schools were concerned it was generally assumed that all that was needed was a certain number of classrooms to take care of a certain number of classes. Auditoriums and gymnasiums were seldom found in elementary schools and it was a rare

elementary school that contained special activity rooms. High-school buildings sometimes contained auditoriums and gymnasiums, or combined auditorium-gymnasiums, and also rooms for art, music, and science planned for the regular high-school courses, but the use of high-school buildings for community purposes and the planning of buildings to meet such community needs had hardly begun. Boards of education were still raising the question "Why should schools teach children to play?"; dramatics and concerts in schools were special features for special occasions which usually upset the normal running of a school. During the pre-World War period the capital outlay for school buildings per year from 1906 to 1912 was $70,561,524, and the average per pupil cost was $4.49 (table 1).

In the first World War period (1914–20) there was almost a complete cessation of school building construction with resulting congestion. Thousands of children were on part-time and double sessions and thousands were housed in old, inadequate, insanitary buildings. The school population increased 12.9 percent for elementary schools and 101.1 percent for high schools. The average amount of capital outlay per year for that period was $5.71 per pupil.

Table 1.—*Average amount of capital outlay and per pupil cost for elementary and secondary schools per year per period, 1906–12, 1914–20, 1922–28, 1930, 1932, 1934, and 1938* [1]

Periods or years	Average amount of capital outlay per year per period	Average enrollment of public school pupils per year per period	Average per pupil cost of capital outlay per year per period
1	2	3	4
1906–12	$70, 561, 524	17, 425, 180	$4. 49
1914–20	116, 934, 893	20, 484, 325	5. 71
1922–28	372, 111, 009	24, 362, 300	15. 27
1930	370, 877, 969	23, 678, 015	14. 44
1932	210, 996, 262	26, 275, 441	8. 03
1934	59, 276, 447	26, 434, 193	2. 24
1938	238, 853, 496	25, 975, 108	9. 20

[1] Statistics of State School Systems, Biennial Survey of Education in the United States, 1906 to 1938, inclusive.

Because the situation during the first World War period brought about a crisis in the schoolhousing situation, the post-War period (1920–28) was significant for a great acceleration in appropriations for school buildings. The average amount of capital outlay per year for that period was $372,111,009, or $15.27 per pupil. Yet even with this increase in capital outlay it was not possible to make up for the lag in school building construction created by the war. The result was that the United States entered the depression or economic crisis period with construction in the school building field still inadequate to meet school building needs. The situation became critical when in 1934 the average per pupil expenditure for school building construction fell to $2.24 per pupil.

From 1933 to 1939, the situation was alleviated through Federal aid for school buildings. During that period $943,664,244 were made available for school buildings through the Public Works Administration. Of that amount, $448,043,372 were in Public Works Administration grants and loans. That school building needs had not yet been met in 1939 is evidenced by the fact that in January of that year the estimated cost of school building projects for which applications were made to the Public Works Administration and returned because of lack of funds amounted to $345,854,708 in the 48 States and the District of Columbia.

At the beginning of the second World War period, school building construction has not caught up with the lag in construction caused by the first World War, and local communities report that they do not have the money for school building construction for either current or emergency needs.

There have been a number of progressive trends in school plant planning during the past 10 years. School superintendents are now raising the question as to the extent to which progress in the school building field may be curtailed because of the present emergency.

Part I

Trends in School Plant Planning

Among the most significant trends in school plant planning have been: (1) Increased emphasis upon the functional planning of school buildings to meet the needs of children, youth, and adults in a period of unprecedented social and economic change; (2) inter-relation between school-plant planning and reorganization of schools into larger administrative units; (3) emphasis upon the importance of long-range studies of school-plant needs not only for individual communities but for the State as a whole; (4) increased service in school-building planning by State departments of education to local communities.

Functional Planning of School Buildings.

The planning of a school building is dependent upon the kind of education to be carried on in the building. Therefore, curriculum changes have a direct bearing upon the design and construction of a school building. Reorganization of the educational curriculum is no new thing, but during the past 10 years the impact of sudden and unprecedented changes in the social and economic structure, both at home and abroad, have greatly accelerated the reorganization of the curriculum and school administrative practices.

It is now a truism that it is no longer enough that the school give merely the training in academic work which was formerly accepted as its function. It is taken for granted that the elementary school must now undertake to give children many of the rich educational opportunities in work, play, and leisure-time activities which formerly were received outside of the school, and must provide these opportunities in terms of life as it is today. Furthermore, the curriculum of the high school is being considerably broadened in order to provide adequately not only for boys and girls who plan to go to college, but also for the large number of youth who may never enter college. Also, during the past 10 years there has been an increasing emphasis upon the development of public school plants as community centers for activities for both out-of-school youth and adults. These activities include not only courses in academic and vocational subjects, but opportunities for recreation including dramatics, dances, basketball, day and night tennis, football, etc.

It is clear that this broadening of the school curriculum to include a wide variety of activities requires a type of building which contains rooms especially planned and equipped for these activities. A build-

ing erected 50 years ago which contained only classrooms and possibly an assembly hall—and there are still many of them—cannot meet the needs of education today because a program of enriched activities cannot be carried on adequately in the traditional classroom building. If a modern educational program is to be provided for children and youth, the modern school building must contain an auditorium, gymnasium, art and music rooms, science laboratories, shops, domestic science laboratories, social science rooms, etc. Without these facilities it is impossible to carry on effectively the educational program that is necessary to equip children to meet the changing conditions of a changing world. Furthermore, these facilities must be planned so as to make possible their use by youth and adults as well as by children in elementary and high schools.

In other words, school buildings may help to perpetuate past practices or they may facilitate the operation of new developments in the curriculum. Therefore, the functional planning of school buildings to carry out the requirements of the educational program becomes a matter of first importance in the successful development of a modern school curriculum. But good functional planning of a school building is possible only through the combined cooperative effort of the school superintendent and his staff and the architect. A school building may be architecturally attractive and yet not be functionally well planned. School superintendents who have carried on extensive school building programs during the past 10 years realize that, if they are to get the full value of every dollar invested in their buildings, it is important that they plan the educational program before the plans are drawn so that they may give the architect data on the basis of which he may design a building which will conform to the educational program, which will be flexible and expansible, and which will lend itself to good architectural treatment.

In general, the trend now is toward the acceptance of the following points as being important in the efficient planning of modern school buildings:

1. The immediate and ultimate capacity of the building must be anticipated. If built in units, the first unit should be planned with reference to its possible functioning until the complete building can be made available. To provide for flexibility, small and self-sufficient building units should be employed.
2. The official policy as to class size must be considered. Class size influences floor area and it is not good policy to design a building for a class size of 30 which ultimately must be raised to 40. On the other hand, it is wasteful to plan rooms for 40 pupils when only 30 or 35 are to be enrolled.
3. The extent and kind of organization to be housed in a building should be given serious thought. Educational objectives, organizations, and methods are changing rapidly and have a definite effect on building plans. If a school is operated on one type of educational program, a

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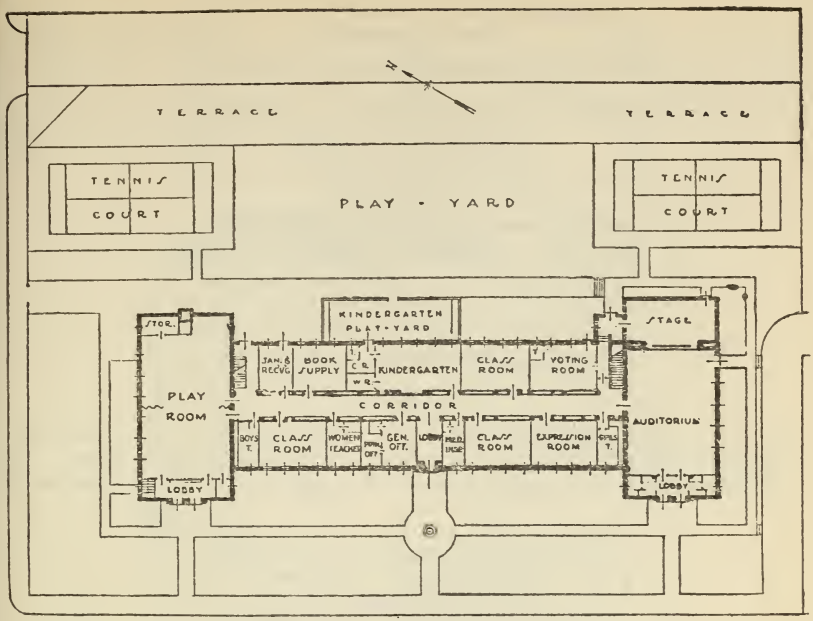
given number of rooms of certain sizes will be needed, but, if there is a different type of program, rooms of entirely different kinds and dimensions may be needed for a school of the same number of pupils.

4. Methods of teaching to be used and curricular or extracurricular activities to be provided for have an important influence on building planning. Activities determine the type of built-in and movable equipment to be used. Equipment tends to determine floor space. Fixed equipment is economical of floor space but sometimes less efficient instructionally where modern methods prevail. Specialized and movable equipment requires more space, but conforms to progressive instructional requirements.
5. Time allotment for various subjects in the curriculum is a qualifying factor in planning. As an illustration, if in a school of 1,200 pupils the time allotment for health education calls for one-half hour daily in the gymnasium, with 80 children in a section, one gymnasium will be sufficient. If the allotment requires 1 hour a day, two gymnasiums or one gymnasium and a playroom will be necessary.
6. Planning all school plants as community centers raises a definite problem in educational planning. In providing for adult classes the possibility of avoiding duplication of the facilities needed for the children must be considered.
7. Because educational programs are always in a process of change to meet the changing educational needs of children, flexibility in construction is of vital importance. Therefore, it is now recognized that modern school buildings, like modern office buildings, should be erected with nonsupporting walls between rooms. If this is done, the size of rooms can be changed according to the changes in the educational program without necessitating any change in fundamental structure. For example, the school library has become a very important room in both elementary and high schools. It should be larger than the ordinary classroom. A community which has a school building which was erected 25 years ago and is still in good condition cannot change the size of rooms so as to provide for a library of an adequate size if the building was erected with supporting walls between rooms. But if the walls are nonsupporting, adjustments can be made within the existing structure, providing a library of, say, 22 by 45 feet instead of 22 by 30 feet.

Illustrations of Functional Planning for Modern School Buildings.

An examination of the plans for elementary- and high-school buildings erected during the past 10 years shows that, whatever the architecture, the interior planning of the building provides rooms in most cases for a large variety of activities. The number of these activities depends upon the size of the school but even in small school buildings the attempt is made to provide rooms for activities other than academic.

Plans of elementary school buildings.—The Burgwin School, Pittsburgh, Pa., is an example of the trend toward including in elementary-school buildings special-activity rooms which were provided until recently only in junior and senior high school buildings. The building



Burgwin Elementary School, Pittsburgh, Pa., first floor plan.

provides specially equipped rooms for such subjects as nature study, art, music, library, and expression (first-floor plan, Burgwin School).

The Huntington Park Elementary School, San Marino, Calif., is an illustration not only of the provision for a variety of activities in elementary schools but of the adaptation of school-building design and planning to the particular climate in which the school is located. As will be seen from the floor plan, this is a one-story building and provides for outside exits from each classroom to an adjoining terrace. Also each classroom has two alcoves for work or special activities. The school provides for a children's rest room with outside exits. In the group of buildings which comprise the school plant there are also an auditorium, gymnasium, shops, and rooms for domestic science and art (floor plan, Huntington Park Elementary School).

Plans of high-school buildings.—The floor plans of high-school buildings show various trends of considerable importance.

The Arthur Hill High School at Saginaw, Mich., is an example of functional planning based on a carefully planned cooperative study by the school superintendent, teachers, heads of divisions, architects, and educational planning experts.

The first step in the plan was the organization of a committee on curriculum study. The task of this committee was to evolve a curriculum for this high school based upon the cooperative effort of school officials, principals, teachers, pupils, and citizens. The com-

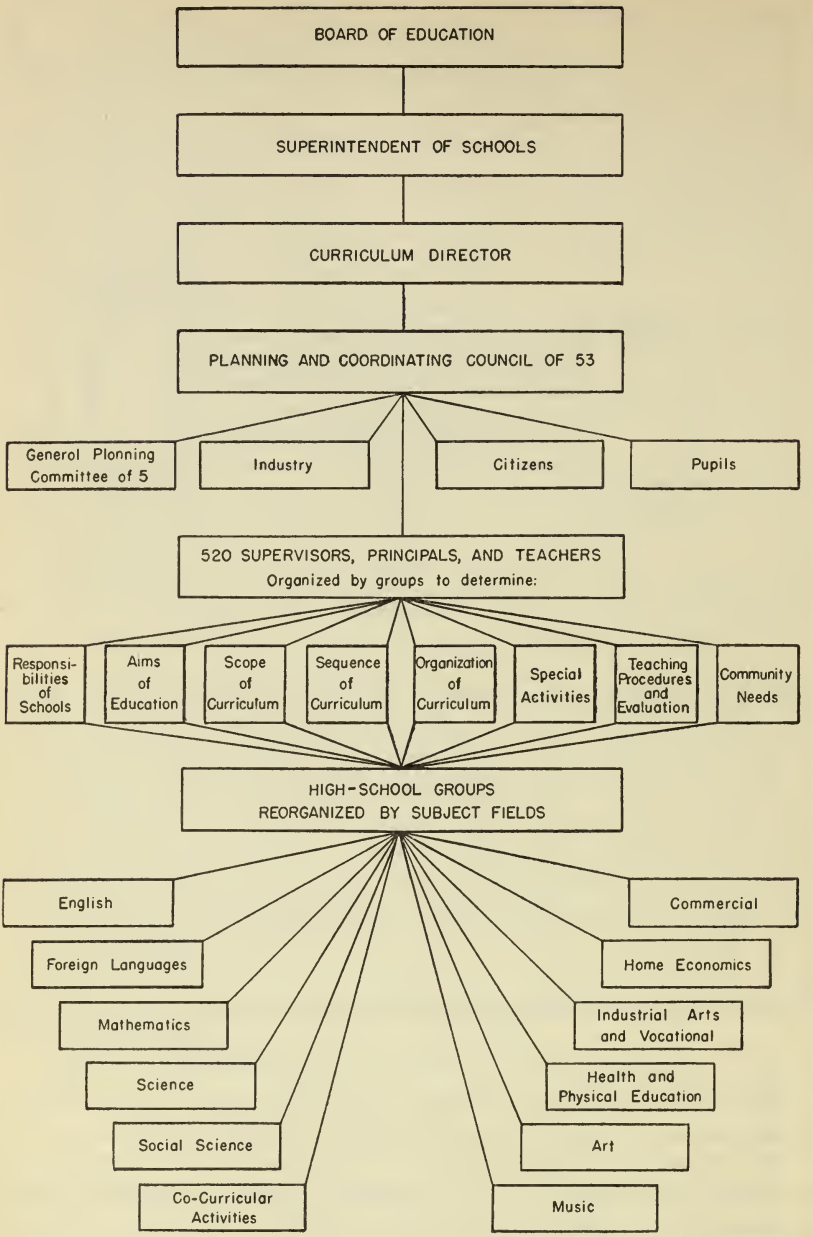
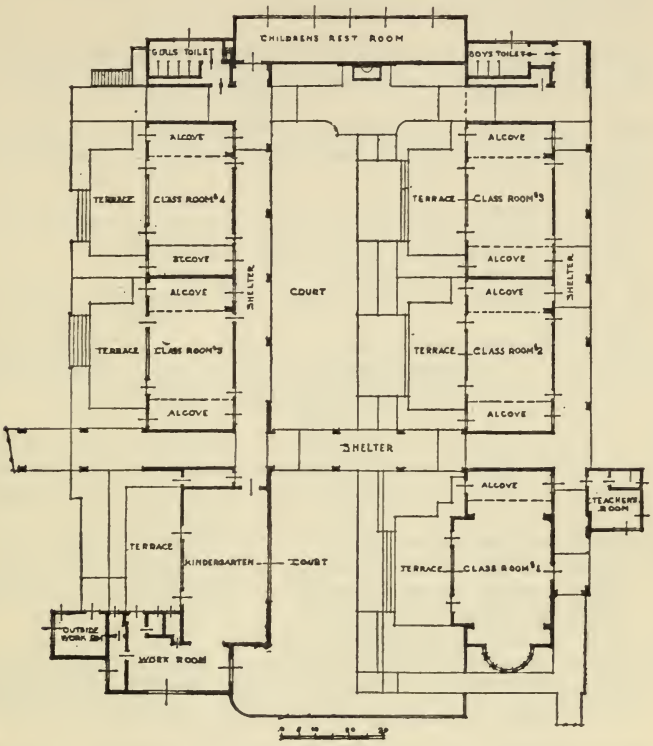


CHART 1.—Organization of Cooperative Curriculum Study for the Arthur Hill High School, Saginaw, Mich.

mittee consisted of 150 members and from this committee 3 subcommittees of 12 members each were appointed. Chart 1 shows the organization for curriculum study.

The second step in the planning of the building was that this committee, on the basis of the curriculum study, worked out certain educational specifications for the high school, together with a sketch plan for the building.



Huntington Park Elementary School, San Marino, Calif., floor plan.

Statement of

EDUCATIONAL SPECIFICATIONS

for

PROPOSED ARTHUR HILL HIGH SCHOOL

to accompany sketch plan

General Considerations:

1. The proposed Arthur Hill High School, Saginaw, Mich., is planned as a senior high school building that will be capable of progressive extension into an upper secondary school of the comprehensive type, containing grades 11 through 14.
2. The ultimate working capacity is for 2,400 students, with an immediate working capacity for 1,700 students.

3. The building is planned for the comprehensive type of program with no provision for trade or industrial education, since this need is already cared for in a specialized trade school.

4. The building is planned to be administered on the homeroom plan for social control and guidance, and on the library-self-directed-study-plan for preparation of class assignments.

5. The school day has been considered as six periods of one clock hour each, with the necessary time deducted for passage between classes.

6. Each student will be programmed on the average of five class periods a day, allowing one free period for preparation of lessons within the school.

7. The typical student program includes four academic subjects, one period in fine arts or health and one period in library-study.

8. The mean class size will be 35 except in the gymnasium, auditorium, and in music.

9. Provision for self-directed-library-study has been made for a total of 440 students based on the ultimate 2,400 student capacity.

10. The building has been designed with maximum internal and external flexibility. Every class unit has easterly or westerly exposure, since the contemplated site provides for northeast and southwest orientation.

11. A standard construction unit of 22 by 15 feet has been used. Each construction unit has been designed as an individual unit complete with natural lighting, artificial lighting, direct radiation, tempered intake and vent ducts for ventilation.

12. All dividing partitions between classroom units have been designed as curtain walls that may be removed easily whenever educational demands require changes in the classroom units as originally established.

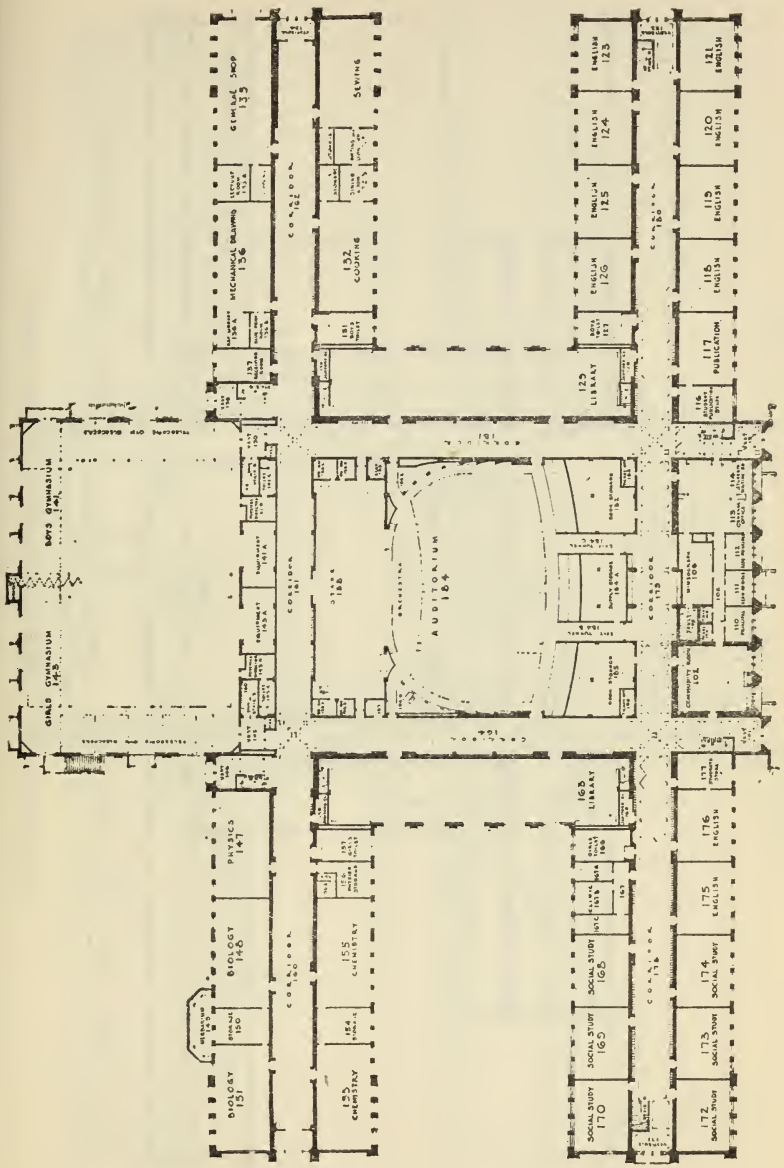
13. Students' wraps are to be administered through individual hall lockers (60 inches high), equipped for padlock use, set flush in the corridor side of the breather well.

14. The building is designed to make all or part of it conveniently available for adult use during late afternoons and evenings. Large units have been massed and centered for this purpose.

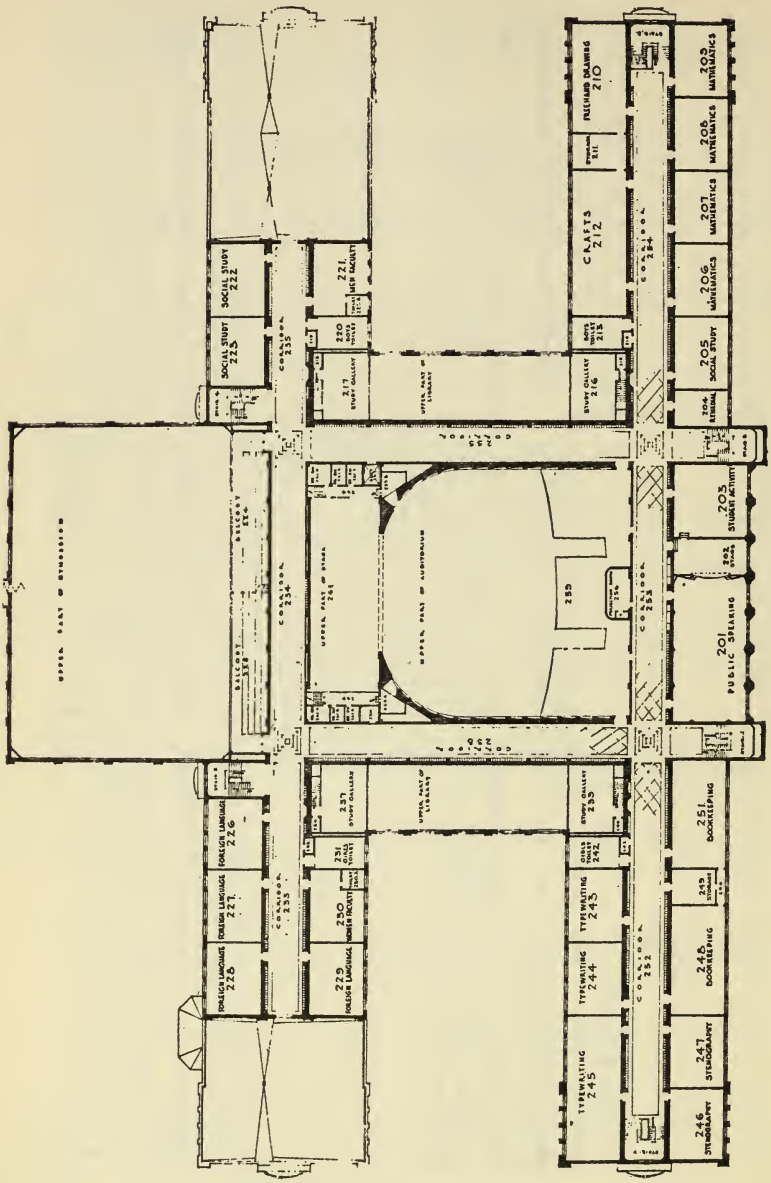
15. The student and adult program requirements for physical facilities were taken from the schedule prepared by the superintendent.

The third step was the preparation of specific requirements for each unit in the building, i. e., size of units, floor location, square feet per student, standard capacity of the unit; with the number of rooms for either 2,400 or 1,700 students.

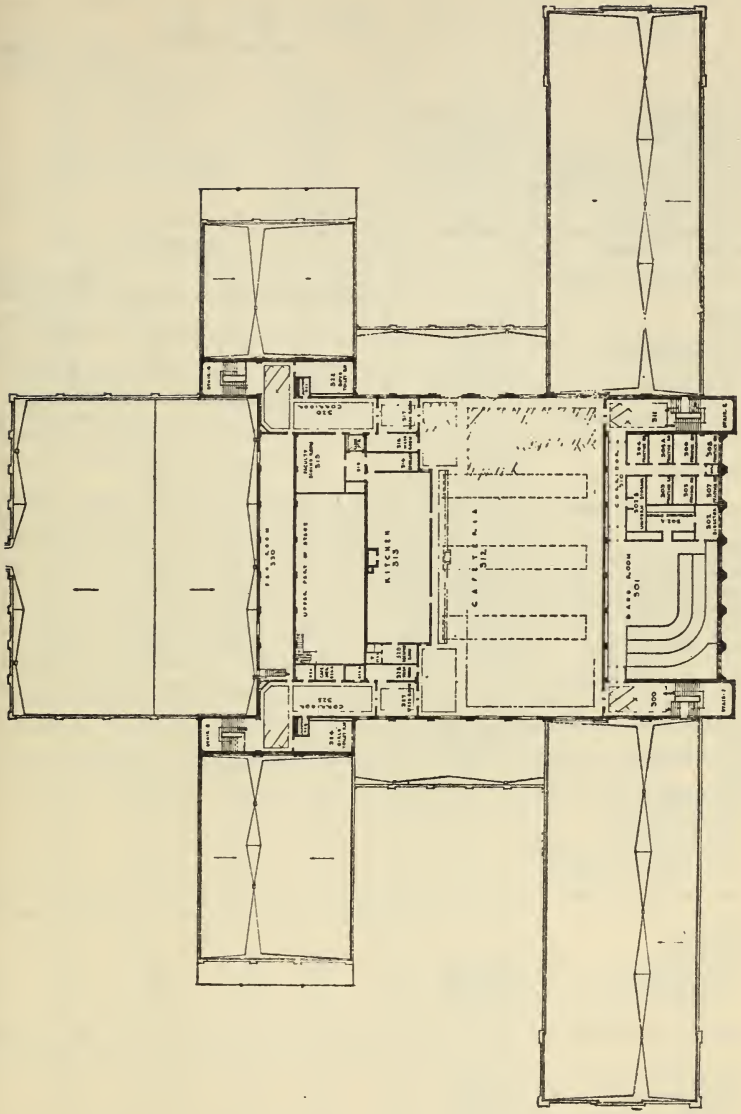
The fourth step was the development of the floor plans so as to provide the number, size, and location of rooms required by the educational program (first, second, and third floor plans, and plot plan of Arthur Hill High School, Saginaw, Mich.).



First Floor Plan, Arthur Hill High School, Saginaw, Mich.



Second Floor Plan, Arthur Hill High School, Saginaw, Mich.



Third Floor Plan, Arthur Hill High School, Saginaw, Mich.

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THE ARTHUR HILL HIGH SCHOOL, SAGINAW, MICH.

Facilities, size of units, floor location, square feet per student, standard capacity, and number of rooms for 2,400 and 1,700 students

Type	Size	Floor location	Square foot per student	Standard capacity	Number of rooms	
					2,400	1,700
HEALTH:						
Boys' gymnasium	67.5 by 90	1	30	200	1	1
Girls' gymnasium	67.5 by 90	1	30	200	1	1
Physical director	10 by 20	1			2	2
Gym storage	15 by 30	1			2	2
Girls' locker and shower room	67.5 by 90	B			1	1
Boys' locker room, shower room, and laundry.	67.5 by 90	B			1	1
Spectators' balcony	15 by 120	2	6	*500	1	1
Medical clinic and infirmary	22 by 30	1			1	1
Cafeteria and kitchen		3		*500	1	1
Total capacity per period					**400**	**400**
LANGUAGES:						
English	22 by 30	1	18	35	12	10
Foreign languages	22 by 30	2	18	35	5	4
School publications	22 by 30	1	18	35	1	1
Remedial	22 by 15	1	18	*10	1	1
Public speaking	See music	2				
Total capacity per period					**630**	**525**
SOCIAL STUDIES:						
Classrooms	{22 by 30	1	18	35	6	6
	{22 by 30	2	18	35	7	3
Total capacity per period					**455**	**315**
EXACT SCIENCE:						
Physics laboratory	22 by 45	1	25	35	1	1
Physics storeroom	22 by 15	1				
Chemistry laboratory	22 by 45	1	25	35	2	2
Chemistry storeroom	22 by 15	1				
Biology laboratory	22 by 45	1	25	35	2	2
Biology storeroom	22 by 15	1				
Mathematics classroom	22 by 30	2	18	35	8	4
Total capacity per period					**455**	**315**
FINE ARTS:						
Free-hand drawing	22 by 45	2	25	35	1	1
Craft	22 by 45	2	25	35	1	1
Fine arts storeroom	22 by 15					
Music:						
Instrumental music unit	100 by 105	3	30	100	1	1
Music library		3			1	1
Instrument storage		3			1	1
Practice rooms		3			1	1
Vocal and public speaking		2	20	35	1	1
Mechanical reproduction		2		12	1	1
Total capacity per period					**217**	**217**
VOCATIONAL:						
Commercial:						
Bookkeeping	22 by 45	2	25	35	2	2
Typewriting	22 by 30	2	18	35	3	2
Stenography-trans	22 by 60	2	18	35	2	2
Typing	22 by 60	2	20	70	1	1
Total capacity per period					**315**	**280**
Homemaking:						
Foods	22 by 45	1	25	35	1	1
Foods storeroom	22 by 15	1				
Clothing	22 by 45	1	25	35	1	1
Dressmaking laboratory	22 by 15	1				
Total capacity per period					**70**	**70**

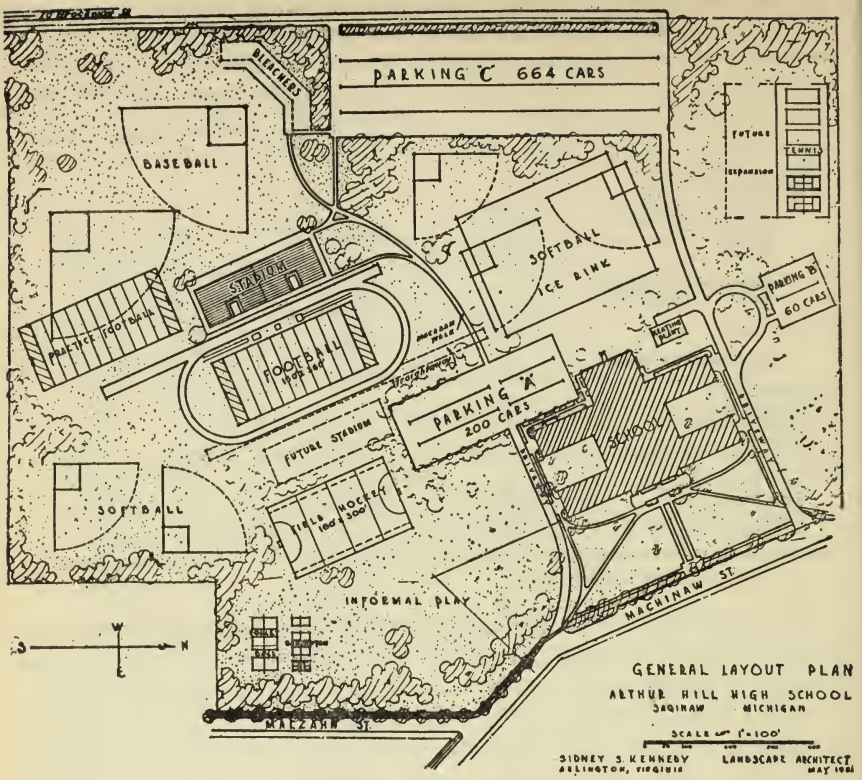
See footnotes at end of table.

Facliities, size of units, floor location, square feet per student, standard capacity, and number of rooms for 2,400 and 1,700 students—Continued

Type	Size	Floor location	Square foot per student	Standard capacity	Number of rooms	
					2,400	1,700
VOCATIONAL—continued						
Mechanical:						
Mechanical drawing	22 by 45	1	25	35	1	1
Stores and blueprint	22 by 15	1				
General shop	22 by 60	1	35	35	1	1
Stores	22 by 15	1				
Total capacity per period					70	70
Grand total, vocational					420	420
Library—study	30 by 120	1	18	220	2	2
Total capacity per period					440	440
ADMINISTRATION:						
Office suite	30 by 105	1			1	1
Diagnostic clinic	22 by 30	1			1	1
AUDITORIUM:						
Community and school use	100 by 105	1	6.5	*1,600	1	1
OPERATION:						
Boys' toilets	22 by 15	1, 2, 3			8	6
Girls' toilets	22 by 15	1, 2, 3			8	6
Teachers' restroom	22 by 30	2			2	2
Janitors' closets	22 by 30	1, 2, 3			8	6

*Does not add to instructional capacity.

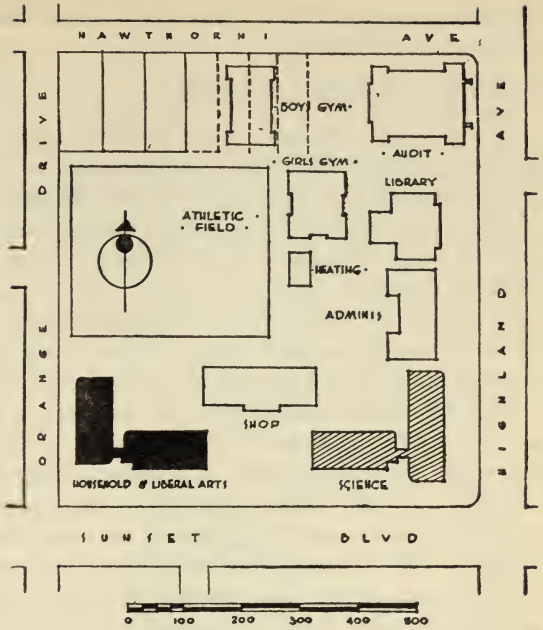
The planning of this high-school building in Saginaw, Mich., has been described in detail because it is an outstanding example of the functional planning of a school building involving the board of education, the superintendent, principals, teachers, pupils, lay groups, and architects, with the stated purpose of planning both a curriculum and a building which will meet the needs of children, youth, and adults today. Space does not permit of such detailed description of the planning of other modern high-school buildings. However, two other buildings are mentioned because they illustrate different types of school-building designing for a modern high-school curriculum.



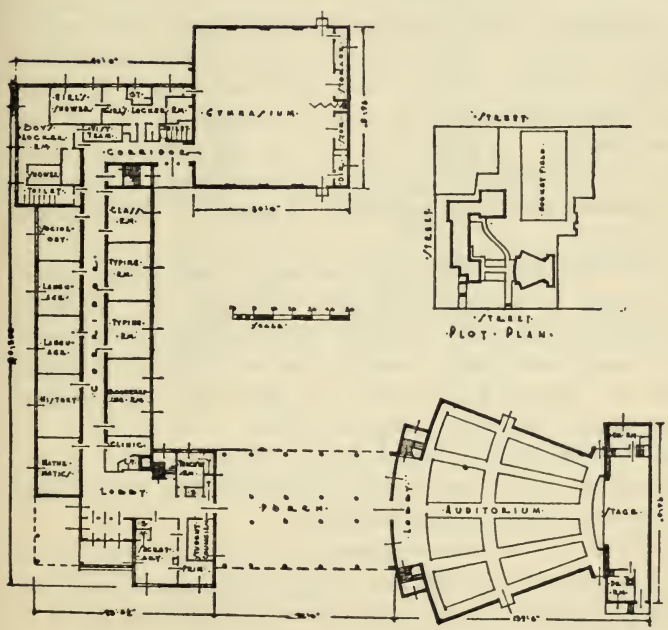
Plot Plan, Arthur Hill High School, Saginaw, Mich.

The school plant for the Hollywood High School, Los Angeles, Calif., is an illustration of the housing of a school plant in a number of separate buildings. Of course this can be done only where the plot plan is sufficiently large to make possible the erection of separate buildings. This high school is housed in eight separate buildings, i. e., an administration building, an auditorium, boys' gymnasium, girls' gymnasium, a library, shop building, science building, and household and liberal arts building. Each of the latter contains classrooms in addition to special rooms for art and domestic science, and science. The buildings are designed and constructed to resist earthquake shocks, in accordance with the law governing school-building construction in southern California (plot plan, Hollywood High School).

In contrast to this large school plant is a high school of moderate size at Ansonia, Conn. This building is interesting as a distinct



Hollywood High School, Los Angeles, Calif., Plot Plan.



Ansonia High School, Ansonia, Conn.

departure from the usual architectural planning of school buildings. Note the location of the auditorium, which is separated from the main building by a porch, above which are classrooms. The gymnasium

and lockers are on the other wing of the building (first-floor plan, Ansonia High School).

Planning Room Lay-outs.

One of the most interesting developments of recent years in the planning of school buildings has been the careful consideration given to the planning not only of the details of individual rooms but of the location and kind of built-in and movable equipment so as to make possible the more effective use of the activities to be carried on in the different rooms.

In elementary schools.—Until comparatively recently the planning of an elementary-school room received very little attention. It was assumed that what was needed was a given number of desks and seats, a teacher's desk, blackboards on the wall, a little cork board along the top of the blackboards, and a small closet for the teacher's wraps. But with the development of an elementary-school curriculum that calls for activities in the classrooms, there has developed much more attention to the careful planning of room lay-outs for elementary schools. The kindergarten has always received particular attention, but in recent years the kindergarten has become one of the most carefully planned rooms in the school.

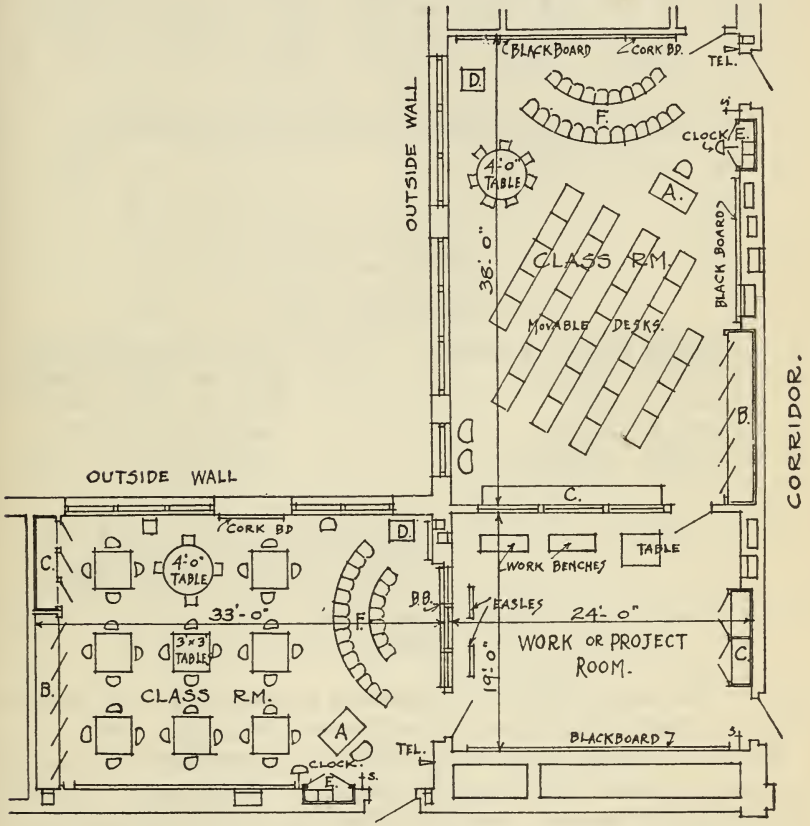
In the past there was a great difference between the kindergarten room with its tables and chairs, its play materials, book cases, aquarium, etc., and the first- and second-grade rooms with their stiff lines of desks and seats. But in recent years there has been a tendency to break down these differences so that the transition to the first grade is not so drastic. In many schools now the first-grade room has movable tables and chairs and equipment for a variety of activities (fig. 1, room lay-outs, first- and second-grade rooms, C. M. Bardwell School, Aurora, Ill.).

One of the special rooms in elementary schools which has been given attention with regard to special equipment is the library. In many elementary schools now there is a specially equipped library room with regular library tables and chairs, book shelves and books, librarian's receiving table, etc. Figure 2 gives the room lay-out for elementary-school libraries in the Portland, Oreg., schools.

Another type of special room which is now often included in elementary schools is the music room (fig. 3, room lay-out for elementary music room, Pittsburgh public schools).

Room lay-outs for high schools.—Attention always has been given to the planning of rooms for special activities in high-school buildings, but during recent years in which more attention has been given to the careful functional planning of buildings for a greater variety of activities, corresponding progress has been made in detailed planning of room lay-outs for these activities. But the variety of subjects

taught and the variation in planning room lay-outs for different high-school programs is so great that it would require a separate bulletin to treat the subject adequately. For example, in many high schools one subject, music, often requires the following specially equipped rooms: General music room, band room, orchestra room (with space for storing instruments), choral room, history of music room, and harmony room. Such specialization is desirable because music is important for high-school students not only for its cultural value but also for its economic value. Many students work their way through college by playing in bands or orchestras. Furthermore, these various music rooms are used by out-of-school youth and adults after school



A - TEACHERS DESK
B. - WARDROBES
C. - STORAGE CASES
D. - VICTROLAS
E. - TEACHERS CASE
F. - SMALL CHAIRS

FIGURE 1.—Room Layout, First and Second Grade Rooms, Bardwell School, Aurora, Ill.

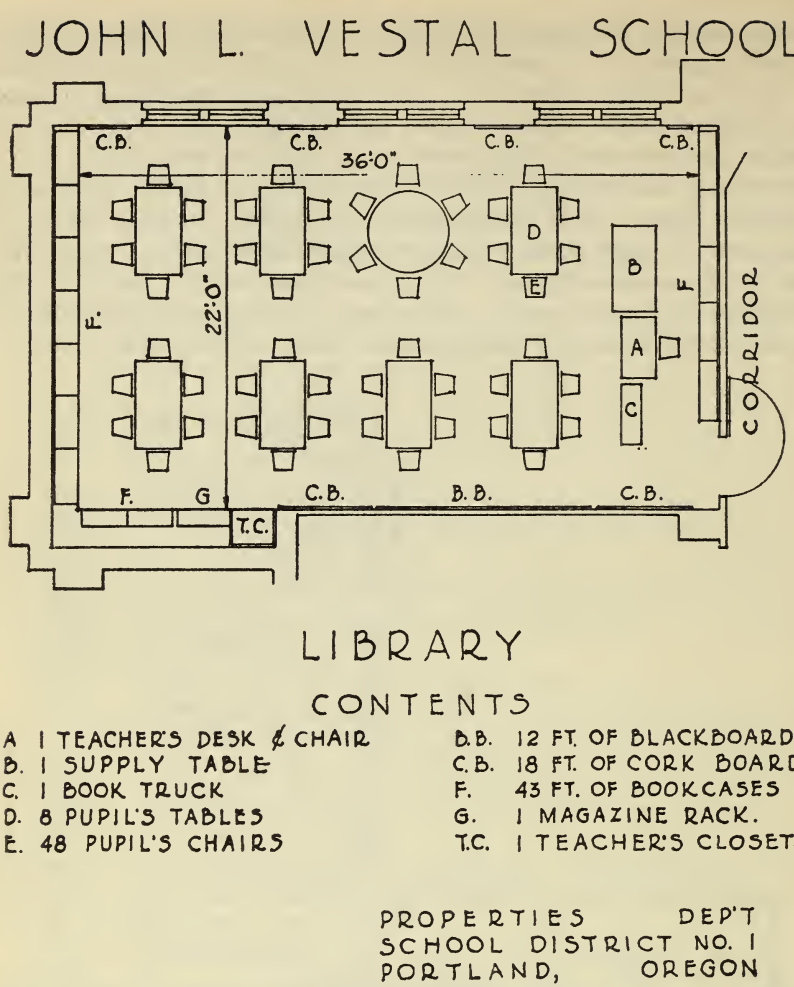


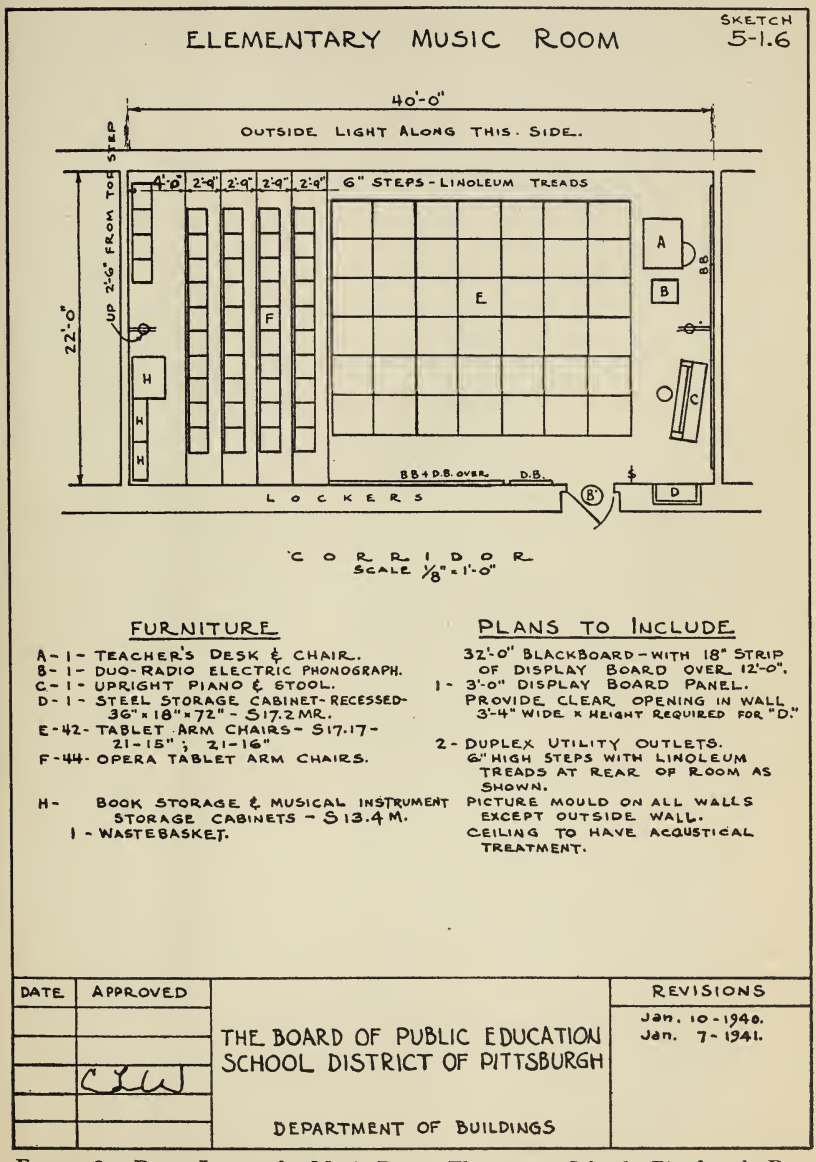
FIGURE 2.—Room Layout for Library, John L. Vestal Elementary School, Portland, Oreg.

hours. Therefore, their careful planning is essential for the development of a high-school plant that will serve community needs.

But music is only one of many subjects in a high-school curriculum for which special units must be provided. Experienced architects now realize the necessity for full information on how each room is to be used before they undertake even preliminary sketches. An example of the detailed information required by the architect in order to plan adequately for even one special-subject room in a high-school building is given in the *Requirements of a Music Department in a High School*, prepared by John J. Donovan, architect, Berkeley, Calif. Such careful planning *before* construction is economical both

in time and money since it prevents many mistakes which would seriously handicap the work to be carried on after the building is completed.

Planning the auditorium.—One of the most important advances during the past 10 years in the planning of school buildings is the better planning of the school auditorium. This is one of the most



FURNITURE

A - 1 - TEACHER'S DESK & CHAIR.
B - 1 - DUO-RADIO ELECTRIC PHONOGRAPH.
C - 1 - UPRIGHT PIANO & STOOL.
D - 1 - STEEL STORAGE CABINET - RECESSED - 36" x 18" x 72" - S17.2 MR.
E - 42 - TABLET ARM CHAIRS - S17.17 - 21-15" ; 21-16"
F - 44 - OPERA TABLET ARM CHAIRS.
H - BOOK STORAGE & MUSICAL INSTRUMENT STORAGE CABINETS - S13.4 M.
1 - WASTEBASKET.

PLANS TO INCLUDE

32'-0" BLACKBOARD - WITH 18" STRIP OF DISPLAY BOARD OVER 12'-0".
1 - 3'-0" DISPLAY BOARD PANEL. PROVIDE CLEAR OPENING IN WALL 3'-4" WIDE x HEIGHT REQUIRED FOR "D."
2 - DUPLEX UTILITY OUTLETS.
6" HIGH STEPS WITH LINOLEUM TREADS AT REAR OF ROOM AS SHOWN.
PICTURE MOULD ON ALL WALLS EXCEPT OUTSIDE WALL.
CEILING TO HAVE ACOUSTICAL TREATMENT.

DATE	APPROVED		REVISIONS
		THE BOARD OF PUBLIC EDUCATION SCHOOL DISTRICT OF PITTSBURGH	Jan. 10-1940. Jan. 7-1941.
	C L W		
		DEPARTMENT OF BUILDINGS	

FIGURE 3.—Room Layout for Music Room, Elementary Schools, Pittsburgh, Pa.

important units in the school building because a well-planned auditorium is essential if a school building is to serve as a center for community activities.

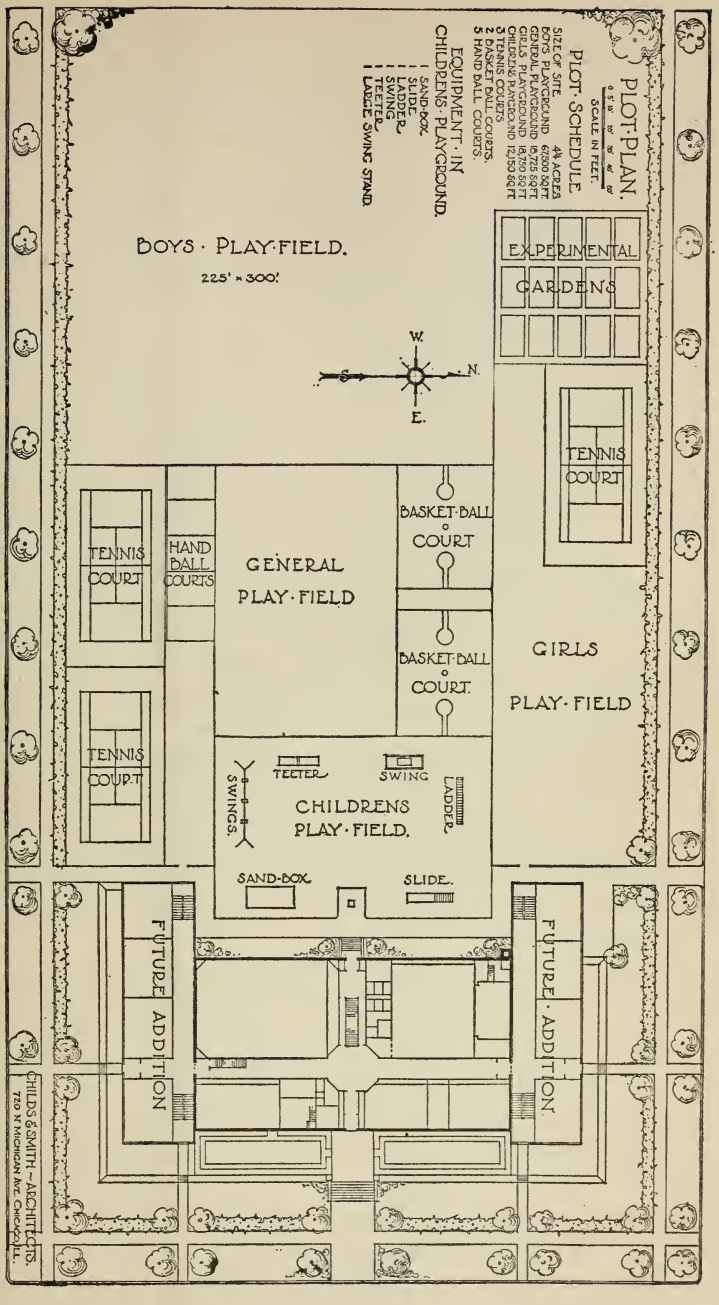
The auditorium has been the least well-planned unit in the building until recently because there has been considerable confusion as to how the auditorium should be used. In the early pioneer days when the school consisted of one or two rooms for teaching the three R's, the building contained no auditorium. As cities developed and a larger number of children had to be housed under one roof, it was thought necessary to have one central place where the principal could make announcements and where graduation exercises could be held. Buildings were constructed, therefore, with a hall which could be used as a study hall and an "assembly hall." The whole school assembled in this hall at the beginning of school for opening exercises, which lasted 5 or 10 minutes.

This assembly hall was literally a hall with a small platform at one end and a level floor with desks and seats or movable chairs. Although these assembly halls were sometimes used by the community, they were essentially school halls which, after opening exercises in the morning, were unused for most of the regular school day. They were used for an occasional special performance and for graduation exercises at the end of the year.

In recent years, however, the shorter working day with consequent increase of leisure time has greatly increased the demand by adults for places in which to use this leisure time. Furthermore, it is now generally recognized that training for leisure-time activities in school is one of the responsibilities of the school. This means that dramatics, motion pictures, radio, and forum discussion are now accepted activities in the school program.

However, to plan an auditorium to meet the needs of the schools and of the community now requires the combined services of the school administrator, school principal, architects, scenic designers, and lighting experts. The school officials outline the purposes of the auditorium and the kind of activities to be carried on in it, both during the school day and in the evening; the architect, scenic designer, and lighting expert have the task of planning the auditorium so that these activities can be carried on most effectively and efficiently. Mistakes made in the past in planning auditoriums are eloquent arguments for cooperative planning of this important unit in the building. For example, in the past the majority of auditoriums have been too large, the stage has been too small, and there has been no provision for off-stage space.

In the past 10 years, however, there has been decided progress in the better planning of auditoriums. For example, with respect to size, the trend now is toward the erection of auditoriums that seat



Joseph Koenig School, Two Rivers, Wis., plot plan.

33 to 50 percent of the capacity of the school. The reason for this is that with the tendency toward the erection of high schools for 1,200 or more students, an auditorium with that seating capacity

destroys the very purpose for which the auditorium is built. Very few professional theaters have a capacity of even 1,000 seats, for very few professional actors can project their trained voices or "get across the footlights" in a theater with 1,000 seats or more. Much less is it possible for school children to present plays effectively in auditoriums of that size.

Another important development that has been made in the auditorium is in the planning of the stage. The most common mistake in the past in the planning of the stage was to make the proscenium opening too wide and the stage too small. Cooperative planning on the part of school administrators and architects, however, has brought about a recognition of the fact that the proscenium opening should not be wider than 30 to 32 feet, that the stage should be not less than 25 feet deep, and that the width of the off-stage space should be equal to the width of the proscenium arch. The reason for this emphasis upon the proscenium opening and off-stage space is that working space back-stage and off-stage is as important as the acting area of the stage. It is impossible to shift furniture or scenery if there is no place to put it off-stage. Furthermore, ample off-stage space is essential on school stages where chorus groups are so often involved.

In addition to space, it is now realized that light is the prime requisite of a stage. Enough electric light flexibly and sensibly controlled is an essential part of any theater, however small. If a school theater is to be a source of aesthetic training and afford a rounded aesthetic experience for students who participate in it, light, which is one of the essential materials that they need to know and master, must be technically complete and correctly installed. Fortunately, the technical advances in this field have been so considerable in the past 10 years that there is now no reason why any school should not be able to obtain technical assistance in the planning of this important feature of auditoriums.[1]

The site.—One of the first results of the better planning of school plants has been the more systematic and far-sighted planning of the school site so as to provide play areas. A quarter of a century ago school buildings were often located on sites which were chosen because they were not desirable for any other purpose. They were usually small and irregular in shape, and the ground was not level. Usually the building was placed in the center of the site leaving little or no clear space for play. Now, however, the tendency is to provide sites of 5 to 10 acres for elementary schools and 16 to 20 or 30 acres for high schools. With the building placed on one leg of the site within easy, but not too close, access to the street, the remainder of the site is made available for a great variety of play and recreational activities. The plot plan of the Joseph Koenig School, Two Rivers, Wis.,

[1] Barrows, Alice, *and* Simonson, Lee. The School Auditorium as a Theater, U. S. Office of Education Bulletin 1939, No. 4.

PLOT PLAN

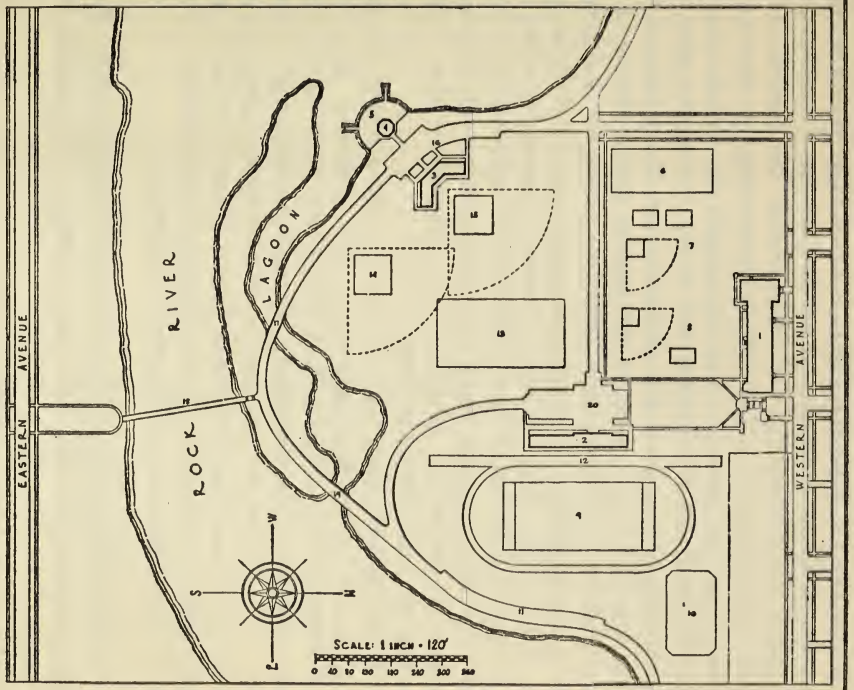
1. School Is Located In Public Park.
2. Size Of Site Devoted Primarily For School And School Playgrounds 5½ Acres.
3. Majority Of Park Is Devoted To High School Fields And Public Playgrounds.
4. Boys Playground 91,560 Square Feet.
5. Girls Playground 53,320 Square Feet.

SCHEDULE OF GROUNDS

1. School	11. Parking Area
2. Stadium & Field House	12. ¼ Mile Running Track
3. Grandstand	13. Practice Football Field
4. Refreshment Stand	14. Practice Baseball
5. Boat Dock	15. Baseball Diamond
6. Tennis Courts	16. Parking Area
7. Boys Playground	17. Bridge
8. Girls Playground	18. Foot Bridge
9. High School Field	19. Bridge
10. Tennis Courts	20. Parking Area

NOTE:

This Entire Project Will Be A Future Developement With The Exception Of The Boys & Girls Present Playground.



Wilson School, Janesville, Wis., plot plan.

is an example of such a lay-out. (See plot plan.) The plot plan of the Wilson School, Janesville, Wis., is an example of the use of the combination of school grounds and public park for recreational purposes. Both the elementary and high schools are located on this plot. The arrangement is particularly interesting as showing the utilization of natural resources and topography for the development of play and recreation for children and adults. (See plot plan.)

As an extensive program of play and recreation has developed, more attention has had to be given to the grading and surfacing of play areas for different types of play activity—games for the primary children with apparatus that must rest upon some kind of hard surfacing; and for the older children, baseball diamonds, volley ball, tennis courts, and football fields. For all these activities it is important that the playing surface should be firm but not so hard as to lead to accidents; it should dry quickly after a rain, but it should not be dusty or rough with cinders or stone.

During the past 10 years there has been a considerable amount of research on surfacing of playgrounds. For example, the United States Housing Authority has published for the guide of their regional directors analyses of the different methods of treating the surface of playgrounds, including the formula for each method and comments on the advantages and disadvantages of each. Another valuable report on the subject is a bulletin by the National Association of Public School Business Officials on *Playground Surfacing.*[2]

Inter-relation Between School Plant Planning and Reorganization of Schools into Larger Administrative Units.

An enriched school curriculum is needed for children and youth whether they are in cities or in so-called rural areas. But the modern school curriculum with its variety of activities cannot be carried out effectively in small district school buildings of one to three rooms. Therefore, the elimination of small school districts and the reorganization of schools in a given area into larger administrative units[3] is recognized as one of the greatest needs of rural school areas. For example, in the study, *Local School Unit Organization in 10 States*, by the U. S. Office of Education in collaboration with State departments of education, it was pointed out that since it is practically impossible to provide in a one-teacher school the educational offerings

[2] Playground surfacing—Bulletin No. 7. National Association of Public School Business Officials, Harold W. Cramblet, sec., 341 South Bellefield Avenue, Pittsburgh, Pa.

[3] "An administrative unit as defined comprises all the area under a single system of school administration. Its schools are controlled by a board of education of which the executive official is the superintendent of schools. Such an administrative unit generally constitutes a local taxing unit."—Statistics of State School Systems, 1937–38, Biennial Survey of Education in the United States, U. S. Office of Education Bulletin 1940, No. 2, ch. II, p. 2.

essential for a well-balanced school program, the multiplicity of one-teacher schools * * * constitutes a serious problem. Furthermore, the report also proved that small schools are generally not only inefficient but are also relatively expensive. For example, the average instructional cost per pupil in one-teacher schools in Tennessee was $25, while in the larger schools it ranked approximately $20 to slightly more than $22. * * * Oklahoma's study revealed that the cost per pupil per day in one-teacher schools was 30 cents, as compared with a cost of less than 20 cents in schools having six teachers or more.[4]

For years, however, one of the chief stumbling blocks in the way of reorganization of small school districts into larger administrative units has been the existence of too many small buildings and lack of funds for the construction of larger centralized school buildings. It is recognized now that plans for reorganization of school districts which do not include estimates of school plant needs and provision for securing funds for the necessary building lack one important step in such reorganization. On the other hand, school building programs which are not based upon reorganization of schools into larger administrative units are neither functional nor economical. In other words, reorganization of school districts and school plant planning go hand in hand.

Funds for the construction of new buildings are often the determining factor in whether plans for reorganization which involve new buildings are actually carried out. It is more than a coincidence, therefore, that there was a decrease of 8,352 school administrative units during the period 1933–38[5] when Federal grants and loans were made available to local communities for school building construction. These Federal grants and loans by the Public Works Administration made it possible for school administrators to accelerate considerably the elimination of small schools and the organization of larger administrative units. For example, in a study of 1,965 completed buildings it was found that each of 150 buildings erected with Public Works Administration aid eliminated 2 to 3 existing buildings; each of 49 buildings eliminated 4 to 5 existing buildings; each of 28 buildings eliminated 6 to 9 buildings; and each of 17 buildings eliminated 10 or more existing buildings.

Long-range Studies of School Plant Needs.

One of the most significant trends in the past 10 years has been the increased activity in the field of long-range surveys of school plant needs by State departments of education.

[4] Local School Unit Organization in 10 States. Local School Units Project, U. S. Department of the Interior, Office of Education, Bulletin 1938, No. 10.

[5] In 1933, the number of school administrative units in the United States was 127,244, and in 1938 it was 118,892. *See* School Administrative Units with Special References to the County Unit, U. S. Department of the Interior. Office of Education Pamphlet (1933) No. 34, *and* Statistics of State School Systems, Biennial Survey of Education in the United States, U. S. Office of Education, Bulletin 1940, No. 2.

Long-range studies of school plant needs are now carried on in most large cities. In many cities they are continuous in character because errors in estimating population growth and in the location and erection of school buildings are so expensive that continuous surveys of school plant needs are essential to prevent waste. But long-range studies of school plant needs for areas outside of cities are equally, if not more, important. Such surveys are an essential part of the reorganization of schools into larger administrative units because school building construction without long-range surveys tends to freeze the administrative set-up in its existing form.

Furthermore, these surveys are needed in order to educate the public in areas outside of cities to the fact that social and industrial changes and technological changes in methods of transportation and communication have broken down the distinction between "urban" and "rural," and therefore have made the old classification of schools into "urban" and "rural" unrealistic. Communities outside of cities are now divided into suburban communities within commuting distance of large cities, rural non-farm communities, villages varying in population from 100 to 4,000, and finally, rural farm areas. With the exception of the last classification, these so-called rural communities bear little resemblance to the rural community of former days. On the contrary, in their occupations and social and community activities they are more urban than rural in character. Furthermore, recent studies have shown that the American people are among the most mobile in the world. The fact that children are brought up in one community does not necessarily mean that they will spend their adult life in the same community. Consequently, it is necessary that children in all these different types of communities be given the enriched educational opportunities which will provide the foundation for adapting to the changing conditions of a rapidly changing civilization.

A school building survey of Rockland County, N. Y., conducted by the U. S. Office of Education in 1935, illustrates rather strikingly the fact that changing social and industrial conditions require changes in the educational program, in the administrative organization of school districts, and in types of school buildings in a so-called rural area.

Rockland County, N. Y., is situated 30 miles from New York City. Until comparatively recently it was a strictly rural area. Farming was the chief occupation and farm produce was sent first by boat and then by train to New York City. People lived and worked in the county. In 1876 it took more than 2 hours to reach New York City or New Jersey but by 1935, thanks to the automobile, the time distance from New York City had been reduced to less than 1 hour (chart 2). By 1935 only 4.3 percent of the workers in the county were



MAP OF
ROCKLAND COUNTY
NEW YORK
SHOWING
DISTRIBUTION OF PUBLIC SCHOOL PUPILS
By Grades 1–12 Inclusive
According To Residence 1932–33

629976—45 (Face p. 29)

MAP 1.—Distribution of School Population, Rockland County, N. Y., 1935.

farmers; 72.5 percent were in clerical, mechanical, manufacturing, trade, transportation, or professional occupations. In 1935 the population was located in 6 centers. Thirty-nine percent of the school population in the county was located in what were called "villages," e. g., Nyack, but the majority of the children were located in centers of population which though not called villages had as large a population as the so-called "villages" (map 1). In spite of the fact that the school population was actually concentrated in 6 centers in the county, there were 47 school districts and 49 school buildings located within an average of 2 miles of each other (map 2).

Of the total schools, 54.3 percent were 1- to 3-room buildings. In other words, in a county within 30 miles of New York City, a county that in occupations, habits of living, attitudes, and interests was not rural but urban in character, the school organization was still a district school organization and more than 50 percent of the school buildings were 1- to 3-room schools which were entirely unadapted to modern school needs.

The survey revealed that if the schools were reorganized into larger administrative units, 12,187 pupils could be housed in 26 school buildings in 6 centralized school districts at less cost per pupil ($119) than the cost per pupil ($120) required for 11,791 pupils housed in 49 school buildings in 47 school districts in 1935. Furthermore, by such reorganization it was possible to provide in the 26 buildings, 194 special-

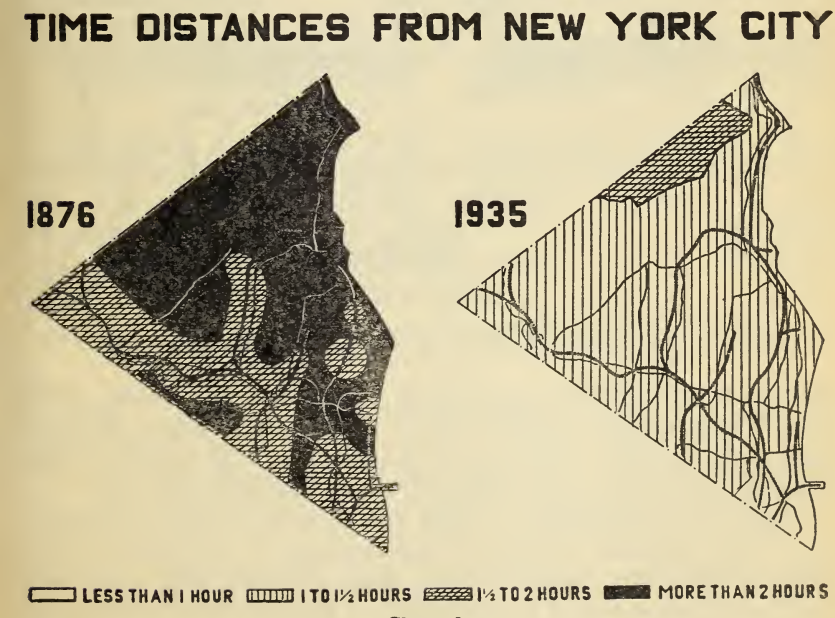
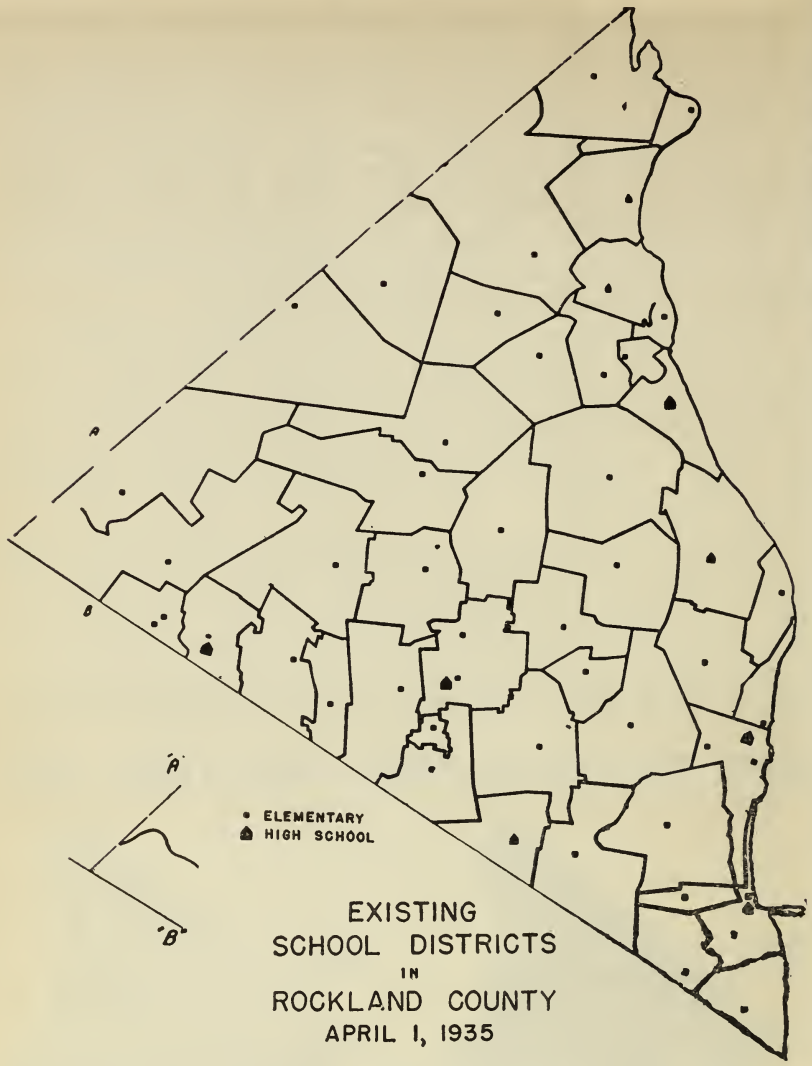


Chart 2.



MAP 2.—Existing School Districts in Rockland County, April 1, 1935.

activity rooms including auditoriums, gymnasiums, art rooms, music rooms, nature-study rooms, science laboratories, shops, domestic science, domestic-art rooms, etc., as against 61 such special-activity facilities provided in the existing 49 school buildings (chart 3).

That such reorganization would not increase the cost of maintenance and operation is shown by the fact that in the existing school plant of one of the villages, Nyack, which included both elementary and high schools with a great variety of special activities including an adequate gymnasium, science laboratories, art rooms, library,

domestic-science rooms, sewing room, bookkeeping and typewriting rooms, cafeteria and shops, the per pupil cost was $17.20 as against a per pupil cost of $17.19 for maintenance and operation of 1- to 3-room schools which contained classrooms only.[6]

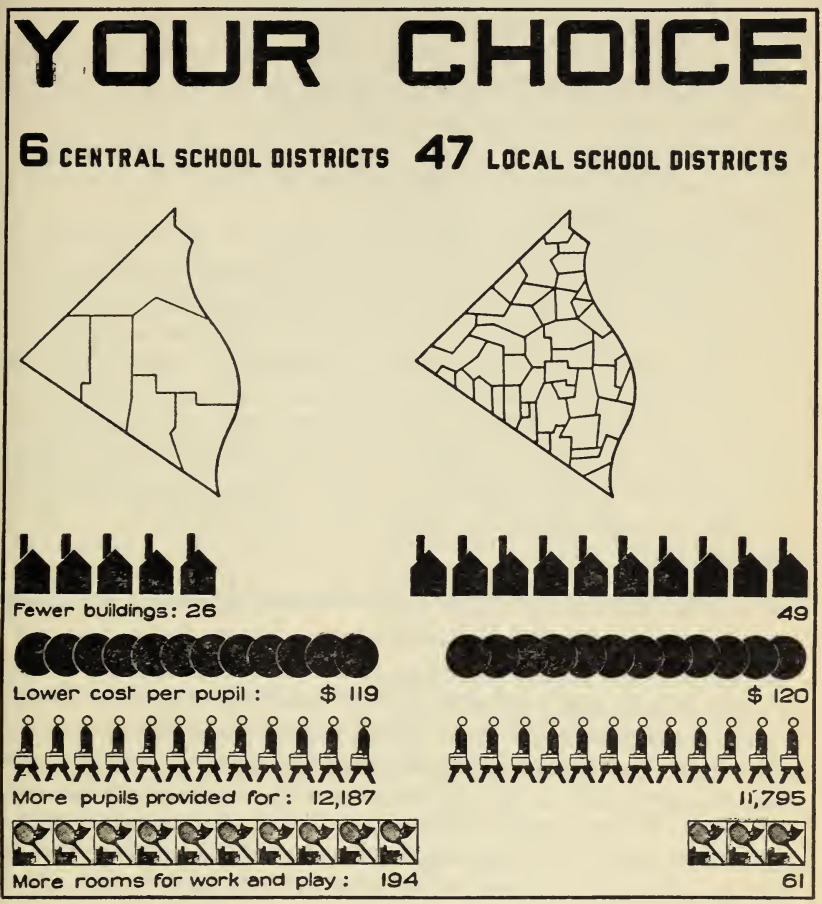


CHART 3.—Buildings, Facilities Provided, Capacity, and Cost Under Centralization Versus Local School District Organization for Rockland County, N. Y.

During the past 10 years there has been more progress than in the 30 preceding years in the number of State school plant surveys. California, Pennsylvania, Virginia, Florida, North Carolina, South Carolina, and Mississippi, to mention only a few, have carried on school building surveys for the State as a whole, and, as a result, have planned long-range school building programs. The actual carrying out of these programs may take a number of years but, thanks to

[6] Barrows, Alice. A School Building Survey and Program for Rockland County, N. Y. U. S. Department of the Interior, Office of Education, October 1935. (Mimeo.)

such long-range surveys, the school authorities in these and other States have at least a preliminary blueprint of an adequate school building program which can be carried out as funds permit. Furthermore, such a program is invaluable in providing data to show why two or three small new buildings should not be put up in a section that requires a single, large, well-planned school building.

The economic value of these surveys is indicated by the report from one State department of education, Virginia, which estimates that the State school plant survey in that State, through careful population studies, the elimination of many small schools, and the housing of pupils in centralized schools, saved the State $2,000,000 by preventing the erection of unnecessary buildings.

Limitation of space prevents a description of the techniques in conducting these surveys. Suffice it to say that there has been marked improvement in the scientific planning of long-range studies of school plant needs. These surveys include exhaustive studies in population shifts; estimates of population growth, including the effect of changes in natural resources; developments of marginal lands; changes in types of occupations; and studies of existing community facilities for transportation, recreation, health, etc., together with detailed studies of existing school curriculums and school plants, recommendations for changes in administrative set-ups, and requirements of a modern school building program.

Increased Service in School Building Planning by State Departments of Education.

During the past decade there has been a noticeable increase in both the amount and quality of service in the school building field rendered to local communities by State departments of education. As this subject has been developed in considerable detail in *Assistance on School Plant Problems as a Function of State Departments of Education*, U. S. Office of Education, Bulletin 1940, No. 6, Monograph 4, only a summary of some of the important points in school building work in State departments of education will be given in this chapter of the *Biennial Survey*.

In 22 State departments of education there are school building divisions or services consisting of staffs varying from 1 to 9 members who give all their time to school building work, with funds allocated specifically for that purpose. In 18 State departments work is carried on by State department officials who have other duties than the responsibility for school buildings; and in 8 State departments no one is responsible for school building work.

Noteworthy progress has been made during the past decade in the development of more scientific standards for school buildings. School building planning and construction is a highly technical matter in-

volving knowledge of engineering, architecture, materials, factors making for safety and health, and also factors that need to be taken into consideration for adequate functional planning of school buildings to meet the requirements of educational programs.

Legal regulations in regard to such items as ventilation, heating, lighting, sanitation, and safety exist in school laws in 41 States. In many cases these regulations have been developed without specific reference to school buildings. Within the past 10 or 15 years, however, State departments of education have developed more detailed standards with regard to construction of school buildings until now 21 States have printed standards in addition to school laws. Probably the greatest impetus to this more scientific approach to school building planning has been given by the National Council on Schoolhouse Construction, an organization composed in large part of directors of school buildings in State and city departments of education. This council has a standing committee on standards which has developed standards not only for such items as heating, ventilation, safety, sanitation, etc., but also for the location and lay-out of special-purpose rooms such as kindergartens, libraries, science laboratories, music rooms, art rooms, auditoriums, gymnasiums, and cafeterias. These standards are changed or modified from year to year in accordance with technical advances and changes in the requirements of the curriculum. At the present time, 20 State departments of education have adopted the standards of the National Council on Schoolhouse Construction.

The services rendered local communities by State departments vary from State to State. For example, in 18 States plans and specifications for school buildings are prepared by State departments of education as well as by private architects, but the plans and specifications made by State departments are usually limited to small buildings. In order to help local communities in the functional planning of their buildings, 21 State departments design and distribute suggestions for room lay-outs for classrooms and special-purpose rooms. Twelve State departments prepare plot plans as suggestive material for local communities. An increasing number of States conduct school building surveys at the request of local communities. For example, 31 of the 48 States now conduct school plant surveys or give consultative service on school buildings. In 19 States school building surveys are a regular part of the State department work on school buildings.

Review and approval of plans.—At the present time, in 21 States the law requires that plans and specifications for school buildings shall be submitted to the State department of education for review. In a recent report to the U. S. Office of Education, 39 State departments of education reported that they reviewed plans and specifica-

tions, but in only 21 of these States are local communities required by law to submit plans and specifications to State departments.

Thirty-seven State departments have the power to approve or disapprove plans and specifications, but in only 13 States are communities required by law to abide by the approval or disapproval of plans and specifications for new buildings. There is a difference of opinion as to whether State departments should have the legal power to compel local communities to abide by the approval or disapproval of the location and plans for a school building. Some experts in this field contend that unless the State department has the power to force compliance with the recommendations of the State department based upon a State-wide study of school building needs, then such a study becomes worthless. They point out that the erection of two or three small buildings in an area where one large centralized school is needed may delay indefinitely the reorganization of the school plant and administrative unit on the basis of modern educational needs. Others contend that each community should be free to determine whether a new school building should be erected for the children in the existing school district, regardless of the study of school building needs based upon State-wide surveys.

Part II

The School Building Situation and Needs in the United States

In part I the trends in school building planning have been described. These trends have been summarized for the country as a whole but it should be remembered that the development in functional planning, in school plant surveys, and in the design and construction of buildings varies greatly in different parts of the country. The real problem is to provide adequate school plants based upon enriched educational curriculums for *all* the children in the country. Furthermore, such school plants should provide not only for children in elementary and high schools, but for youth and adults in every part of the country. For this reason, in part II of this report the school building situation and needs in the country as a whole will be considered.

If the school plant problem is to be solved for the country as a whole, the following questions need to be raised: (1) What should we know about the school building situation? (2) What do we know about school buildings for the country as a whole? (3) What are the reasons for the lack of information, and what is needed in order to secure the information? (4) What are the estimated school building needs?

What Should We Know About the School Building Situation?

In order to meet the school building needs for children and youth in the United States it is necessary to make accurate estimates of school building needs for the country as a whole. But the information needed for such estimates has not been available because State departments have not had the funds necessary to carry on State-wide surveys. There is no short cut to estimates of school building needs. Such estimates are valid only if they are based on the collection of detailed data for every school system in every State whether located in city, county, or rural areas. Furthermore, it is necessary that the information be collected on a comparable base so that an accurate picture of the school building situation for the country as a whole may be obtained.

The following data on existing school buildings are needed for each community in each State:

1. The number of school buildings according to the type of building, i. e., elementary; junior high school; senior high school; elementary and

junior high school; elementary, junior and senior high school; elementary and senior high school; junior and senior high school; junior-senior high school and junior college; senior high school and junior college; junior college.

Such information is essential if plans for the elimination of small buildings and reorganization into larger centralized units are to be carried out and buildings planned for such centralized units.

2. The size of sites for school buildings, including the number of acres and improved usable play space. This information is also essential in carrying out plans for reorganization of schools into larger administrative units. For example, a school building in a rapidly growing district on a 2-acre site will either need more land or it should be eliminated and a larger school building erected on another site.
3. The number of rooms in each building. It is essential to know not only the number of classrooms but the number of such special-activity rooms as industrial arts, music, art or drawing; science, social science, shops, home-economics rooms, etc. This is important not only in order to find out how many schools have modern educational facilities but also to determine the capacity of each school. Under certain educational programs a number of these rooms do not accommodate a full class. Therefore, plans for future building need to be predicated on the actual capacity of each building in the community.
4. Number and size of auditoriums, gymnasiums, and auditorium-gymnasiums. These facilities are essential for the operation of a modern educational program. Too often, however, they are not included in new buildings or, if they are included, they are not scientifically planned to meet the needs of a given enrollment. It is not necessary to accommodate the entire enrollment in the auditorium but buildings are still being erected with auditoriums which provide for the seating capacity of the whole school. This is both expensive and unnecessary.
5. The enrollment in each school building. Average enrollment per building means nothing in estimating school building needs.

What Do We Know About School Buildings for the Country as a Whole?

The foregoing data are available in *some* city systems and *some* of them are available in *some* State departments of education. But the important point is that this essential information is not available for *all* school systems in *all* States.

The most recent information on school buildings for the country as a whole is that collected by the U. S. Office of Education for 1937–38, as follows:

Number of buildings.—In 1938 there were 229,394 [7] school buildings in the country, or 9,473 fewer buildings than in 1936. Of the total number, 26,889 buildings were in urban areas and 202,505 in rural areas.[8]

It is not known how many of these buildings are elementary-school

[7] Statistics of State School Systems, 1937–38, Biennial Survey of Education in the United States, U. S. Office of Education, Bulletin 1940, No. 2, ch. II, p. 106, table 23.

[8] Ibid. p. 150, table 53.

buildings, junior high, senior high, combined junior-senior high, and combined elementary and high schools. City school systems have these data, but only 16 State departments of education in 1938 gave data about the number of school buildings according to type of school.

Number of pupils per building.—It is generally conceded now that small school buildings are expensive in overhead and necessarily meager in educational opportunity. In view of these facts it is not encouraging to find that in 1938 the number of pupils per building for the country as a whole was 113.2. In urban areas the situation was somewhat better, 494.7 pupils per building, but in rural areas there were only 62.6 pupils per building.[9] These average figures do not give a true picture since they include enrollments in one-room schools. For example, in New York State, although the number of pupils per building in the State as a whole was 218.2, in urban areas the number of pupils per building was 821.8. In Pennsylvania, where the number of pupils per building for the State as a whole was 174.1, the number of pupils per building in urban areas was 521.9. In Alabama, where the number of pupils per building for the State as a whole was 145.1, the number of pupils per building in urban areas was 501.5. In Minnesota the number of pupils per building for the State as a whole was only 62.9, but the number of pupils per building in urban areas was 485.9.

Number of one-room schools.—In 1938, 52.8 percent of all the school buildings in the country were one-room schools, a type utterly unadapted to the educational needs of children of the present time.

The number of 1-room school buildings according to States varies greatly. In 21 States over 50 percent of the school buildings are 1-room schools; in 20 States, 25 to 49 percent of all school buildings are 1-room schools; in only 7 States are 1-room schools less than 25 percent of the total school buildings; in only 3 States are 1-room schools less than 10 percent of the total number of school buildings.

It is an interesting fact that in such a State as New York, for example, with its large industrial centers, 47.2 percent of all the school buildings in the State are still one-room schools. In two other large industrial States, Pennsylvania, 47.9 percent, and Michigan, 59.8 percent, of the school buildings are one-room schools.[10]

The value of school property.—The value of school property in 1938 for the country as a whole was $7,115,377,402 for the 229,394 school plants.[11] The value in urban areas, $5,004,387,000, is more than twice as great as in rural areas, $2,110,990,729.[12] The value of school property varies greatly in the different States. For example,

[9] Ibid. P. 150, table 53.
[10] Ibid. P. 106, table 23; p. 50, fig. 10.
[11] Ibid. P. 108, table 24.
[12] Ibid. P. 151, table 54.

the average value per pupil enrolled in 1938 ranges from $81 in Tennessee to $470 in New York [13] (table 2).

Table 2.—*Average value of school property per pupil enrolled, 1938* [1]

State	Average value of school property per pupil enrolled	State	Average value of school property per pupil enrolled
1	2	1	2
Total	$274		
New York	$470	North Dakota	$271
New Jersey	465	Missouri	251
Delaware	453	Iowa	249
Massachusetts	406	Wyoming	232
Illinois	404	Idaho	219
Connecticut	383	Maine	217
Michigan	375	Florida	210
Rhode Island	374	Vermont	202
California	367	Texas	195
Minnesota	334	Arizona	181
Nevada	325	West Virginia	162
Pennsylvania	324	Oklahoma	153
Montana	323	Virginia	131
Ohio	322	North Carolina	129
Wisconsin	320	Louisiana	124
Oregon	306	Kentucky	121
Utah	304	New Mexico	120
New Hampshire	291	South Carolina	96
Nebraska	289	Georgia	92
South Dakota	283	Alabama	86
Colorado	277	Mississippi	84
Maryland	277	Arkansas	82
Washington	277	Tennessee	81
Indiana	276		
Kansas	273		

[1] Biennial Survey of Education in the United States, U. S. Office of Education, Bulletin 1940, No. 2, Chapter II.

Capital outlay.—In 1930 the capital outlay for all school systems was $370,877,969; in 1932 it was $210,996,262; by 1934 it had dropped to $59,276,555, which was nearly as low as it was in 1910. By 1936 the capital outlay for the school plant had reached $171,321,674 and by 1938 it had climbed to $238,853,496.[14]

The capital outlay for urban areas in 1938 was $128,600,883, or 53.8 percent of the total amount, and for rural areas $110,252,613, or 46.2 percent of the total (table 3). (The data on capital outlay for rural areas are exclusive of the State of Connecticut for which returns on this point are incomplete.)[15]

The capital outlay in 1938 per pupil enrolled varied from $19.66 in California to $1.35 in Delaware. The average capital outlay per pupil enrolled was $9.20 [16] (table 4).

[13] Ibid. P. 108, table 24.
[14] Ibid. P. 122, table 33.
[15] Ibid. P. 153, table 55.
[16] Ibid. P. 134, table 39.

Federal aid for school building construction.—The preceding figures in regard to capital outlay for school building construction in 1938 include both funds raised by local school districts and also Federal grants and loans made available to local districts through the Public Works Administration. It is not known what proportion of the capital outlay in 1938 consisted of Federal allotments to the States but the indications are that few school building projects were carried on except with some Public Works Administration grants or loans.

One of the most important events in the school building field in the past 10 years was the inauguration, from 1933 to 1939, of Federal grants and loans for school building construction. This Federal aid prevented a very serious shortage of school housing in a period of economic depression.

Table 3.—*Percent of total capital outlay expended in urban and rural areas, 1938*

State	Percent of total capital outlay expended in:		State	Percent of total capital outlay expended in:	
	Rural areas	Urban areas		Rural areas	Urban areas
1	2	3	1	2	3
UNITED STATES	46.3	53.7	Florida	54.6	45.4
			Kansas	53.4	46.6
Louisiana	99.2	0.8	Wisconsin	49.6	50.4
Mississippi	97.6	2.4	Kentucky	47.8	52.2
Maryland	95.6	4.4	Indiana	45.2	54.8
North Dakota	88.1	11.9			
Alabama	85.7	14.3	New Mexico	45.2	54.8
			New Jersey	45.0	55.0
Virginia	84.9	15.1	Washington	44.0	56.0
Arkansas	84.3	15.7	Utah	42.6	57.4
Oregon	81.7	18.3	Missouri	41.0	59.0
New Hampshire	81.6	18.4			
North Carolina	77.3	22.7	Illinois	39.8	60.2
			Delaware	38.4	61.6
West Virginia	76.5	23.5	Michigan	38.4	61.6
Texas	75.2	24.8	California	35.0	65.0
South Dakota	75.0	25.0	Oklahoma	34.8	65.2
Nevada	71.2	28.8			
Arizona	70.9	29.1	Maine	32.7	67.3
			Montana	32.5	67.5
Ohio	70.1	29.9	New York	31.3	68.7
Wyoming	66.1	33.9	Colorado	27.6	72.4
Tennessee	64.2	35.8	Pennsylvania	14.1	85.9
Minnesota	63.0	37.0			
Nebraska	62.1	37.9	Rhode Island	13.2	86.8
			Massachusetts	1.6	98.4
South Carolina	58.4	41.6	Connecticut	(1)	100.0
Vermont	57.6	42.4	District of Columbia		100.0
Iowa	56.9	43.1			
Georgia	56.3	43.7			
Idaho	55.1	44.9			

[1] Connecticut data for rural areas are incomplete.

The total Public Works Administration allotments in grants and loans from September 1933 to January 1939 for 7,283 educational building projects, including public school buildings, college and university buildings, and public libraries, was $571,401,990. Of this amount, $448,043,372 consisted of Public Works Administration grants and loans for 6,451 public school building projects. The

Table 4.—*Capital outlay per pupil enrolled, by States, 1938*

State	Capital outlay per pupil enrolled	State	Capital outlay per pupil enrolled
1	2	1	2
United States	**$9.20**	Virginia	$6.96
California	19.66	New Jersey	6.73
New York	18.62	Missouri	6.67
Rhode Island	16.76	Florida	6.52
Wyoming	16.14	New Hampshire	6.51
District of Columbia	16.01	Iowa	6.09
Illinois	15.01	North Carolina	5.92
Mississippi	14.43	Colorado	5.90
Idaho	13.85	Washington	3.83
Pennsylvania	13.39	Connecticut	3.79
Montana	11.82	Tennessee	3.57
Nevada	10.98	Massachusetts	3.49
New Mexico	9.96	South Carolina	3.44
Ohio	9.89	Maine	3.20
Kansas	9.81	Kentucky	3.17
Texas	9.80	Arkansas	3.01
Utah	9.65	North Dakota	2.82
Louisiana	8.99	Nebraska	2.63
Wisconsin	8.98	Georgia	2.51
Arizona	8.72	Vermont	2.50
Oregon	8.46	West Virginia	2.46
Minnesota	8.10	Alabama	2.30
Maryland	7.95	Oklahoma	1.83
South Dakota	7.95	Delaware	1.35
Indiana	7.82		
Michigan	7.56		

funds supplied by the applicant amounted to $495,620,872. The total estimated cost for the 6,451 projects was $943,664,244.

The total number of school building projects carried on with Public Works Administration aid which were *completed* by June 13, 1940, was 6,380; the total cost was $897,672,891. The amount supplied by the applicant was $471,717,651. The total Public Works Administration allotment was $425,955,240, of which $364,000,138 was in grants and $61,955,102 in loans [17] (table 5).

It is clear from these figures that during the 5 years from 1934 [18] to 1939 the funds made available to the States through Public Works Administration aid amounted to $179,534,578 per year, of which the Public Works Administration's share in grants and loans was $85,191,048 per year for 5 years. In the 6,380 projects, 10,958 buildings were erected. They contained 57,587 rooms, with a capacity for 2,301,040 pupils. In each of 25 States the estimated cost of the school buildings was over $10,000,000 (table 6).

As has already been pointed out, in spite of the grants and loans by Public Works Administration from 1933 to 1939, requests were made during 1939 for an additional $345,843,708. Funds were not granted

[17] No funds were allocated to the States by Public Works Administration after January 1939, therefore these figures represent expenditures as of June 13, 1940, from allotments made up to January 1939.

[18] Public Works Administration was organized in September 1933, but funds were not allocated by Public Works Administration to the States for school building construction until January 1934.

because of lack of appropriation for Public Works Administration after January 1939 (table 7). In other words, the total estimated cost of school building projects for which Public Works Administration grants and loans were requested and for which no allotments were made, amounted to 40 percent of the total Federal grants and loans from 1933 to 1939.

Table 5.—*Total allotment of Public Works Administration for non-Federal educational building construction, September 1933 to January 1939* [1]

Type of project	Number of projects	Total estimated cost	Funds supplied by applicant	Public Works Administration allotment		
				Total	Loan	Grant
1	2	3	4	5	6	7
Educational buildings	7,283	$1,176,361,070	$604,959,080	$571,401,990	$91,018,905	$480,383,085
Secondary schools [2]	6,451	943,664,244	495,620,872	448,043,372	61,518,270	386,525,102
Colleges and universities	662	202,296,742	91,465,223	110,831,519	29,129,535	81,701,984
Other educational buildings	65	18,441,666	10,904,097	7,537,569	188,000	7,349,569
Public libraries	105	11,958,418	6,968,888	4,989,530	183,100	4,806,430

[1] Projects Division Report, Public Works Administration, Federal Works Agency, as of May 22, 1940.
[2] Includes all public schools.

Partial information available on school buildings for a limited number of States.—The data given in the preceding section summarize the information available on the school building situation for the country as a whole. It is obvious that this information is very limited and that it does not contain the facts that are essential if the school building problem is to be solved.

The important facts that need to be known are not only how many buildings there are but how many are needed and where they are needed; not merely the number of one-room schools but the number, size, and location of centralized school buildings that should be erected. In order to meet the educational needs of children it is not enough to know the total number of buildings; it is necessary to know how many are elementary and high school buildings, the kind of rooms provided in these buildings, and the number of classrooms, special activity rooms, auditoriums, and gymnasiums in each building.

Although such information is not available for the country as a whole, *some* of it is available for *certain* years for *some* school buildings in a *limited number* of school districts.

Data on 1,965 school buildings completed in 1939 with Public Works Administration aid.—The most recent and most complete data collected on the items given above are contained in a study made at the request of the Federal Works Agency by the U. S. Office of Education in February 1939, in regard to completed school buildings erected with Public Works Administration aid.[19]

[19] Public Buildings, Architecture under the Public Works Administration, 1933 to 1939, ch. VIII, p. XVIII-XXII, and ch. X, p. 681-687.

The study covered only 1,965 school buildings, but because of its range it gives a fairly accurate indication as to the type of building and facilities provided since 1933.

Table 6.—*Summary of completed Public Works Administration non-Federal projects for the construction and improvement of public school buildings, by States, as of July 1, 1940*[1]

State	Number of projects	Number of buildings	Number of classrooms	Number of students	Total estimated cost	Public Works Administration allotment		
						Total	Loan	Grant
1	2	3	4	5	6	7	8	9
Continental United States	6,380	10,958	57,587	2,301,040	$897,672,891	$425,955,240	$61,955,102	$364,000,138
Alabama	121	800	2,432	97,280	13,317,033	8,234,073	2,523,215	5,710,858
Arizona	41	71	246	9,840	3,666,779	2,073,012	464,210	1,608,802
Arkansas	30	36	223	8,920	1,858,985	1,418,955	652,922	766,033
California	436	1,252	5,214	208,560	93,559,388	45,212,863	9,105,754	36,107,109
Colorado	72	87	415	16,600	5,601,593	2,510,335	16,100	2,494,235
Connecticut	46	53	464	18,560	9,059,890	3,692,014		3,692,014
Delaware	17	20	214	8,560	4,714,269	1,513,896		1,513,896
Florida	59	378	566	22,640	5,032,191	4,276,920	2,250,893	2,026,027
Georgia	226	347	1,901	76,040	10,212,663	5,396,010	998,813	4,397,197
Idaho	70	76	320	12,800	5,097,550	2,255,017	30,000	2,225,017
Illinois	265	319	2,104	84,160	43,539,709	18,072,177	1,330,533	16,741,644
Indiana	202	223	1,332	53,280	22,380,962	9,774,664		9,774,664
Iowa	198	249	1,134	45,360	18,913,235	7,964,009	21,970	7,942,039
Kansas	152	179	1,029	41,160	17,272,024	7,011,270		7,011,270
Kentucky	130	186	1,230	49,200	12,362,539	6,922,449	1,716,706	5,205,743
Louisiana	117	225	834	33,360	11,482,276	5,119,373	77,000	5,042,373
Maine	39	46	268	10,720	3,190,694	1,419,635	73,700	1,345,935
Maryland	33	132	734	29,360	9,778,581	3,943,764	305,250	3,638,514
Massachusetts	117	126	1,227	49,080	25,212,762	10,359,014		10,359,014
Michigan	182	191	1,067	42,680	18,899,778	9,209,207	942,600	8,266,607
Minnesota	230	254	1,120	44,800	23,784,935	10,389,868	206,610	10,183,258
Mississippi	123	195	947	37,880	7,974,866	4,902,788	1,464,216	3,438,572
Missouri	210	330	1,294	51,760	21,584,352	9,418,277	987,670	8,430,607
Montana	69	91	463	18,520	9,310,091	4,613,808	796,004	3,817,804
Nebraska	100	110	494	19,760	5,092,028	2,185,749	53,000	2,132,749
Nevada	19	30	73	2,920	1,466,988	604,834	7,000	597,834
New Hampshire	34	35	233	9,320	4,177,754	1,935,083	150,750	1,784,333
New Jersey	91	101	1,031	41,240	22,359,975	14,377,348	5,320,310	9,057,038
New Mexico	29	49	332	13,280	3,514,878	2,098,759	603,500	1,495,259
New York	334	386	5,028	200,120	130,822,520	67,180,291	17,914,877	49,265,414
North Carolina	102	461	2,334	93,360	13,082,803	7,601,949	2,446,500	5,155,449
North Dakota	77	85	316	12,640	4,152,714	2,449,329	806,929	1,642,400
Ohio	501	644	2,911	116,440	58,752,223	26,376,941	654,800	25,722,141
Oklahoma	109	166	837	33,480	10,318,789	4,941,872	648,770	4,293,102
Oregon	118	149	701	28,040	8,630,164	4,268,950	630,440	3,638,510
Pennsylvania	419	472	3,776	151,040	76,933,017	32,816,974	686,350	32,130,624
Rhode Island	17	28	400	16,000	8,861,802	3,513,769	514,483	2,999,286
South Carolina	71	145	730	29,200	6,422,725	3,282,664	587,450	2,695,214
South Dakota	64	61	307	12,280	4,198,826	2,170,599	537,200	1,633,399
Tennessee	103	340	2,235	87,960	20,815,931	9,688,515	1,170,200	8,518,315
Texas	382	678	3,410	136,400	37,617,245	18,901,319	3,811,382	15,089,937
Utah	46	163	444	17,760	7,461,937	2,984,608	93,000	2,891,608
Vermont	21	22	126	5,040	2,087,591	935,260	9,375	925,885
Virginia	163	307	1,840	73,600	18,817,127	8,001,330	256,000	7,745,330
Washington	147	174	849	33,960	12,019,554	4,870,016		4,870,016
West Virginia	25	155	690	27,600	10,026,588	4,539,259		4,539,259
Wisconsin	167	185	1,157	46,280	25,158,388	10,499,481	23,000	10,476,481
Wyoming	27	31	171	6,840	2,538,707	1,018,525	70,000	948,525
District of Columbia	1	8	27	1,080	1,038,000	1,038,000	570,900	467,100
Alaska	8	13	45	1,800	555,014	266,120	18,720	247,400
Hawaii	13	34	163	6,520	2,114,281	926,828		926,828
Puerto Rico	7	60	149	5,960	828,177	777,470	406,000	371,470

[1] Projects and Statistics Division Report, Public Works Administration, Federal Works Agency.

The 1,965 completed school buildings were distributed over 48 States. They were found in all types of communities. Nearly two-thirds of them were erected in school districts outside of cities and 47 percent were erected in cities with less than 25,000 population. These figures are important because communities outside of large cities are the ones which have been severely handicapped for years because of lack of funds in their school building programs.

Table 7.—*Estimated cost of school building projects for which applications for Public Works Administration grants and loans were made, and returned in January 1939 with no grant allocation because of lack of funds* [1]

State	Number of dockets	Total estimated cost	State	Number of dockets	Total estimated cost
1	2	3	1	2	3
Alabama	12	$569, 832	North Carolina	26	$2, 128, 883
Arizona	29	1, 308, 940	North Dakota	11	807, 233
Arkansas	1	9, 091	Ohio	79	22, 921, 091
California	183	30, 016, 699	Oklahoma	4	1, 480, 108
Colorado	13	292, 566	Oregon	8	550, 666
Connecticut	33	7, 018, 270	Pennsylvania	730	103, 049, 699
Delaware	1	165, 000	Rhode Island	1	462, 000
Florida	15	4, 983, 080	South Carolina	10	1, 179, 725
Georgia	30	3, 100, 119	South Dakota	3	99, 395
Idaho	4	112, 646	Tennessee	19	4, 539, 318
Illinois	100	10, 981, 470	Texas	77	12, 690, 612
Indiana	17	2, 305, 208	Utah	1	150, 000
Iowa	42	4, 059, 008	Vermont	6	585, 271
Kansas	23	2, 299, 232	Virginia	52	5, 077, 719
Kentucky	3	259, 768	Washington	60	6, 188, 932
Louisiana	42	8, 404, 828	West Virginia	12	10, 327, 980
Maine	14	717, 850	Wisconsin	44	4, 274, 727
Maryland	3	228, 900	Wyoming	9	269, 397
Massachusetts	22	3, 626, 798	District of Columbia		
Michigan	46	6, 246, 783	Total	2, 114	345, 854, 708
Minnesota	17	911, 205			
Mississippi	36	2, 238, 281	Alaska	1	37, 500
Missouri	17	649, 208	Hawaii		
Montana	13	1, 574, 885	Puerto Rico	4	523, 181
Nebraska	20	1, 781, 785	Virgin Islands		
Nevada	3	412, 334	Grand total	2, 119	346, 415, 389
New Hampshire	7	995, 401			
New Jersey	66	16, 098, 589			
New Mexico	4	554, 308			
New York	146	57, 149, 868			

[1] Statistics from Pending Non-Federal PWA Projects, S. Doc. 25, 76th Cong., 1st sess.

Types of school buildings.—Of the 1,965 school buildings, 33.6 percent were elementary school buildings; 30.1 percent were planned for combined elementary and high schools; 33.2 percent were planned for either high schools, junior high schools, or junior-senior high schools. The remaining 1 percent were planned for combined high schools and junior colleges, and junior colleges; and 2.1 percent were not given. In other words, in spite of the declining enrollment in elementary schools, the demand for new elementary school buildings was as great as for high-school buildings. The reason is not far to seek. The average elementary school building is not constructed to meet the needs of modern youth, either from an educational or constructional standpoint.

Educational facilities provided.—The educational facilities provided in these buildings indicate that there has been an encouraging advance in providing facilities for an enriched educational program. Of the 1,965 new buildings and additions, 72 percent had auditoriums and 71.8 percent had either gymnasiums or combined auditorium-gymnasiums. There were 23,984 rooms in these new buildings and additions. Of this number 13,273 were classrooms and 10,711 were special activity rooms. Of the latter, 1,122 were libraries, 1,625 science laboratories, 860 social science rooms, 593 art rooms, 834 music rooms, 1,425 home economics laboratories, 1,054 industrial art rooms, 373 agricultural laboratories, and 2,825 other special activity rooms. In other words, 55.3 percent of the rooms were classrooms and 44.7 percent were special activity rooms. These figures are significant because they are concrete evidence that modern school buildings are being constructed to provide facilities for a wide variety of activities for modern youth.

Cost.—Reports on building costs were received in regard to 1,873 of the 1,965 new buildings and additions. Of this number, 1,324 were new buildings. The total cost was $213,242,442, or $161,058 per building. There were 549 additions, and the cost was $47,153,031, or $85,889 per addition. It is important to have these figures as a basis for comparison of costs.

Reasons for Lack of Information.

As has already been stated, the chief reason for the lack of information on the school-building situation and needs for the country as a whole is that the public does not yet realize how vitally important this information is as a basis for improving educational opportunities for the mass of children in the public school. The proof of this attitude is that although millions of dollars are being spent on school-building construction, only 22 State departments of education have school-building divisions at the present time, and none of these divisions has sufficient funds to carry on the work that needs to be done.

Thirty-three of the 48 State departments of education recently reported to the U. S. Office of Education that if accurate information is to be secured with regard to existing school plant facilities and future needs, State departments of education need full-time staffs in the school-building field to carry on the following work:

1. To make school-building surveys which are kept up-to-date.
2. To give consultative service to local school authorities and architects.
3. To keep a continuing inventory of school buildings on a standard report form so that the data collected for all States may be on a comparable base.
4. To review and approve sites, plot plans, and plans and specifications of all new school buildings and additions before award of contracts.

These State departments contend that this work cannot be done merely by sending out questionnaires to local school boards, but that it requires a technical staff that is competent to deal with the highly technical problems of school-building planning and construction. Furthermore, if waste is to be avoided, it would seem essential that State departments of education have legal power to enforce their decisions in the school-building field, that is, power (1) to require an annual inventory of school buildings; (2) to require local school districts to submit all plans and specifications for new school-building construction before contracts are let; (3) to require written approval or disapproval of sites, plans, and specifications of all new school plants and additions, such approval or disapproval to be binding on the local school district.

Estimated School Plant Needs.

In spite of the lack of the detailed data from each State which are necessary for an accurate estimate of school plant needs in the country as a whole, experts in the school-building field have made estimates of needs based upon their accumulated knowledge and experience. For example, at the annual conference of the National Advisory Council on School Building Problems in 1940, the following report was given on estimated school plant needs:

> It is estimated that the accumulated school-building deficiency amounts to $1,340,000,000. The elimination of unsanitary, unsafe, and educationally inadequate buildings will require another $1,373,000,000. The structural reorganization of the present inadequate district system that still obtains in 26 States will require at least $2,000,000,000 more. To this total of 4.7 billions should be added $300,000,000 for equipment and $200,000,000 for land and landscaping, or a grand total of $5,213,000,000 required to bring the present school plant up to a defensible standard of physical and instructional efficiency.
>
> Improved ventilation and heating, improved natural and artificial lighting, modern sanitary conditions, provision for greater safety to life (there is an average of five school fires daily) and the replacement of obsolete and worn-out equipment may be conservatively estimated at 5 percent of the total valuation of the school plant in 1938 ($7,115,377,729) or approximately $350,000,000 a year. Since much of the money expended for improving the existing plant is classified as "upkeep" under current expense, it escapes the general reader who is looking for "capital outlay."
>
> To summarize, the catch-up and reconstruction plant program needs now stand at 5 billion dollars in round numbers. The annually recurring expenditures for upkeep and improvement should be approximately $350,000,000. The general problem confronting the individual States and the Nation is to provide for these needs on the conservative basis of approximately $500,000,000 annually over a 10-year period, or $250,000,000 a year for 20 years.[20]

[20] Speech by Dr. Arthur B. Moehlman, professor of school administration and supervision, University of Michigan, Ann Arbor, Mich., given at Eleventh Annual Conference of National Advisory Council on School Building Problems held in Hotel Jefferson, St. Louis, Mo., February 24, 1940.

Summary

School-building progress in the past 10 years and the present school-building situation may be summarized as follows:

On the Credit Side.

1. There has been a great advance during the past 10 years in an understanding of the necessity for (1) reorganizing the curriculum to meet the needs of children and youth in a rapidly changing civilization, and (2) providing school plants with the educational facilities needed to carry out such a program effectively.
2. There has been a much more widespread understanding of the fact that if these modern educational opportunities are to be provided for children it is essential that the school building be planned so that the facilities for each of these activities, the size and dimension of rooms, built-in equipment, and movable equipment will facilitate the efficient operation of the program.
3. There is a wider recognition of the obligations of the school to provide in school for both educational and recreational activities for out-of-school youth and adults. This has had definite results in the planning of school plants for use by youth and adults as well as by children.
4. There is now much closer cooperation between the school authorities and architects in the planning of school buildings. There is a growing tendency among many school superintendents to organize the planning of a new school plant so that, before the first plans are drawn, the curriculum requirements are studied and a tentative educational program is drawn up on the basis of which a detailed statement is given to the architect showing the kind of activities to be carried on in each room in the building, the number of pupils to be accommodated, the desirable location of different types of rooms to facilitate efficient operation of the program, and the kind of built-in or movable equipment required.
5. There has been a closer relation between school-plant planning and reorganization of schools into larger administrative units.
6. State-wide school-plant surveys in a number of States have contributed greatly to the education of the public as to the need of centralized schools located according to scientific study of school-building needs of children in a given area.
7. Federal grants and loans for school-building construction have made possible considerable school-building construction at a time when, because of an acute economic depression, local communities had no funds for school buildings.
8. There has been a growing recognition of the need for a Nation-wide survey of school-plant needs carried out through State departments of education as a basis for estimating school-plant needs.

On the Debit Side.

1. In order to provide a modern educational program to meet the needs of children and youth today it is necessary to have school buildings which contain, in addition to classrooms, an auditorium, gymnasiums, play-

rooms, science laboratories, art rooms, music rooms, shops, libraries, domestic art and science rooms.

The average school building in the country today does not contain these facilities.

2. One-room school buildings are as inadequate to meet the needs of children today as would be the log cabin for adults.

   There are still 121,177 one-room school buildings in the United States.

3. Thirty-nine percent of the school buildings in the country in 62.3 percent of cities of 10,000 population and over are more than 30 years old.

   This means that nearly 40 percent of the buildings are obsolescent both from an educational and constructional standpoint, and that the majority need to be eliminated or remodeled. No accurate data are available in regard to the condition of the school plant in areas outside of cities, but it is well known that the school buildings in these areas are in worse condition than those in the cities.

4. In order to solve the problem of providing adequate school-plant facilities for the country as a whole, it is necessary to have data on the existing school plant in the United States.

   No adequate Nation-wide data are available in regard to the existing school plant for the country as a whole.

5. At the beginning of the Second World War, the schools have not yet caught up with the lag in school-building construction caused by the First World War.

6. On the basis of the best data available, it is estimated by school-building experts that $5,000,000,000 are needed (1) in order to eliminate old, insanitary, unsafe, and educationally inadequate school buildings; (2) to provide the school plant necessary for reorganization of schools into larger administrative units; and (3) to bring the present school plant up to a defensible standard of physical and instructional efficiency.

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EDUCATIONAL RESEARCH STUDIES OF NATIONAL SCOPE OR SIGNIFICANCE

VOLUME I

CHAPTER X

FEDERAL SECURITY AGENCY

U. S. OFFICE OF EDUCATION

BIENNIAL SURVEY OF EDUCATION

IN THE UNITED STATES

1938–40

EDUCATIONAL RESEARCH STUDIES OF NATIONAL SCOPE OR SIGNIFICANCE

VOLUME I

CHAPTER X

By

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EDUCATIONAL RESEARCH STUDIES OF NATIONAL SCOPE OR SIGNIFICANCE

Introduction

This chapter is a brief résumé of some of the recent research studies which have been conducted on a large scale and the results of which are of prime importance to education. The selection of the studies is more or less arbitrary, of course, since any one person or group of persons probably would differ somewhat in the list of studies chosen.

In general the studies selected have the following characteristics: They deal with the gathering and analysis of original data: most of them are of national scope and all of them are considered to be of widespread significance; and they have been reported upon since 1936, but not later than July 1, 1940. In addition, several of the studies were planned by national committees or other national agencies. Deliberative reports by national committees or agencies are omitted since this report is intentionally limited to research studies using original data.

It is not intended that this chapter should be thought of as a presentation of the best research work in education, although it is believed that the studies included are among the best within the limitations set forth above. The purpose of the chapter is to treat representative studies in various areas of educational research with the idea in mind that each reference included will present a brief description of the study and its objectives and also will single out the unique contributions of the study, whether in the methodology of research, the organizational procedures used for facilitating the research, the findings, or the method of presenting the results. If, as it is believed, the main types of research programs are represented, an important objective of the presentation can be said to have been accomplished.

Studies of Accreditation

There has been a great advance in our thinking in regard to procedures for evaluation in education. Evaluation of classroom procedures, of teaching techniques, of successful educational programs, and of many other aspects of school work have been greatly improved. One of the earliest programs of evaluation was concerned with the standardization and accreditation of educational institutions During the first three decades of the century the several accrediting agencies set up standards or requirements which a school must

meet in order to be accredited. Although these standards were in the beginning fairly general in nature, as revisions were made from time to time they tended to become more and more specific and quantitative. Such items as the number of books in the library, the number of students per teacher, the number of years of academic and professional preparation of teachers, and the like, in large measure determined the matter of the accreditation of a school.

Criticisms began to be hurled at the standardizing activities of accrediting agencies back in the 1920's. Critics said that standardization interferred with the maintenance of individuality by an institution and that it stifled experimentation and thus impeded progress. Experiments to improve the bases of evaluation were therefore undertaken. These experiments have tended to utilize qualitative standards instead of quantitative ones. Two studies recently completed—one in the college field, the other in the secondary school field—illustrate this trend towards qualitative evaluation.

Principles of Accrediting Higher Institutions

The first of these, the study of the evaluation of higher institutions[1] says in its statement of policy adopted in 1934, that "an institution will be judged for accreditment upon the basis of the total pattern it presents as an institution of higher education," that is, while institutions will be judged in terms of various stipulated characteristics, "superiority in some characteristics may be regarded as compensating, to some extent, for deficiencies in other respects. The facilities and activities of an institution will be judged in terms of the purposes it seeks to serve." The word "standard" was discarded in the formulation of the statement of policy because "the concept of standard in the old sense is foreign both to the spirit and to the method of the new plan * * *. The word 'standard' denotes a measure of institutional character to which an institution must approximate if it is to secure recognition * * *. Both experience and the studies of the committee show that there are few, if any, such items that have the crucial significance that has been attached to them." The committee states that it is its purpose to get away from fixity of pattern and "to create a plan of accrediting through which will flow the spirit of freedom and the urge of institutional growth."

This study, begun in 1929, was carried on by a committee of the North Central Association. For the main body of the study 57

[1] Zook, George F., *and* Haggerty, Melvin E. Principles of accrediting higher institutions.
Haggerty, Melvin E. The faculty.
Haggerty, Melvin E. The educational program.
Waples, Douglas, The library.
Gardner, Donfred H. Student personnel service.
Russell, John D. *and* Reeves, Floyd W. Administration.
Russell, John D., *and* Reeves, Floyd W. Finance.

All of the studies were published by the University of Chicago Press in 1935–37. This survey was sponsored by the North Central Association and financed by t' e General Education Board.

colleges and universities cooperated by furnishing necessary data and opening their records for inspection by visiting evaluators. For some aspects of the study, as, for example, finance, certain institutions were eliminated, thus cutting the number of cooperating institutions.

The following 11 areas of the college were studied: Faculty, curriculum, instruction, library, student personnel service, induction of students, administration, finance, plant, institutional study, and athletics. For each of these areas a large number of facts about each college were gathered by questionnaire or visitation. For example, the "Faculty" was divided into 3 subareas: (1) Faculty competence, (2) faculty organization, and (3) conditions of faculty services. Each of these in turn was broken down into items upon which more or less objective measures could be obtained. "Faculty competence," for example, consists of the following items:

(*a*) The percentage of the entire faculty who hold the earned degree—Doctor of Philosophy or some equivalent degree.
(*b*) The percentage of the faculty not holding the doctorate (as defined above) who hold an earned Master's degree.
(*c*) The average number of months of study beyond the Bachelor's degree; i. e., study of strictly graduate character.
(*d*) The average number of years of experience in college teaching and administration.
(*e*) An index of scholarly books and monographs published, obtained by dividing the total number on a faculty into the total number of published books and monographs.
(*f*) An index of scholarly articles published, obtained in the same manner.
(*g*) An index of memberships in learned societies, obtained by dividing the total number of such memberships in an institution by the total number on the faculty.
(*h*) An index of meetings attended within the 5-year period, obtained in the same way.
(*i*) An index of program appearances within the 5-year period, obtained in the same way.

In addition to these facts gathered about each institution, the various institutions were rated independently by members of the committee. Ratings were based on the character of an institution as a whole. The problem of the study was to find out which facts gathered about an institution agreed with the ratings of the institution made by the observers who knew the institution well. It was found that practically all of the items were of some significance in distinguishing a good institution from a poor one. However, it was realized that no one item or small group of items could be used safely to indicate the excellence of an institution. Therefore, it was recommended that all items be used as a basis for accreditation. The North Central Association accepted this recommendation and adopted the items used in this study as an instrument upon which higher institutions were to be accredited. These items form the compre-

hensive pattern map which is a substitute for the "standards" previously employed.

The number of institutions cooperating in this study was only 57, which is one of the reasons that the results with individual items were not so significant as might be desired. It is probable that a study made with identical procedures but using a larger number of institutions would identify the more significant of the items and thus shorten the evaluative procedure. This is an important point in this problem because the amount of material a school is asked to submit for evaluation under the new plan is considerable.

Cooperative Study of Secondary School Standards

The second accreditation study referred to [2] was organized in 1933 by representatives of the several regional associations of colleges and secondary schools for the purpose of developing a better method for evaluating high schools. More specifically its task was to create an instrument that could be used, first, by a high-school faculty in evaluating its own program; second, as a motivating instrument for improvement of secondary school instruction and operation; and, third, as an evaluating instrument by an outside visiting committee for the purpose of accreditation.

The first step in this study was the collection of a large number of principles and good practices thought to be characteristic of good high schools. The criteria tentatively selected were originally drawn from more than 2,500 research studies in the field of secondary education. These criteria were revised and refined after extensive criticism by about 600 collaborators, including representative leaders in secondary education and members of the Committee itself. The items which survived this criticism were then established as evaluative criteria to be used in an experimental study.

Two hundred schools were selected for the experimental study. They consisted of a representative sampling of secondary schools based on such factors as accreditation status, geographical distribution, control, enrollment, racial group served, etc. The experimental procedure was as follows:

1. *Evaluative criteria.*—The items established as evaluative criteria were divided into nine groups, or areas, as follows: (1) Curriculum, (2) pupil activity, (3) library, (4) guidance, (5) instruction, (6)

[2] Publications:

Evaluation of secondary schools—General Report.
Evaluative criteria and educational, temperatures—1940 ed.
How to evaluate a secondary school—1940 ed.
Evaluation of secondary schools: Supplementary reports.

All of these reports were published by the Cooperative Study of Secondary School Standards, 744 Jackson Place, Washington, D. C., in 1939.

This study was sponsored by the regional associations of secondary schools and colleges; funds for the study were provided by these regional associations and by the General Education Board.

outcomes, (7) staff, (8) plant, (9) administration. Each of these groups was further subdivided into a fairly large number of items. For example, pupil activity was subdivided as follows:

1. General nature and organization.
2. Pupil participation in school government.
3. Home rooms.
4. School assembly.
5. School publications.
6. Music activities.
7. Dramatic and speech activities.
8. Social life and activities.
9. Physical activities for boys.
10. Physical activities for girls.
11. School clubs.
12. Finances of pupil activities.
13. Special characteristics of the pupil activity program.

These criteria were presented to each of the schools participating in the study with the request that the schools rate themselves on each of the items included.

2. *Judgments of field committees.*—Some time after a school had made its rating on the evaluative criteria just described the school was visited for a period of from 2 to 10 days, depending on its size, by a committee of at least three experienced educators whose chief function it was to make an independent examination and appraisal of all important factors in connection with the school, and in the light of this information to review, and revise if necessary, the evaluations made by the school itself on the factors included in the evaluative criteria.

3. *Progress as measured by standard tests.*—Achievement tests and attitude scales were administered in the fall and again in the spring to a representative group of pupils in each of the experimental schools. The gains on these tests between the scores made in the fall and those made in the spring were used as measures of the efficiency of the schools concerned after making adjustments for differences in intelligence and other variable factors.

4. *College success of pupils.*—Registrars of institutions of higher education which the 1932 graduates from the experimental schools had entered, were asked for information as to the quality of work of the students during residence and their ultimate graduation. Success of the students in college was used as an index of efficiency of the procedure of the high schools from which the students originated.

5. *Noncollege success of pupil.*—Information was obtained from former pupils who had not gone on to college as to (*a*) the help that the secondary school had been to them in securing and holding a position and (*b*) the extent to which the secondary school had developed interests and appreciations in certain fields. A general evaluation was also made by these pupils of the total experience in the secondary school.

6. *Judgments of pupils.*—Pupils in the schools studied were furnished a one-page blank on which to give their opinions of good and bad features of the school.

7. *Judgment of parents.*—Parents of seniors in the experimental schools were asked to rate the schools on a rating scheme of five steps ranging from "exceedingly unsatisfactory" to "exceedingly satisfactory" on such traits as good character, good citizenship, friendliness and helpfulness, quality of teaching, all-round development, reading habits, pupil activities, etc.

The validity of the resulting evaluation on each one of these seven items was obtained by finding the relation between each of these evaluations and the total evaluation score made up of weighted averages of all the evaluations. This method has been called by some a method of internal validation because there is no outside criterion involved. The weighted average was obtained by using each evaluation for the percentages which follow:

	Percent
1. Evaluative criteria	40
2. General judgment by visiting committees	20
3. Progress as measured by standardized tests	20
4. College success	10–1
5. Noncollege success	0–9
6. Pupil judgment	6
7. Parent judgment	4

The percentages in 4 and 5 will vary with the relative number of students from the particular high school sent to college.

A practical means of applying the first two evaluative methods described here has been developed for use by high schools in evaluating their educational program and for use by regional accrediting associations.

The study has made a contribution in several directions, the two main ones being (1) the assembling of evaluative materials acceptable to secondary school people, and (2) the excellence with which these evaluative materials have been translated into practical instruments for evaluation. This body of material represents a long step forward from the previous methods of accreditation and inspection used. Many of these evaluative procedures consist of material concerned with the evaluation of the actual functioning of the school which is something previous accreditation methods did not attempt to do in any large measure.

This is practically the only study known to the writer in which both the theoretical basis of a problem has been thoroughly studied and a practical demonstration of the application of the principles involved has been carried out.

Another contribution lies in the methodology involved in setting up a testing program in several schools which would be a comparative measure of the efficiency of instruction in these schools. The two main factors which operate to make for pupil achievement at different levels in different schools, besides the obvious one of difference in the efficiency of the educational program, are (1) the differences in the

mental or scholastic aptitude of the pupils, and (2) the differences in previous preparation or initial knowledge of the pupils. The testing program used in this study made adjustments which would neutralize the effects of general mental ability and previous preparation in various subjects, thus leaving the test outcome as a measure of the efficiency of the school's educational program.

One criticism may be directed at the methodology of this study. It has to do with the validation of the evaluative criteria and committee judgments. The validation procedure was excellent so far as it went. It consisted of (*a*) judgment of a committee of competent educators, and (*b*) a try-out in the experimental schools. A better procedure would have been to have two committees, rather than one, judge each school independently and from a series of such scores obtain the reliability coefficient. Such a reliability coefficient is a better measure of validity in this case than any measure obtained by the study. This is because the agreement between different groups of judges is more important in evaluating a school's program than the agreement between the judgment on different aspects of a school program by a single group of judges.

City School Surveys

The city school survey is a comprehensive evaluation of the educational practices in an individual city. As such it utilizes any combination of evaluation methods the particular surveyors believe most adapted to the situation. For this reason city school surveys have often been the means of establishing new methods of school evaluation. Two recent surveys—the Philadelphia School Survey [3] and the St. Louis Survey [4] illustrate this process of refining old techniques and introducing new procedures.

Philadelphia Survey

One of the most unusual features of the Philadelphia survey was the method used for judging the efficiency of instruction in the ele-

[3] Publications:

Works, George A. *and* Dorr, E. Crosley. Summary of findings and recommendations, vol 1.
Owen, Ralph D. Central administrative organization
King, Leroy A.: Finance and school business
Educational research and results
} published together as vol. 2.
Garner, Francis M. Elementary education
Works, George A. Teacher training
} published together as vol. 3.
Grizzell, E. Duncan. Secondary education, vol. 4.

All of these studies were published by the Board of Public Education, Philadelphia, Pa., in 1937. The Board of Education of Philadelphia sponsored the survey and provided the necessary funds.

[4] Publication:

Strayer, George D.; Englehardt, N. L., *et al.* A report of a survey of the public schools of St. Louis, Mo. Bureau of Publications, Teachers College, Columbia University, New York City, 1939.

The Board of Education of St. Louis sponsored the survey and provided the necessary funds.

mentary schools. In many surveys judgment as to the value of instruction is based on a very weak set of factors. Sometimes standardized tests have been given to measure the efficiency of instruction. But standardized tests measure only certain aspects of instruction and can only be used when the factor of general scholastic aptitude of the pupil involved has been neutralized or eliminated. The observation of instruction has been used, but standards for judging instruction have been poorly defined, if defined at all. Therefore, judgment concerning instructional efficiency has always presented difficulties.

The method used in the Philadelphia survey was that of classifying each teacher on the basis of her type of teaching and then evaluating the skill with which she applied her philosophy of teaching. Four teacher types were recognized by the survey: I. The Textbook Teacher; II. The Topics Teacher; III. The Pupil Activity Teacher; and IV. The Pupil Self-Directing Teacher.

Descriptions of each type were carefully worked out before the beginning of the survey and upon the basis of these descriptions the work of each teacher was observed and classified.

Eighty-eight percent of the Philadelphia elementary school teachers were classified as Type II. None was classified as Type IV, and less than 5 percent as Type III. This is pointed out as being indicative of traditional teaching performance and of a lack of awareness of much that scientific investigation has revealed concerning the psychology of learning, child nature, and social needs. However, the individual teacher can hardly be criticized for being subject-matter-minded if most of the teachers are of that type; she is simply conforming to the practices customary for that school system. The method of classification, therefore, is really a rating of the general development of the school system in instructional activities.

St. Louis survey

A unique feature of the St. Louis survey is its attempt to measure growth in citizenship qualities through tests. The good citizen is defined as one who "is able to deal effectively with the significant problems that arise in his personal, social, economic, and civic relationships." From this it follows that education for citizenship is a necessary part of every subject of the curriculum.

In order to appraise the instructional program of education in citizenship, tests were selected for use which would show the degree to which pupils can and do make effective use of the factual knowledge they possess. For example, the test entitled *Judgments Characteristic of the Socially Competent Person*, one of the principal tests used, is "designed to measure the effectiveness of instruction as it is reflected in the judgments of pupils concerning everyday life problems and situations in the fields of health, personal economics, family-com-

munity relations, and social-civic relations." The *Test of Critical Thinking in the Social Studies* is designed "to measure ability to interpret and draw conclusions from given information * * * to weigh evidence, to reason, to think." *What Do You Think?* another test used, has to do with scientific thinking. It presents 100 problem situations which call for the exercise of critical judgment and are designed "to exemplify such mental habits as intellectual honesty, open-mindedness, tendency to look for true cause and effect, relationships, suspended judgment, and self-criticism." The Melbo Social Science Survey Test measures information primarily on "currents of events" rather than "current events."

Random samplings of 2,000 pupils from grades 5, 6, 7, and 8 in the elementary schools and of 2,000 pupils distributed through the 4 years of the high school, were selected for testing. Some of the conclusions drawn from analyses of the scores on the various tests which were used are significant.

Scores made by twelfth-grade pupils on the *Judgments Characteristic of the Socially Competent Person* test revealed that "pupils who had studied both general science and biology were not appreciably better able to answer questions concerning specific health problems of an everyday nature than were those who had studied neither general science nor biology." Another comparison indicated that pupils who "had an average of 6.3 courses in the social studies, including in most cases one or more modern problems courses, were not better able to answer questions involving current social-civic problems, personal finances, or community relationships than those who had had the prescribed minimum number of social studies courses."

The conclusion from the *Test of Critical Thinking in the Social Studies* is that "ability to think critically and to interpret and utilize factual information is apparently being achieved less successfully in St. Louis schools than in the average school system."

As to the test entitled *What Do You Think?* the survey makes the statement that an "analysis of the scores made by eleventh-grade pupils raises doubt as to whether the instructional program of the school has much to do with the results, one way or another. In some schools, the scores of pupils who had had several courses in science were actually lower than the scores of pupils in the same grade in the same schools who had had little or no instruction in science."

The results of the scores on the *Melbo Social Science Survey Test* led the survey staff to state that it "is of the opinion that the results of this test are much lower than are required if pupils are to be prepared to participate effectively in promoting the welfare of society and to develop a knowledge and appreciation of the laws and principles of the social environment."

The general conclusion arrived at by the survey staff was that the subjects taught in the schools of St. Louis in the areas tested—social studies and science—had no immediate carry-over to the problems of life. This is a very important conclusion, for if it should prove to be applicable to schools generally, it means that our curriculums in these areas are not functioning at all well.

One rather new and important feature of both the Philadelphia and St. Louis school surveys was the effort made to determine the freedom individual schools had in each school system and any evidence they showed of adapting themselves to their local conditions and of experimenting with newer practices. Several techniques were used to discover the possibilities of adaptations and their actual variations.

The bulletins issued by the central offices were studied to see what particular type of control the central offices had over individual schools; the principals of schools were questioned to see whether or not they felt themselves limited in their action; the organizations of the schools were examined to see what variations could be discovered; and the formal relationships between the principals and their superiors—assistant superintendent, associate superintendents, and the superintendent—were studied. In St. Louis the adaptation by the individual school was examined still further by rating the individual schools (the elementary schools) on the Mort-Cornell Guide for Self-Appraisal of School Systems. This measuring instrument covers 182 educational items on classroom instruction, special services for individual pupils, educational leadership, and physical facilities and business management.

Also as a more general check, the St. Louis survey set up the following characteristics by which to judge the total adaptability of the schools of St. Louis.

1. Practices widely accepted elsewhere and applicable to local conditions should be found operating universally in the schools without too great a time lag between the general recognition of the validity of the practice and its adoption, newer practices will be discovered in some areas in the city—in some instances in one school, in some instances in a few schools, and in some instances in a large majority of the schools. The lack of such variations would be considered a sign of ill health.
2. Practices should be found in some schools which represent experimentation with conditions recognized locally.
3. There should be an awareness on the part of the central office and of supervisory officers of these new experiments and of the practices which are in some stage of diffusion throughout the city. Ways and means should be in operation for appraising these practices and for extending their scope.
4. There should be evidence that support is forthcoming for able persons to carry on experiments which in their beginning stages may or may not appear to be promising to central office officials.

The Philadelphia and St. Louis surveys definitely contribute to survey technique by showing the value of the careful use of some of the newer methods of evaluation. Our knowledge of the status of

teaching practices and pupil outcomes in some areas was clearly extended through these surveys.

State Surveys

The State is the unit in our government prescribing most of the rules under which our schools operate. The State through its laws provides the main framework for the schools of the State. The State educational agencies—The State Board of Education, the State Superintendent of Instruction and his department, and other State agencies dealing with education—are in the main the agencies which see to it that the schools of the State operate within the framework laid down.

It is true that some State departments have assumed a relationship with local school agencies such that they actually participate in the operation of the local schools. The unique function, however, of the State in education is in the framework for education which it lays down and attempts to maintain. Only the Federal Government through the vocational education laws and the county superintendent or other county officials share with the State the authority to prescribe regulations under which schools can be set up and operated.

Because of this unique and important function State surveys are an important type of investigation. State surveys differ in scope; some have been instituted mainly to study and simplify the State laws and regulations, while others have covered all phases of the State's relation to education, including the efficiency of the operation of the individual schools of the State.

Nebraska Survey

Two recent surveys which have been selected for consideration here are the Nebraska State Survey and the New York State Regents Inquiry. The Nebraska State Survey[5] studied the State's whole

[5] Publications (mimeo.):

Student mortality in Nebraska colleges and universities.
How does Nebraska compare with neighboring States in amounts appropriated for higher education? Amounts expended for higher education?
Ratio of college students to population and percent of high-school graduates entering college?
Educational program of National Youth Administration in Nebraska.
Employment status of college graduates.
What are the educational requirements, the number issued, and what institutions prepare applicants for teachers' certificates? Does the supply equal the demand?
What does the State do to equalize educational opportunity among the counties, towns, and rural districts? Is the plan of district organization economical?
Why do pupils drop out of high school before completing the courses for which they are enrolled, and in what numbers?
After-graduation status of the high-school student?
A survey of vocational education in the secondary schools of Nebraska.
Vocational guidance in Nebraska secondary schools and colleges.
A study of adult educational activities of members of the teaching profession.
Adult education in Nebraska.
Duplication among Nebraska's State-supported higher educational institutions.

This survey was sponsored by the Nebraska State Planning Board and the funds were provided by the Nebraska State Legislature.

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program of education as it relates to the post elementary period. Studies were made of the certification laws and their effects, duplication of effort among Nebraska's State-supported institutions of higher education; the existence and need for equalizing educational opportunity among the counties, towns, and rural districts; the facilities for adult education; the program of the National Youth Administration in Nebraska; and the support given to higher education. The other parts of this survey had a more definite, although a more indirect, bearing on the structure of education. These were studies of the number of drop-outs from high school and college and of the employment status of high-school and college graduates.

This survey was especially significant in two directions. First, it was a self-survey. Except for a small amount of outside consultative service, the gathering and the interpretation of the data were done by Nebraska educators. The work was carried on through small committees, made up of school people from different parts of the State, each of which covered a particular designated area of the survey. Second, the survey was unique in the detailed investigations which were planned and carried out and reported upon, all directed towards answering the question as to what would constitute the most desirable type of organization for all education in Nebraska.

New York Survey

The New York State Survey [6] is one of the most comprehensive and thorough State surveys made. Because of the large sum of money allotted to the Regents for making the inquiry, the survey was able *to investigate, using adequate samples,* almost all of the recognized phases of the State administration of schools and the operation of the local schools. In this it is unique.

The survey was pointed at the underlying causes of any failure of the New York school system to meet the needs of youth. In order to discover the causes "the staff of the inquiry have been interested

[6] Publications:

Brueckner, Leo. J. The changing elementary school.
Eckert, Ruth, *and* Marshall, Thomas O. When youth leave school.
Grace, Alonzo G., *and* Moe, G. A. State aid and school costs.
Gulick, Luther; Laine, Elizabeth; Anders, Sterling; *et al.* Education for American life.
Judd, Charles H. Preparation of school personnel.
Laine, Elizabeth, Motion pictures and radio.
Maller, Julius B. School and community.
Norton, Thomas L. Education for work.
Reeves, F. W.; Fansler, T.; *and* Houle, C. O. Adult education.
School district atlas of the State of New York. Prepared by the district superintendents of schools.
Spaulding, Francis T. High school and life.
Wilson, Howard E. Education for citizenship.
Winslow, C.-E. A. The school health.

All the volumes except "The changing elementary school" are published by the McGraw-Hill Book Co., New York, 1938. That volume is published by the Ivor Publishing Co., New York, 1939.

The survey was sponsored by the Regents of the University of the State of New York. The funds were furnished by the General Educational Board.

in isolating major issues and in hammering away at the problems which presented themselves in order to find a reasonable comprehensive solution which would commend itself to the forward-minded people of the State of New York." The survey made its attack in a distinctly new manner. Heretofore the main general objective of school surveys has been to examine the school system as minutely as possible and from that examination recommend various changes in the organization and operation of the school. This method is productive of good, but there are limitations to the method, since no adequate criterion of the effectiveness of the school is used outside the regular school program itself. The more compreshenive method used in the New York State Survey included in addition to an examination of the school's educational programs, a survey of the out-of-school activities of pupils, their attitudes and knowledge of political, social, and community affairs, and also the knowledge, interests, and adjustments of former pupils of the school system.

The parts of the survey which exemplify best this more comprehensive method of surveying the effectiveness of the school program are those described in the volumes, *High School and Life*, *Education for Work*, and *Education for Citizenship*.

Measures used with pupils in school in grades 7–12, in a representative number of schools to discover their reactions to political, social, and community affairs were:

1. *Test on Community Affairs*, especially constructed for the Regents' Inquiry, by Ray A. Price and Robert F. Steadman.
2. *The Far East*, a test constructed by Alfred M. Church, dealing with a critical area in international relations.
3. *Wesley Test in Social Terms.* Published by the American Historical Association Commission on the Investigation of the Social Studies in the Schools.
4. *A Scale of Civic Facts and Beliefs*, by J. W. Wrightstone.
5. *What Would You Do? A Survey of Student Opinion*, constructed especially for the Inquiry by Ruth E. Eckert and Howard E. Wilson. A test of student reaction to school and out-of-school situations involving free speech, free assembly, protection of property, and participation in group affairs.

The main approach to an appraisal of the attitudes and adjustments of out-of-school youth was through interviews with 2,000 former pupils of the high schools of the State of New York and their employers and friends. Among the items for which information was obtained from the former pupils themselves were the following:

1. Major problems troubling youth out of school.
2. Attitude towards present job.

3. From whom they had received advice in regard to vocations.
4. Reading activities.
5. Club activities.
6. Movie attendance.
7. Training being received on the job.
8. Hobbies.

Information obtained from the employers referred to the initiative shown by the former pupils in their work and other evidence of their satisfactory work.

The data obtained on pupils who had left school were considered in the light of the curriculums that had been followed by the pupils while in school to discover what effect the education of the pupils had on their adjustment to life. This type of analysis is relatively new to the educational field. In the past, investigations of the achievement of pupils have usually been made by one set of investigators and the study of the adjustment of pupils in their employment and social life has been carried on by an entirely different set of investigators. In this study there is a definite attempt to correlate the conditions in school under which pupils move with their adjustments in later life. This study on the elementary and secondary level, the Minnesota Adult Study, and the Minnesota Personnel Research Study on the college level are the first to use this method on such a large scale. This comprehensive method of making surveys is a distinct contribution to survey methodology.

Among the most significant findings of the New York survey are those concerned with the relation of schooling with adjustment in vocational life and adjustment to our civic life.

With regard to the school and occupational adjustment, it was found that there was little relation between the courses taken in general high schools and the occupations followed by the graduates. Employers tended to consider the school curriculum in general high schools merely as a convenient device for sifting out levels of intelligence. Former students of such high schools stated that the schools had offered little vocational guidance. In general, curricula groupings appeared to have been made on the basis of intelligence alone. Hence, the college entrance group contained many pupils who did not want to go to college or who did not have the money to go. Many commercial diplomas had been given to pupils in communities where there had been a scarcity of clerical jobs, and industrial diplomas had often been given to pupils who were failures in other curriculums, irrespective of their aptitude for industrial work.

In vocational high schools the situation was somewhat better. Sixty-three percent of the boys graduating from such schools worked

at jobs for which they were trained, while 31 percent worked at jobs for which they had not been trained. However, students in vocational high schools who withdrew before graduation did not fare so well. Only 25 percent of boys withdrawing before graduation were working at jobs for which they had had some training, while 70 percent were working at jobs for which they had not been trained. General recommendations for meeting the problem of poor occupational adjustment of drop-outs from vocational schools were made by the survey. These included the following particularly significant one:

> The initial vocational education courses should be planned to meet the needs of the large number of drop-outs, as well as of those who plan to graduate. Hence, these courses can be of varying lengths. If only a small fraction of the pupils in a school graduate, the program should be geared to the needs of the pupils. In one vocational school, for example, the enrollment by years was as follows: Ninth, 242; tenth, 191; eleventh, 73; twelfth, 44. Owing partly to racial factors, there is a considerable number of drop-outs in this school at the end of the tenth year, and the school states that it is concerned with its "inability to keep boys in school until they complete the full four-year course." If this situation cannot be overcome, it would seem desirable to adjust the courses to meet the situation.

From the findings with regard to adjustment in vocational life, it was possible to make recommendations with more positiveness than has been the case in surveys made heretofore. These recommendations contain a good outline of the relation which should exist between schooling and vocational life. They attempt to answer among others, these questions:

> How far should vocational education on the secondary level be carried? Specifically, what should be the major objectives insofar as furthering the vocational adjustment of pupils is concerned, how much training in skills should be involved, and how far should the program include placement?

The Survey recommended that vocational education be differentiated on the basis of grade accomplishment at three levels: Level 1, pupils through grade 9; Level 2, pupils from grade 10 through 12 whose full-time schooling will presumably end with the secondary school period; and Level 3, those who have finished grade 12 and those who have demonstrated their vocational competence under adult working conditions. The recommendations for the various levels include the following:

Level 1:

> Introductory survey courses should acquaint pupils with the major vocational opportunities and requirements of important occupational fields, and should help each pupil analyze his own interests and abilities in relation to the learnings involved. Each pupil should have a sufficiently wide range of such experiences to insure an intelligent choice when he must decide on his future educational career.

Level 2:

The purpose of the initial vocational courses, planned for those pupils whose full-time schooling is to end within the secondary school period, should be to help each pupil (1) to develop such habits and attitudes as will lead him to work cooperatively and happily with others in whatever general field of vocational activity he has chosen; (2) to acquaint himself with these major vocational processes in the particular field which will make him an apt learner on the job * * *; (3) to gain a knowledge of the conditions of work, wages paid * * *; (4) to gain knowledge of the kind of training necessary for advancement in the field, and of where and how to obtain that training; and (5) *to secure training in basic elementary skills and to secure sufficient training in specialized skills to provide him with the marketable ability necessary to obtain a beginning job* * * *. The secondary school should not seek to develop a higher degree of specialized vocational skill than the minimum needed to get and to hold jobs as normally may be open locally to beginners in their chosen field.

Level 3:

The courses in the vocational and technical institutes should be designed to furnish (1) up-grading vocational education for young people who have demonstrated initial competence in a general vocational field, and (2) preparation for vocations which require a more extended period of initial schooling than can be provided proir to the end of grade 12, but which demand less training than that offered by four-year institutions of higher education.

With regard to the second type of relationship, i. e., the relation of schooling to adjustment to civic life, it was found that pupils in high school are not well informed on international affairs, on basic trends in industrial life and governmental theory and structure, or on knowledge of current affairs. Also, on a test of information about their own local communities pupils generally were found to be ignorant or misinformed. Pupils are fairly liberal as shown by tests of attitudes involving race, politics, and national and international affairs. Pupils were found to be reluctant to assume responsibilities for group welfare and individual initiative in group action. It was also established that the activities in the civic sphere in which pupils who had left school engage, their interests, hobbies, or their relations with friends and associates bear no relation to the curricula they have pursued in high school. This is a rather startling finding but it is supported by the most comprehensive set of data gathered on the subject. The St. Louis survey also had some data on this problem which pointed to the same conclusion.

The recommendations for overcoming deficiencies in civic knowledge and attitudes were classified by the New York Survey Staff under three headings. First is the responsibility of the teacher. Among the most significant of these recommendations are the following:

2. Ability at developing challenging discussion, giving illuminating explanations, and guiding well-focused pupil activities should be sought as the marks of good teaching. Dependence upon mechanical routine or on devices is to be avoided.

5. Teachers of social studies should make much greater efforts to participate freely in the normal adult life of their communities, especially in connection with economic and politic matters wherever possible.

The second series of recommendations is directed to individual school systems. These recommendations are concerned with the development of the social studies curriculum in relation to the personal problems in the field of human relations, the use of visual and auditory aids to learning, and the more careful selection of teachers to teach social studies classes.

The third series covers State policy. Some of the most significant of these recommendations are the following:

1. In the formulation of objectives, the State Education Department should assume a position of stimulative rather than prescriptive leadership, and its entire policy respecting syllabi and examinations should be brought to focus on the objectives-to-be-realized.

2. In this task, objectives should be stated in terms of traits of social competence rather than in terms of ground-to-be-covered. Attitudes, skills, and development of the full range of an individual's talents need to be much more systematically recognized as curriculum objectives. The objectives should deal with the emotional conditioning as well as the intellectual growth of pupils.

3. There should be established in the State Education Department an agency for curriculum research, with the double function of (*a*) recommending stimulating courses of study for such schools in the State as care to adopt them, and (*b*) aiding and encouraging local systems and individual teachers to experiment in the continuous adjustment of curricula to pupil needs and to social trends.

6. So far as state syllabi are concerned, it is recommended that the present syllabi be supplanted as soon as possible by a series of Curriculum Bulletins in Social Studies. Each bulletin should be a pamphlet suggesting means and materials for teaching a single topic. A topic is to be regarded as a well-knit unit of content together with pertinent pupil activities; a topic may normally represent about a single month's work.

10. Wherever local school systems develop and try out material for a curriculum topic which may have value for other schools in the State, the material should be incorporated into a bulletin and added to the regular list of bulletins.

14. The policy of issuing state diplomas should be abandoned in order to reduce the stranglehold of the present Regents' Examinations on school instruction. The State should examine school systems but not individual pupils for such administrative purposes as state diplomas involve.

Surveys of Educational Organization and Administration

Studies of organization and administration of schools can usually be classified as specialized surveys since they deal with one aspect of educational activities. The importance of this area in education

has increased tremendously during the last few decades, as the result of two conditions which have developed. First, because of the growth of metropolitan centers, individual school systems have become so large that their administration has presented innumerable problems. Second, because of the inequalities in the ability to pay for education existing within States and among States, the problem of furnishing adequate educational facilities to all pupils has become a State and a national educational organization and administration problem.

Local School Units

Two series of studies of importance in this field have recently been made. One of these, Local School Units,[7] is a study of the possible reorganization of school units in 10 States. This study was carried on through a cooperative agreement between the U. S. Office of Education and State departments of education in the 10 States concerned. The Office of Education developed through conferences the working procedures and supervised the work in each State in order to insure uniformity in approach and result. However, each State department was responsible for the progress of the work in its own State. This study shows how a balance can be kept between centralization and decentralization of research so that the main values inherent in each approach are preserved.

There are several advantages in a combination of centralization and decentralization in this sort of survey. The conferences at the central office and the small staff there insures that the procedures used are those agreeable to a large number of leaders, insures that the minimum program of research to be carried on in each locality is

[7] Publications:

Alves, Henry F. *and* Morphet, Edgar L., Principles and procedures in the organization of satisfactory local school units. U. S. Office of Education, Bulletin 1938, No. 11, 1939.)

Alves, Henry F., Anderson, Archibald W., *and* Fowlkes, John Guy, Local school unit organization in 10 States. (U. S. Office of Education, Bulletin 1938, No. 10, 1939.)

The following publications are the reports of the individual State studies made in cooperation with the U. S. Office of Education.

A study of local attendance areas and administrative units in Arizona. State Department of Public Instruction, Phoenix, Ariz. 1936. (mimeo.)

A study of local school units in Arkansas. State Department of Public Instruction, Little Rock, Ark., 1938.

Study of local school units in California. State Department of Education, Sacramento, Calif., 1937.

Study of local school units in Illinois. State Department of Education, Springfield, Ill. 1937.

Study of local school units in Kentucky. State Department of Education, Frankfort, Ky., 1937.

Study of local school units in North Carolina. State Department of Public Instruction, Raleigh, N. C., 1937.

Study of local school units in Ohio. State Department of Education, Columbus, Ohio, 1937.

Study of local school units in Oklahoma. State Department of Education, Oklahoma City, Okla.

Study of local school units in Pennsylvania. State Department of Public Instruction, Harrisburg, Pa., 1938.

Study of local school units in Tennessee. State Department of Education, Nashville, Tenn., 1937.

A graphic analysis of Tennessee's public elementary and high schools. State Department of Education, Nashville, Tenn., 1937.

Sponsor: U. S. Office of Education. Funds furnished by: Works Progress Administration.

clearly set up, provides for uniformity of procedure and presentation of results, and provides consultation service where and when it is needed most.

The decentralization of the actual studies made under the procedures set up can be best accomplished by workers who are directly in contact with the data in the various States and who are acquainted with the local problems. Variations in the study necessary for its success in a particular locality can best be worked out by local personnel in cooperation with consultants from a central office who can gauge the degree to which such variations will violate the more general principles laid down.

The principles for the reorganization of school units are fairly well known, but because of the great amount of detailed work involved in bringing together pertinent data, very few studies of the possible reorganization of school units for whole States have been attempted. A study of local school units involves a study of the school population, school transportation, receipts and expenditure of funds, school buildings, and legislative acts concerning the organization of schools. This local school units study has been the first to organize the procedures into a practical scheme, both as to operating manuals and as to means of supervising and/or organizing the field personnel.

Federal Government and Education

The second series of studies, that made by the Advisory Committee on Education,[8] is concerned with the organization and finance of pub-

[8] Publications: The Federal Government and Education. A pamphlet summarizing parts of the study. 1939.

Staff studies:

1. Smith, Payson; Wright, Frank W., *et al.* Education in the forty-eight States, 1939.
2. Cocking, Walter D., *and* Gilmore, Charles H. Organization and administration of public education, 1939.
3. Frederic, Katherine A. State personnel administration: With special reference to departments of education, 1939.
4. Heer, Clarence. Federal aid and the tax problem, 1939.
5. Mort, Paul R.; Lawler, Eugene S.; *et al.* Principles and methods of distributing Federal aid for education, 1939.
6. Edwards, Newton, *and* Richey, Herman G. The extent of equalization secured through State school funds, 1939.
7. Hamilton, Robert R. Selected legal problems in providing Federal aid for education, 1939.
8. Russell, John Dale, *et al.* Vocational education, 1939.
9. Blauch, Lloyd E. Vocational rehabilitation of the physically disabled, 1939.
10. Works, George A., *and* Morgan, Barton. The land-grant colleges, 1939.
11. Joeckel, Carlton B. Library service, 1939.
12. Wilkerson, Doxey A. Special problems of Negro education, 1939.
13. Johnson, Palmer O., *and* Harvey, Oswald L. The National Youth Administration, 1939.
14. Campbell, Doak S.; Bair, Frederick H.; *and* Harvey, Oswald L. Educational activities of the Works Progress Administration, 1939.
15. Blauch, Lloyd E., *and* Powers, J. Orin. Public education in the District of Columbia, 1939.
16. Blauch, Lloyd E. Public education in the Territories and Outlying Possessions, 1939.
17. Blauch, Lloyd E. *and* Iverson, William L. Education of children on Federal reservations, 1939.
18. Blauch, Lloyd E. Educational service for Indians, 1939.
19. Judd, Charles H. Research in the United States Office of Education.

These studies were sponsored by a committee appointed by the President of the United States. The funds for the studies were furnished by the Federal Government.

lic education from the standpoint of the Federal Government. The general scope of these studies is best revealed by the statement of the purposes as laid down by the President and as given in the foreword of the report:

> The Advisory Committee on Education was appointed by the President of the United States on September 19, 1936, initially for the purpose of making a study of the experience under the existing program of Federal aid for vocational education, the relation of such training to general education and to prevailing economic and social conditions, and the extent of the need for an expanded program of Federal aid for vocational education.

In a later letter the President "requested the committee to give more extended consideration to the whole subject of Federal relationship to State and local conduct of education, and to prepare a report."

In general the investigations covered three areas. One area consisted of investigations into the present legal and customary practices in the granting of Federal moneys for education throughout the States. These investigations are reported in staff studies numbered 4, 5, 7, 8, 9, and 10 (the staff studies are named in footnote 8). Another area of study concerned itself with the educational conditions in the States and the extent to which the States are able themselves to provide a satisfactory minimum program of education. This type of investigation is represented by staff studies numbered 1, 3, 6, and 11. The third area of investigation was concerned with the Federal Government's own more or less directly administered educational activities. This area is represented by staff studies numbered 13, 14, 15, 16, 17, 18, and 19.

The recommendations resulting from these studies are significant not only because of the importance of the subject but because they are the outgrowth of a more intensive study of the situation than hitherto has been made. These recommendations will be useful to all who in the future will consider various methods of granting Federal aid or of providing for supervision of such grants by Federal educational agencies.

Studies of Adjustment of School Children and Youth

The direct study of the individual is a fairly new procedure in studies of national scope. Some State surveys and many of the city surveys have measured the achievement of pupils, and some sample studies of the adjustment of pupils in school have been made. Beyond this, large scale studies of pupil adjustment were not made. Recently, however, there has been an awakening of school people and others to the need for a better adjustment between young people and our economic and cultural life. The increase in unemployment with its disastrous consequences for young people has been instrumental in showing the need for an appraisal of the adjustment of

youth. A number of studies in the area of welfare and adjustment have therefore been undertaken.

One important aspect of these studies is that they combine the methods of the educational and sociological survey. For many years there was little connection between the work of educators and that of sociologists. Educators made surveys of their pupils and in some cases they sent investigators into the field to evaluate the environment of individual problem children. Sociologists made surveys of communities to determine the causes and effects of social phenomena such as, for example, delinquency and crime. But the data from the two sources were not brought together to bear on the problems involved. Now educators are beginning to recognize that the life of the pupil does not end when he leaves school at 3 o'clock in the afternoon, or when he leaves school at the end of the compulsory school age span. It is beginning to be recognized that the school must integrate its activities with those of life in general.

Besides the study of the factors surrounding the adjustment of young people to the social and economic life of our time, there is also an increased interest in the individual differences of pupils in school and a clear desire to trace the cause of growth in desirable traits.

Two studies which deal primarily with youth after they have broken with formalized schooling are the American Youth Commission's study of the conditions and attitudes of young people in Maryland [9] and the adult study made by the General College at the University of Minnesota.[10]

Youth Tell Their Story

The Maryland study was conducted through personal interviews with 13,528 young people between the ages of 16 and 24 in certain geographical and census areas in the State of Maryland. The schedule called for information as to sex, marital status, race, age, employment status, religion of parents, relief status of immediate family during the preceding 12 months, education, occupation, earnings per week, father's occupation, native or foreign parentage, source of vocational guidance, and attitude on various economic, personal, and social items.

The first third of the individuals for this survey were chosen at random. Then the sample obtained was analyzed for age, sex, marital status, race, farm, nonfarm, parentage (native vs. foreign, mixed), and school status. The remaining young people (some two-thirds of

[9] Bell, Howard M. Youth tell their story: A study of the conditions and attitudes of young people in Maryland between the ages of 16 and 24. This study was sponsored by the American Youth Commission of the American Council on Education and funds were provided by the General Education Board.

[10] General College Adult Study. Publication: Report on the adult study of the General College, University of Minnesota, 1939 (mimeo.). Sponsored by the General College of the University of Minnesota with funds provided by the General Education Board.

all) who were interviewed were chosen so that as far as possible the resulting sample would approximate the distribution of youth in the United States on the basis of the 1930 census, according to these categories: Age, sex, marital status, etc. Although this method does result in getting a sample which is typical of the youth of the United States in regard to the factors of age, sex, marital status, etc. mentioned above, it does not insure an adequate sampling from the social, economic, or cultural standpoint. There was no guarantee that interviewers could sense the correct distribution of persons from such standpoints. A better method is to attempt to interview everyone in a geographical area. Although by the use of this method the cases would not conform to a standard set previously—such as the desired distribution according to age, education, etc., many of the influences which beset the interviewer in the selection of cases would be eliminated.

Adult Study

The Minnesota study was a survey of the environmental area and the adjustments of former students of the University of Minnesota. An attempt was made to trace with questionnaires 1,600 cases (all the former students of certain classes) and personal interviews were attempted with 200 of these cases. The interviews were used to check on the accuracy of the questionnaire returns which came by mail. It was found that questionnaire returns were almost as accurate as personal interviews had been. This is an important discovery. Before we can generalize on this fact further checking on other types of groups should be made. It may easily be that certain groups of people are more willing to "tell all" than others.

The questionnaire used in this study consisted of many more different items than any hitherto used in a study. It covered, among others, the following areas: (*a*) job satisfaction, (*b*) economic status, (*c*) cultural status, (*d*) political attitudes, (*e*) general adjustment, (*f*) vocational history and adjustment, (*g*) activities relating to health, (*h*) interest in art, (*i*) music, and (*j*) literature.

This study is unique not only because of its comprehensive questionnaire but because of the data obtained. These data are the first adequate sampling of the opinion and feelings of college-trained adults on a great many specific items in each of a large number of areas. No other investigation has attempted to cover so much of people's behavior. In general, therefore, these data cannot be compared with similar data for other groups. The only comparisons possible are those within the group of respondents themselves such as between the sexes, older and younger adults, those who graduated from the university and those who dropped out.

The study therefore did not arrive at many general principles regarding the effectiveness of a college education because trends or differences between important groupings were not available.

The data on the individual items are, however, extremely important because they reveal clearly the deficiencies in social, economic, family, and personal adjustments. Areas in which a college education *may* be of immense aid are clearly indicated. The study does not in itself indicate whether colleges can increase adjustment, but it opens up definite possibilities. With further studies using these techniques with more varied groups, these possibilities may be established as certainties.

Personnel Research Study

A study which deals with the adjustment of students of college age to college is the Personnel Research Study of the University of Minnesota.[11]

This study was made to aid in the problem of adjusting the "General College" students who at the University of Minnesota are those students who have not as yet been adjusted to the regular university program. The study of these students and their adjustment cannot help but throw some light on one of the important problems in education.

The study was made in two parts: One part was a study of a whole class (some 1,300 students) on a number of items related to their school, occupational, and personal adjustment; the other was an intensive educational and sociological case study of 100 of these students.

The whole class was studied from data obtained through the following approaches:

1. Achievement measured by scores on achievement tests and instructors' marks.
2. General scholastic aptitude through scores on psychological tests.
3. Vocational preference through scores on Strong's Vocational Interest Blank.
4. Health status through university records and interviews.
5. Adjustment of the student through adjustment questionnaires, such as Bell's Adjustment Inventory and through interviews.

The more intensive study of 100 students was characterized by a detailed study of the environmental areas which might have a bearing

[11] General College Personnel Research Study. Publication: Report on the personnel research study of the General College, University of Minnesota, Minneapolis, Minn., 1939. (Mimeo.)

on adjustment. Interviews were held with the student and with each of his parents. Inquiry forms were followed so that data on the same items were obtained in all cases. For example, the inquiry forms for rating the goodness of the family as an environment covered the following material:

1. General family area: This includes such items as physical surroundings and atmosphere, mother-father relationships, cooperation or domination between parents, and amount of regulation and control over student and others.
2. Sociality area: This includes an appraisal of the social life of each of the parents, social regulations and control, and parents' attitudes toward student's friends.
3. Educational area: This includes the education of the parents and their attitude towards the student's education.
4. Vocational area: This includes father's work history and satisfaction in his work and the attitude of each of the parents towards the student's vocational choice.

The inquiry forms devised for this study are a contribution to the tools of social inquiry and the whole procedure is an advance in the methodology of educational and sociological research.

The other two studies in this section are concerned with the adjustment of children to their school and home environment.

Intelligence: Its Nature and Nurture

The study of the influences of environment upon intelligence test scores is the subject of a study by the National Society for the Study of Education.[12]

This study of intelligence is not one comprehensive study of the problem but a series of studies, each made independently, but all bearing on the same general problem. Many of the studies were those that would have been made regardless of the stimulation of the Society's committee; others were made especially for the Yearbook. The committee brought together original studies and critical summaries of the research on the subject which had been recently published, and which in some cases included a consideration of the studies reported in the yearbook. Each member of the yearbook committee also made a critical evaluation of the yearbook's contribution as he saw it.

[12] Intelligence: Its nature and nurture. National Society for the Study of Education, Thirty-ninth Yearbook: Part I. Comparative and critical exposition; Part II. Original studies and experiments. Bloomington, Ill., Public School Publishing Co. 1940.

This yearbook was sponsored by a committee of the National Society consisting of Leonard Carmichael, Frank N. Freeman, Florence Goodenough, Leta S. Hollingsworth, Harold E. Jones, George D. Stoddard, *Chairman*, Lewis M. Terman, and Beth L. Wellman. There were 51 contributors besides those on the committee. The funds for publication came from the National Society for the Study of Education. The funds for the *individual research studies* came from various sources.

The yearbook chairman states:

> Very likely no member of the committee feels that justice has been done to either the theoretical or the experimental aspects of this great problem. In spite of a committee search for contributors who had approached this subject on a long-time and systematic basis, it is apparent that the contents of the Yearbook are somewhat opportunistic. They do not all bear with equal directness upon the subject of the Yearbook, nor are they of equal weight with respect to validity, clearness, or fruitfulness of outcome. * * *

All manuscripts were endorsed by at least one committee member, and on this principle, developed in the committee. The committee was unable to formulate any general principles or conclusions from the series of studies. The chairman states in regard to this: "It was not feasible, however, as a group (the Yearbook Committee) to attempt the formulation of an explicit and substantial document embodying a composite view." Articles and reports of individual researches seem to indicate that the reason no composite view was possible was that the research results were so divergent as to preclude generalizations.

However, in spite of this, the yearbook is a contribution because it brings together the available evidence on a very important issue in education. There is ever danger that the research of some one school of thought may be presented in a more favorable light than other research equally valid because of factors outside the scope of the research results themselves. A periodical résumé of the situation, such as is provided by this yearbook tends to keep a balance among the contributions in the field through presenting all sides of the question, both as to reports of reseaches and as to critical evaluations. One of the main contributions of the yearbook, therefore, is the fact that it provides for the discussion and presentation of research results in a critical area.

Another important contribution lies in the Committee's action in encouraging investigators to bring test data, which had been gathered by child research agencies over a period of years for a variety of purposes, to bear upon the problem of the yearbook. Although these studies were a definite contribution, paradoxically they also show the need for more studies which are actually planned with the definite purpose of discovering the effect of environment on children of various ability levels. The opportunistic method of making a study (the reconstruction of the crime method) cannot take into account all the factors as well as a carefully set up experiment can do. Longitudinal genetic studies are rather new in psychology and education and periodic surveys of methods and results of the type under consideration will help to improve the methods.

Studies in the Identification of Problem Children

The second study of the adjustment of school children is the Minnesota series of investigations regarding problem children.[13]

This series of investigations was based on data obtained in a voluntary Minnesota State-wide testing and rating program in the upper elementary grades. Tests of achievement for elementary school subjects, intelligence tests, and the following personality tests were used: Torgerson Pupil Adjustment Inventory, the Maller Case Inventory, and the B. P. C. Personal Inventory. Also teachers of the pupils involved designated the pupils whom they thought were problem cases.

This study is unique in several ways. It is one of the first voluntary cooperative enterprises of its kind. School people often cooperate to the extent of administering tests and sending the results to a central agency for further use. But rarely do the school people aid in setting up a program of research which will use the test results, as has been done in Minnesota. Here an educational organization of the State actively participated in planning and carrying on the entire process of a comprehensive research study. The State Department of Education and members of the State University furnished much of the leadership.

This study is the first to use personality measures on a large scale. It is also the first investigation in a public-school setting to study the relationships of these personality measures to other traits of pupils. Thus, the results give us the first accurate picture of the validity of these personality tests in the practical situation.

The findings of this study show that the different types of personality measures often disagree among themselves and with the teachers' estimate of maladjusted personalities. The study shows the ways in which the various tests furnish clues to maladjustment in the school situation. It presents the clearest picture we have of the limitations and values of mass diagnosis in the field of personality.

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[13] Publications of this study are:

1. Studies of problem pupils selected by the Maller Case Inventory, Part I, sec. 3, 1937.
2. Studies of problem pupils selected by the Torgerson Pupil Adjustment Inventory, Part I, sec. 4, 1937.
3. Inter-relation of the various techniques for selecting problem case pupils. 1937.
4. Participation of well-adjusted and problem pupils in extracurricular activities. Part I, sec. 6, 1937.
5. Relation of quality of work to other educational conditions, Part I, sec. 9, 1939.
6. Comparison of good and poor achievers as problem cases. Part I, sec. 10, 1937.
7. Comparison of dull children and bright children as problem cases. Part I, sec. 11, 1939.

All published by the Minnesota State Department of Education, St. Paul, Minn. These studies were sponsored by the State Testing Committee of the Minnesota Council of School Executives and the State Department of Education and obtained most of the funds from the Works Progress Administration. The schools furnished the money for the tests used.

Study of the Relations of Secondary and Higher Education in Pennsylvania[14]

This is a study in which examinations have been the principal tool for research. It is a study of the results of examining high-school seniors, college sophomores, and college seniors in a large number of high schools and colleges of Pennsylvania.

The main part of the study was an analysis of the testing of a large group of students as they passed through the 4 years of college. For this part of the study a total of 27,219 high-school seniors took one or more of the tests. This constituted between 65 and 75 percent of the total number of such pupils in Pennsylvania at the time the test was given in May 1928. Three years later when these high-school seniors who went on to college were sophomores (in 1930) the college testing program was begun. At this level 5,457 college students in 47 Pennsylvania colleges were tested, 2,355 of whom were from the originally tested group. In 1932 when these students were seniors, the final testing program was carried on in the senior classes of 45 colleges with 2,815 students, of whom 1,187 were those who had taken the high-school tests and the college sophomore tests. Since the pupils tested in college included a large number of those who had been tested in high school, the growth in knowledge of students in various college environments could be noted.

The measurement program at the three levels was as follows:

All of the high-school seniors were given an intelligence test and English examinations. In addition, tests in the following fields were given to students who had studied the subjects involved:

American History.	French.
Ancient and European History.	German.
Civics and Governments.	Spanish.
Mathematics.	Latin.

Natural Science.

In the sophomore and senior years of college the tests given were in approximately the same fields as the high-school tests. Besides the intelligence test, the tests given to all the sophomores and seniors were:

Mathematics.	Foreign Literature.
History and Social Studies.	Vocabulary.
Fine Arts.	Literature and Spelling.
General Science.	Grammar and Punctuation.

[14] Leonard, William S., *and* Wood, Ben D. The student and his knowledge. (Bulletin No. 29), New York, Carnegie Foundation for the Advancement of Teaching, 1938.

Other tests given to those having studied the specific subjects involved were:

Astronomy.
Biology.
Chemistry.
Economics.
French.
German.
Geology.
Government.
Latin.
Physics.
Spanish.
American History.
European History.

Using the test results, comparisons between different schools were made. Also the progress in achievement over the 4 college years was ascertained and especially over the period between the sophomore year and the senior year where the tests used were the same.

The methodology of this study is superior to that used in most large-scale studies. This is because of the definiteness with which the facts can be shown. The careful use of objective measures to measure growth probably results in the most scientific of the research procedures in education. The experimental method using objective measures is applicable, of course, only to certain problems in education. There have been too many poorly planned experimental studies using objective measures. Too many researchers have used tests and from that fact alone believed that they were scientific. As is pointed out elsewhere in this chapter, tests are only tools and their use does not insure scientific accuracy. The value of research using tests is entirely limited by the control of the experimental situation and the treatment of the results.

The findings of this study are very significant for secondary and higher education. They show that college "credits" are not measures of knowledge and that the number of years an individual has attended an institution is no criterion of his achievements. Many high-school students are found to be superior in knowledge to college sophomores and even seniors. It was discovered that students who are doing good work in one college would fail miserably by the standards which exist in another college. The results of the study are of great importance in considering the purposes and organization of college education, and show the need for individualization of both instruction and guidance.

Federally Sponsored Research Studies of National Scope

Two series of studies administered locally but sponsored by a central governmental agency were conducted during the period covered by this review.

Project in Research in Universities [15]

This project, sponsored by the U. S. Office of Education, shows a type of cooperation which involves considerable centralized planning but at the same time leaves considerable responsibility to local research centers throughout the country. It was a cooperative effort in research of 60 universities and colleges and the U. S. Office of Education. Forty studies were made. Each study was participated in by two or more institutions. As many as 31 institutions located in 20 States, representative of each major geographical division of the country, participated in one study alone. The task of planning, administering, and supervising the many projects and studies on a national scale, under complex and often difficult conditions made the successful completion of this project an excellent example of the possibilities of the coordination of the research agencies in education in this country. As in the Local School Units Study, the general procedures of each study were worked out in the central office, so that the results could be brought together to aid in establishing national trends. The studies were so chosen that the results of the work in each institution could be used by that institution independently of the use of the results in establishing national trends.

Research Projects in Education

The second series of studies was sponsored directly by the Work Projects Administration. This Federal agency with the cooperation of its local offices has sponsored research projects in education in

[15] Publications:

1. Covert, Timon. State school taxes and State funds for education and their apportionment in seven States, 1934-35. (Pamphlet No. 78.)
2. Cook, Katherine M. Opportunities for the preparation of teachers of children of native and minority groups. (Pamphlet No. 77.)
3. Powers, Francis P. *and* Hetzler, Marjorie. Successful Methods of Teaching English to bilingual children in Seattle public schools. (Pamphlet No. 76.)
4. Sayre, Wallace S. *and* Mandell, Milton. Education and the Civil Service in New York City. (Bulletin 1937, No. 20.)
5. McNeely, John H. University costs. (Bulletin 1937, No. 21.)
6. Oxley, Howard W. CCC camp education: Guidance and recreational phases. (Bulletin 1937, No. 19.)
7. Davis, Mary D. Preparation for elementary school supervision. (Bulletin 1937, No. 18.)
8. Martens, Elise H. Opportunities for the preparation of teachers of exceptional children. (Bulletin 1937, No. 17.)
9. Rogers, James F. Student interests and needs in hygiene. (Bulletin 1937, No. 16.)
10. Meriam, J. L. Learning English incidentally: A study of bi-lingual children. (Bulletin, 1937, No. 15.)
11. Coale, Willis B. *and* Smith, Madorah E., Successful practices in the teaching of English to bilingual children in Hawaii. (Bulletin 1937, No. 14.)
12. Gaumnitz, Walter H. Economic status of rural teachers. (Bulletin 1937, No. 13.)
13. Segel, David, *and* Proffitt, Maris M. Some factors in the adjustment of college students. (Bulletin 1937, No. 12.)
14. McNeely, John H. College student mortality. (Bulletin 1937, No. 11.)
15. Greenleaf, Walter J. Economic status of college alumni. (Bulletin 1937, No. 10.)

Funds for these studies were furnished by the Work Projects Administration.

universities, in local school systems, and in State departments of education. The initiative in developing the study procedures has largely been in the hands of the local educational agencies. The WPA has reviewed all projects and suggested improvements. In most instances the projects have also been reviewed by the U. S. Office of Education.

The Work Projects Administration studies may be classified into five types. One type has to do with the construction and standardization of tests. This is illustrated by research on examinations at the college level at the University of Minnesota,[16] and the development or analysis of tests in several fields and at various other levels.[17]

The second type of research deals with the analysis of personality and ability of school children. A study at Teachers College, Columbia University, regarding the variations in certain personality aspects in hard-of-hearing pupils and one at the University of California regarding the personality differences which can be deduced using the *Guess Who Test* [18] are illustrative of this group.

The third type of study has to do with the development of the materials of instruction and the determination of grade placement of textbooks. The most pretentious of these studies is that carried on

[16] The effective General College curriculum as revealed by examinations. (University of Minnesota Press) Committee on Educational Research, University of Minnesota, Minneapolis, Minn. 1937. An analysis of the examinations used in the General College.

[17] Arizona elementary school spelling test. Arizona State Department of Education. June 1937. A State survey of spelling abilities.

A comparison of methods of item selection for a personality test. Journal of Applied Psychology, 21: 643–52, December 1937. A comparison of nine methods of item selection for a personality test.

Development of statistical work on intelligence tests. Division of Examinations and Classification, Minnesota State Department of Public Instruction and Minnesota State Board of Control. St. Paul, Minn., 1938. Validation of intelligence test items.

Development of new Minneapolis spelling scale. Board of Education, Minneapolis, 1938.

Personality test of deaf adults. Journal of Genetic Psychology, 51: 305–27. 1937. Results of the Bernreuter Personality Test with hard-of-hearing adults.

The comparative validity of new-type questions. Journal of Educational Psychology, 28: 241–58, April 1937. A study of the discriminative validity of single choice, analogy, wrong-word answer, and single-word completion.

Home economics test project. Board of Education, Minneapolis, Minn., 1938.

Reliability of telebinocular tests of beginning pupils. Journal of Educational Psychology, 21: 31–36, January 1937.

[18] A comparative study of some personality aspects of school children with different amounts of hearing loss. Teachers College, Columbia University, New York City, 1936.

Reputation differences among young school children. Institute of Child Welfare, University of California, Berkeley, Calif. Journal of Educational Psychology, 28: 161–75, March 1937. A study of reputation through a questionnaire modified from the *Guess Who* test.

Among the other studies which may be classified under this type were the following:

Reading progress in kindergarten and primary grades. Elementary Journal, 38: 442–49, February 1938. A study of factors related to reading progress.

Aspects of language development: The growth of loquacity and vocabulary. Child Development, 9: 243–59, September 1938. Stenographic records of children in nursery schools and kindergarten were analyzed to discover rate of growth in oral language.

Correlations of reading progress with other abilities and traits in grade I. Journal of Genetic Psychology, 53: 33–52, September 1938.

Reversals in reading and writing made by pupils in the kindergarten and primary grades. Journal of Genetic Psychology, 53: 3–31, September 1938.

at the University of Oklahoma on the writing vocabulary of elementary school children.[19] Another important study of this type is the investigation of the vocabulary used in 50 pre-primers carried on at the University of California.[20]

A fourth type of study has to do with the adjustment of youth in college or out of school. The Connecticut Survey Commission's study of 2,000 male students while they were seniors in high school and again after they entered college [21] is illustrative of an adjustment study of in-college students.

A good example of an adjustment study of out-of-school youth is that of the economic and social status of 6,000 former students of the Rochester high schools [22] in which an attempt was made to find out what relation there was between the work undertaken by the former students and the courses they had taken while in high school. Other studies of value have been carried on in this field.[23]

[19] The vocabulary of elementary school children of the United States. University of Oklahoma, Norman, Okla. 1937 and 1938. A vocabulary count of words used by children in writing.

[20] The vocabularies and contents of elementary school readers. Department of Education Bulletin 3, University of California, Berkeley, Calif. 1938. An analysis of the vocabulary of 50 pre-primers.

Other studies of this type reported are:

Types of materials, vocabulary burden word analysis and other factors. Elementary School Journal 39: 27–35, 119–128, September-October 1938. A study of the manner and the frequency with which new words are to be introduced in the first grade.

Textbooks and instructional materials evaluated by means of the Lewerenz Vocabulary Grade Placement Formulas. Educational Survey Bulletin 25, County Superintendent's Office, Los Angeles, Calif. 1938. The grade placement of books according to type and distribution of words and interest.

A reading activity in grade one. Elementary English Review, 15: 170–78, April–May 1938. An analysis of the vocabulary used by first-graders.

The vocabularies and content of elementary school readers. The role of research in educational progress. American Educational Research Association, May 1937. A survey of the vocabularies of 28 first readers.

Development of materials for experimental program in reading and trial units of work involving the observation and study of child responses to matters of personal appeal as aid to teachers. Alameda Unified School District, Alameda, Calif. 1938.

[21] The study of transition from school to college. Connecticut Survey Commission on Transition from School to College, New Haven, January 1937. Data were assembled on 3,167 male seniors in high schools about 2,000 of whom went to college. An intensive case study of 139 of the college group was made.

[22] A Study of the economic and social status of six thousand former students of Rochester high schools. Civic Commission on Unemployment, Rochester, N. Y. 1937. (5015) Relation of employment and types of education.

[23] Among such studies are:

A study in the effectiveness of counseling. Attitudes and vocational guidance. University of Minnesota Testing Bureau, Minneapolis, Minn., May 3, 1937. A follow-up of 987 students counseled at the University to discern proportion of students following recommendations.

Unemployed youth of New York City. Monthly Labor Review, 44: 267–84, February 1937. Interviews of 9,041 young persons 16 to 24 years of age relative to their vocational problems.

A study of clinical predictious of student success or failure in professional training. Journal of Educational Psychology, 29: 335–54, May 1938.

Social and economic survey of college students in Mississippi. Mississippi Land Planning Specialist, State College. 1938. A study of self-support in college.

The youth problem in Denver. University of Denver Reports, vol. 14, no. 2, 1938. Survey of educational and vocational placement of youth.

Scholastic motivation and the choice of a vocation. School and Society, 46: 353–57, Sept. 18, 1937.

From school to college: A study of the transition experience. New Haven, Conn., Yale University Press. 1939. An analysis of the significant factors related to success in transition of boys from secondary school to college.

Surveys of finance, school organization, buildings, and transportation of pupils make up the fifth type of activity financed by the WPA. There are a fairly large number of these. Among them are (*a*) surveys of the school buildings in the State of South Carolina, and in certain types of school districts in California.;[24] (*b*) a survey of factors influencing the cost of pupil transportation in Ohio;[25] (*c*) studies of the organization of more efficient school districts in Gallia and Union Counties of Ohio, 14 Minnesota counties and Los Angeles County, Calif.[26]

Studies of Research Methodology

The research reports discussed in the previous section of this chapter illustrate the varied nature of the methods used in educational research, and the methods used in these reports represent only some of the methods used in educational research. Standard texts in the subject show the many variations in their classification and description of research techniques.[27]

It is important that the use of many different types of research methods be encouraged. Educational problems are so complex, involving as they do the whole realm of psychological, social, and to some extent, the physical life of children, that no cut and dried research method will suffice. Newer and more appropriate methods are constantly being perfected. Because of the large number of types of methods possible in educational research the design of a research project is probably more important (if one part of a project can be considered more important than another) than the individual methodologies involved. It is only through thorough designs of research problems that it will be possible in education to take care of the great number of factors involved. This is because only through a well thought-out plan is it possible to make the correct application of

[24] Survey of schoolhousing adequacy in California elementary school districts not administered by city superintendents of schools. Bulletin 5. California State Department of Education, Sacramento, Calif. 1938.

State school building survey of South Carolina. South Carolina State Education Department, Columbia, S. C., 1937. A survey of availability and utilization of the school buildings of South Carolina.

[25] Factors related to the cost of pupil transportation in Ohio. Ohio State Department of Education, Columbus, Ohio, 1937. An analysis of factors to be used in estimating cost of pupil transportation.

[26] A study of public schools of Belmont County, Gallia County, and Union County, Ohio. Ohio State Planning Board, 1936–37. School reorganization study for each county.

Report of the Education Committee of the Minnesota State Planning Board on School District Organization. St. Paul, Minn., 1937. A reorganization of school district plans for 14 Minnesota counties.

School district organization in Los Angeles County. 1937. (Bulletin 5) Educational Survey. Division of Administrative Research, County Superintendent's Office, Los Angeles, Calif. A school district organization study.

[27] The more recent of these texts are:

Good, Carter V.: Barr, A. S., *and* Scates, Douglas E. The methodology of educational research. New York, D. Appleton-Century Co., 1936.

Monroe, Walter S., *and* Engelhardt, Max D. The scientific study of educational problems. New York, MacMillan Co., 1936.

Whitney, Frederick L. The elements of research. New York, Prentice-Hall, Inc., 1937.

specific research methods in their proper order. For example, after an experiment is over, it is difficult to recreate the exact situation and make allowances for neglected factors.[28]

Methods of Research in Education

Among the important studies of methodology which deal with the classification of research in the whole field is the report prepared by a Committee of the American Educational Research Association on Methods of Research in Education.[29]

The classification of types of research is as follows:

(*a*) Historical, including:
  (1) Library.
  (2) Current historiography.
  (3) Legal.
(*b*) Quantitative analysis of documentary materials.
(*c*) Direct observations.
(*d*) Case method.
(*e*) Genetic method.
(*f*) The interview.
(*g*) Questionnaires.
(*h*) School and community surveys.
(*i*) Testing.
(*j*) Rating scales, score cards, and check lists.
(*k*) Factor analysis.
(*l*) Index numbers.
(*m*) Statistical methods.
(*n*) Classroom experimentation.
(*o*) Laboratory investigations.

It should be noted that for several of these types, if not for all of them, the formulation of the research method involves research. For example, the construction of a measuring instrument involves research. After it is evolved it is used as a tool in research. To illustrate: An attitude scale may be constructed by getting norms on a series of statements. The research method here is a combination of the historical method, i. e., getting the original statement on attitudes from various sources, and the normative survey method of establishing the reaction of a group to these statements in order to standardize it. When this instrument is used as a tool, it may be used in an experimental set-up to discover the influence of a certain type of instruction or the effect of some particular type of social environment. If it is used with socio-economic measures and measures of school achievement, etc., it may be used as a part of a correlational research method. This distinction between the research connected

[28] A recent book which treats of design in educational experimentation is Everet Lindquist's *Statistical Analysis in Educational Research* published by Houghton Mifflin Co., of New York, in 1940.

[29] Publications: Methods of research in education. Review of Educational Research, Vol. IX, No. 5, December, 1939. Prepared by a committee composed of Carter V. Good, Palmer O. Johnson, and Jesse B. Sears.

with the establishment of a method and the research carried on with the method has not always been clarified sufficiently in writings on research methodology.

The Scientific Movement in Education

The Thirty-Seventh Yearbook of the National Society for the Study of Education [30] also deals with the methods of research in education. This yearbook discusses the contribution of research to the various educational fields and to certain educational-psychological problems, and reviews the development of various research methods in education. The classification of research methods is of particular value because there is discrimination between "General Methods" of research and "Specific Techniques of Investigation."

The general methods discussed are:

(*a*) Historical, comparative, and documentary research.
(*b*) The social survey and the study of communities.
(*c*) Statistical analysis and comparison.
(*d*) Laboratory experimentation.
(*e*) Classroom experimentation.
(*f*) Case study.
(*g*) Educational diagnosis.

While the specific techniques of investigation (or tools) are:

(*a*) Examining and testing acquired knowledge, skill, and ability.
(*b*) Testing intelligence and aptitudes.
(*c*) Measuring personality.
(*d*) Observation, questionnaire, and rating.

Educational Research: Its Nature, Essential Conditions, and Controlling Concepts

A committee of the American Council on Education has studied research methodology [31] with the view to predicting the methods which will yield results of greatest value.

The discussion of desirable directions for research takes into account ,and necessarily so, both the methodology of research and the results of research. This is because in the discussion of methodology it is necessary to use examples and therefore the discussion is concerned not only with the methodology per se but with content of educational

[30] Publication: The scientific movement in education, Thirty-seventh Yearbook of the National Society for the Study of Education, Part II, Bloomington, Ill., Public School Publishing Co., 1938. Prepared by a committee composed of Frank N. Freeman, Leo J. Brueckner, Ernest Horn, M. R. Trabue, Ralph W. Tyler, Willis L. Uhl, and Guy W. Whipple.

[31] Educational research: Its nature, essential conditions, and controlling concepts. American Council on Education Studies, Series I, vol. 3, No. 10. (Nov. 30, 1939.) Prepared by a committee composed of Henry W. Holmes, Mark A. May, Paul R. Mort, George D. Stoddard, and Goodwin Watson.

research, that is, the results of research. The report covers the logic of educational research in the following areas:

(*a*) Child development.
(*b*) Measurement of abilities, aptitudes, and achievement.
(*c*) Reading.
(*d*) Guidance and personality adjustment.
(*e*) Structural aspects of educational finance.

The analysis of the desirable trends in research methodology in the areas mentioned is most penetrating. The volume brings out the following general principles regarding educational research:

(*1*) *The need for developing adequate experimental situations.*—The committee states that the emphasis in research has been on the development of tools of research—such as tests and other measures—rather than on the experimental set-up. There are a variety of measures available which, if they have any validity to all, can be used to measure changes in the variables of the experiment.

(*2*) *The need for longitudinal studies.*—It is pointed out that much research in universities is fragmentary due to the need for students to finish a thesis in a relatively short period of time. One solution to this particular difficulty is offered. It is to have one or more longitudinal studies carried through by the institution's staff while having graduate students take portions of the study as their field of work. Several students over a period of years might, therefore, be responsible for the total study under the general direction of the institution.

(*3*) *The need of implementing research.*—The study points out the lag in the use of research results in the school and suggests that the responsibility of carrying over the results of research be a part of the research study itself. This means an emphasis on applied research since the research would have to be pointed at a real school problem.

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