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# RESEARCH IN SECONDARY SCHOOLS



BULLETIN, 1932, No. 17

MONOGRAPH No. 15

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LINCOLN H. THE  
UNIVERSITY OF WISCONSIN

UNITED STATES DEPARTMENT OF THE INTERIOR  
OFFICE OF EDUCATION

# NATIONAL SURVEY OF SECONDARY EDUCATION

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UNITED STATES DEPARTMENT OF THE INTERIOR  
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OFFICE OF EDUCATION : WILLIAM JOHN COOPER  
COMMISSIONER

# RESEARCH IN SECONDARY SCHOOLS

BY  
WILLIAM H. ZEIGEL, JR.

*BULLETIN, 1932, NO. 17*

NATIONAL SURVEY OF SECONDARY EDUCATION

MONOGRAPH NO. 15



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## NOTE

*William H. Zeigel, jr., the author of this monograph, is specialist in school administration of the NATIONAL SURVEY OF SECONDARY EDUCATION. William John Cooper, United States Commissioner of Education, is director of the Survey; Leonard V. Koos, professor of secondary education at the University of Chicago, is associate director; and Carl A. Jessen, specialist in secondary education of the Office of Education, is coordinator.*

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## LETTER OF TRANSMITTAL

DEPARTMENT OF THE INTERIOR,  
OFFICE OF EDUCATION,  
*Washington, D. C., March, 1933.*

SIR: Within a period of 30 years the high-school enrollment has increased from a little over 10 per cent of the population of high-school age to more than 50 per cent of that population. This enrollment is so unusual for a secondary school that it has attracted the attention of Europe, where only 8 to 10 per cent attend secondary schools. Many European educators have said that we are educating too many people. I believe, however, that the people of the United States are now getting a new conception of education. They are coming to look upon education as a preparation for citizenship and for daily life rather than for the money return which comes from it. They are looking upon the high school as a place for their boys and girls to profit at a period when they are not yet acceptable to industry.

In order that we may know where we stand in secondary education, the membership of the North Central Association of Colleges and Secondary Schools four years ago took the lead in urging a study. It seemed to them that it was wise for such a study to be made by the Government of the United States rather than by a private foundation; for if such an agency studied secondary education, it might be accused either rightly or wrongly of a bias toward a special interest. When the members of a committee of this association appeared before the Bureau of the Budget in 1928, they received a very courteous hearing. It was impossible, so the Chief of the Budget Bureau thought, to obtain all the money which the commission felt desirable; with the money which was obtained, \$225,000, to be expended over a 3-year period, it was found impossible to do all the things that the committee had in mind. It was possible, however, to study those things which pertained strictly to secondary education, that is, its organization; its curriculum, including some of the more fundamental subjects, and particularly those subjects on which a comparison could be made between the present and earlier periods; its extracurriculum, which is almost entirely new in the past 30 years; the pupil population; and administrative and supervisory problems, personnel, and activities.

LETTER OF TRANSMITTAL

The handling of this survey was intrusted to Dr. Leonard V. Koos, of the University of Chicago. With great skill he has, working on a full-time basis during his free quarters from the University of Chicago and part time during other quarters, brought it to a conclusion.

This manuscript was prepared by Wm. H. Zeigel, jr., a regular member of the staff of the National Survey of Secondary Education. He wrote it after attempting to find out what research facilities had been set up in the secondary schools. He discovered that bureaus of research exist in some of the independent high schools, such as the larger union high schools of California and the township high schools of Illinois. Principally, however, publicly supported facilities for research in secondary education are incorporated in city research bureaus; about half of the problems which these bureaus undertake to study are concerned with secondary education.

The first research bureaus established were set up about 1912, that is, the oldest ones are approximately 20 years old. This in a sense accounts for what would otherwise be a disappointment in the work which they have accomplished. One-half of their reports are mimeographed. About 7 per cent of them are printed and about 2 per cent get into educational magazines. Very few of the researches done by these bureaus are submitted as doctors' and masters' theses. On the average a bureau of research makes 21 studies a year. The median staff of this division consists of a director and two or three assistants. The director of a city research bureau usually ranks as assistant superintendent of schools whether he has the title or not; generally he is responsible for his work directly to the superintendent. The median expenditure for operation varies from \$200 a year where a director performs only part-time work to a little in excess of \$12,000 per year. For salaries the range is from about \$1,000 to \$119,000, the latter figure being reported by one city.

I respectfully recommend that the report be printed as a monograph of the National Survey of Secondary Education.  
Respectfully submitted.

WM. JOHN COOPER,  
*Commissioner.*

The SECRETARY OF THE INTERIOR.

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# RESEARCH IN SECONDARY SCHOOLS

## CHAPTER I : THE PROBLEM AND METHODS OF INVESTIGATION

### 1. PURPOSE OF THE STUDY

*Need for the study.*—Much has been written concerning the need for and the function of research in education. Jorgensen<sup>1</sup> says:

It must be clear to the modern schoolman that research in education is essential if we are to solve the problems that are not only increasing in number, but also increasing in complexity. The school is but one element in our complex culture. We have seen how numerous and difficult are the problems with which it has to deal. The same is true of every part of our social scheme, and to almost every part research has come to furnish the guidance needed.

Almost the same thought was advanced by Newlon:<sup>2</sup> "Educational research is necessary to create a school system adapted to the needs of the individual and of society, but we have only made a beginning in educational research." Since these words were written many changes have taken place, but need for educational research now is no less urgent. In fact, the difficulties of the present period make it more imperative than before.

Scores of business and industrial organizations that are hewing and cutting to balance their budgets are at the same time establishing research laboratories for the first time or extending the facilities of these laboratories. We are told that, during the current economic recession, the manufacturing concerns which have put the most emphasis on research are conspicuous for their success.<sup>3</sup> Just as the business world is turning to research for developing better products, for inaugurating more economical methods of production,

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<sup>1</sup> Jorgensen, A. H. The Necessity for Research in Education. *American School Board Journal*, 73:41-42, August, 1926, p. 41.

<sup>2</sup> Newlon, Jesse H. What Research Can Do For the Superintendent. *Journal of Educational Research*, 8:106-112, September, 1923, p. 106.

<sup>3</sup> Wilhelm, Dovall. Science Leading the Way. *The Star*, Washington, D. C., May 29, 1932.



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and for eliminating waste, just so must education rely on educational research in leading the way to a sound educational program at all times but especially in times of crises. When educational programs are being curtailed, research bureaus should be expanded in order to point out, on as objective bases as possible, not only the best means by which to economize but also the best ways to improve school efficiency.

*Scope of the study.*—All the circumstances make it desirable to be informed as definitely as possible concerning the present status and development of educational research. In order to contribute to this knowledge, it is the purpose here to report on the research in secondary education carried on within schools and school systems. This will be accomplished by presenting evidence concerning (1) the personnel and resources of educational research bureaus, (2) the types of undertakings of research departments in city school systems and in individual secondary schools, (3) the research undertakings carried on by individual secondary-school staff members (including teachers) not officially connected with research bureaus or departments, and (4) the character of the research conducted in secondary education within schools and school systems. The reader will discover as he examines the report that the bulk of it deals with bureaus of research. This is for the very simple reason that most of the activities of an investigative nature carried on within schools and systems is the work of these bureaus.

### 1. METHODS OF INVESTIGATION IN THIS PROJECT

*Data from bureaus of research.*—The bureaus of research in city systems have been included in this investigation of research in secondary schools because of the fact that whenever such bureaus have been organized they logically assume the responsibility for conducting research in the secondary schools of the system. In general, this report is concerned with city bureaus of research only insofar as their functions and activities relate to secondary education. The available sources of information were scanned for the purpose of locating the names of as many bureaus of educational research as possible. Following this, a preliminary inquiry of a single page asking for a small amount of information and requesting cooperation through filling out a larger form was

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addressed to the directors of research in 232 city systems and in 18 public secondary schools. The returns indicated that a number of bureaus, the names of which were listed in earlier publications, were not really bureaus of research and that a number of others were extinct. The directors of 128 bureaus signified their willingness to cooperate. To these, the longer blank of inquiry was sent. A total of 70 usable replies were received from city systems, but only 4 were received from individual secondary schools.

*Data from secondary-school principals.*—The general inquiry forms that were sent early in the period of the Survey to the chief school officers of the different States, to superintendents of city systems, and to principals of secondary schools contained a request for the names of the secondary schools which exhibited suggestive or noteworthy developments in the field of educational research. Almost 200 secondary schools were named as having such developments. The principals of these schools were asked to cooperate, and inquiry forms similar to those directed to bureaus of research were addressed to them. Sixty-eight usable replies were received from this source.

In order to compare the nature of research work conducted in the secondary schools reported as carrying on significant research with that conducted by secondary schools in general, a request for cooperation was sent to about 400 secondary-school principals chosen from the lists of schools in the Office of Education. Although no effort was made to secure groups of schools of the same enrollments, it should be stated that the schools approached were uniformly of good size. Replies were received from principals of 102 secondary schools chosen in this manner. Without doubt there is some selection represented among those filling in and returning an inquiry form; those doing most in the way of research would be most likely to respond. Consequently, if the returns from such an inquiry fail to reveal many research activities in secondary schools, the true and general situation is probably even less productive than is depicted by the replies to the inquiry forms.

*Distribution of returns by groups and regions.*—The distribution of the returns according to size of cities and geographical

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regions is shown in Table 1. While it is recognized that the number of reports is not large, sufficient data are available to show developments concerning the amount and nature of research work done by bureaus of research and by persons within secondary schools.

TABLE 1.—Distribution of inquiry forms returned according to population groups and geographical regions

Population group or region	Number of returns from—			Median size of city
	Directors of research bureaus	Secondary-school principals reported as conducting outstanding research work	Secondary-school principals chosen at random	
1	2	3	4	5
Population groups:				
I (cities of more than 100,000).....	29	27	19	288,000
II (cities of from 30,000 to 100,000).....	28	13	18	53,000
III (cities of less than 30,000).....	13	28	65	15,500
Region:				
East.....	25	18	35	106,000
Middle West.....	15	39	28	63,000
South.....	10	6	20	99,500
West.....	20	5	9	37,000
All combined.....	70	68	102	67,000

*Size of cities.*—Because the size of the city is an important factor in the discussion of the activities and functions of research bureaus, the median size of cities for which reports from directors of research were at hand were computed according to the different population groups and geographical regions. These data are shown in the last column of Table 1. It is noted that the median city in the East is somewhat larger than the median cities of the other regions.

*Organization of the report.*—In making this report on research in secondary schools the following topics are presented and discussed:

1. Bureaus of educational research and secondary education (Ch. II).
2. Functions of research bureaus (Ch. III).
3. Research outside the bureaus (Ch. IV).
4. The classification and analysis of researches (Ch. V).

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### 3. EARLIER INVESTIGATIONS

No attempt will be made to analyze in detail at one point in this monograph the many studies which pertain to research in education. Nifenecker,<sup>4</sup> Deffenbaugh,<sup>5</sup> Martens,<sup>6</sup> Chapman,<sup>7</sup> Herbst,<sup>8</sup> and Wright<sup>9</sup> are among those who have shown the organization and functions of research bureaus in city systems. Reference will be made to these and other studies as occasion arises throughout this report.

<sup>4</sup> Nifenecker, E. A. *Bureaus of Research in City School Systems*. National Society for the Study of Education, Seventeenth Yearbook. Bloomington, Ill. Public School Publishing Co., 1918, pt. 2, pp. 52-56.

<sup>5</sup> Deffenbaugh, W. S. *Research Bureaus in City School Systems*. United States Office of Education, City School Leaflet No. 5, January, 1923.

<sup>6</sup> Martens, Elise H. *Organization of Research Bureaus in City School Systems*. United States Office of Education, City School Leaflet No. 14, January, 1924.

<sup>7</sup> Chapman, Harold B. *Organized Research in Education*. Bureau of Educational Research Monographs No. 7, Ohio State University, Columbus, Ohio, 1927, 215 p.

<sup>8</sup> Herbst, Rene L. *The Bureau of Research in Public-School Systems, with Special Reference to the Bureaus of Research in Cities of 100,000 Population or Less*. Doctor's thesis, 1930, Harvard University, Cambridge, Mass., 314 pp. ms.

<sup>9</sup> Wright, Edith A. *Organization and Functions of Research Bureaus in City School Systems*. United States Office of Education, Leaflet No. 2, February, 1931.

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## CHAPTER II: BUREAUS OF EDUCATIONAL RESEARCH AND SECONDARY EDUCATION

### 1. DEFINITION OF BUREAUS OF EDUCATIONAL RESEARCH

As was stated in the first chapter, bureaus of research in city systems have been investigated in this report because they perform a large part of the research activities carried on in secondary schools. The lists of research departments, divisions, or bureaus published by the United States Office of Education and by other agencies include a wide variety of names. This variety is often due to the nature of the chief functions which these bureaus, departments, or divisions perform. This is indicated by names such as "bureau of research and reference," "bureau of research and attendance," "departments of research and publicity," "bureau of educational measurements," or "bureau of instructional research." On the other hand, the practice of calling the research agencies bureaus, departments, or divisions is largely a problem of administrative organization. For these and other reasons the term "bureau of educational research," as used in this study, includes all definitely created subdivisions of school systems which have one or more of the following general functions: Activities in relation to research and statistics, mental and educational measurements, child welfare and classification, experimental research work, or any other functions either of conducting investigations or of directing investigational activities of others.<sup>1</sup>

### 2. DEVELOPMENT OF RESEARCH BUREAUS

*The establishment of early bureaus in public-school systems.*— The development of bureaus of educational research is a comparatively recent innovation. Until proper tools of research had been developed and until "methods of scientific investigation came to be recognized as having universal application,"<sup>2</sup> research bureaus were not organized. The

<sup>1</sup> For more detailed discussion and source of definition see Chapman, H. B., op. cit., p. 19, and Martens, Elise H., op. cit., p. 2.

<sup>2</sup> Judd, C. H. Educational Research and the American School Program. Proceedings and addresses, National Education Association, Washington, D. C., 1923, p. 172.

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years from 1911 to 1914 saw the beginnings of bureaus of research in city systems and in State universities. In 1912 the Bureau of School Efficiency was created in Rochester, N. Y.; during 1913 the Bureau of Reference, Research, and Statistics in New York, and the Bureaus of Educational Research in Baltimore, Md., and Schenectady, N. Y., came into being; and during 1914 seven others were established.<sup>3</sup>

*Bureaus in State universities.*—The development of bureaus of research in universities was coextensive with that of bureaus in city systems. Indiana University and the University of Oklahoma were probably the first universities in this country to establish such bureaus. Each of these was established during the year 1913. The University of Minnesota followed in 1915, the University of Kansas in 1917, and the University of Illinois in 1918.<sup>4</sup> Because this report is concerned with local research in secondary schools, the functions and activities of bureaus of research in State universities, State education associations, and other research agencies are not treated in this report, except in Chapter V for comparative purposes.

*Growth in number of bureaus.*—From the establishment of the first bureau of educational research in 1912, the number of such bureaus in city school systems increased to 41 by the end of the year 1920, to 53 by 1922, to 69 by June of 1926, and to 150 by 1932, as listed in the educational directory of the United States Office of Education for that year. The number of research bureaus in State departments of education has now increased to 28; the research bureaus connected with State educational associations number 8; those connected with State universities and colleges number 35; and about 20 are found in teachers colleges and normal schools. In 1932 the approximate number of bureaus of educational research, as defined in this report, in all of the agencies listed above, is probably more than 240. These figures are evidence of a rapid development of interest and confidence, at least, in educational research.

From data reported by Wright<sup>5</sup> the percentages of growth for research bureaus in city school systems between 1922 and

<sup>3</sup> See Martens, E. H., *op. cit.*, p. 4, and Chapman, H. B., *op. cit.*, pp. 40-45.

<sup>4</sup> Chapman, H. B., *op. cit.*, pp. 36-37.

<sup>5</sup> Wright, Edith A., *op. cit.*, p. 2.

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1930 may be reported according to the size of city. In cities of more than 100,000 population the percentage of growth was about 80; in cities of 50,000 to 100,000, more than 520; and in cities of 10,000 to 50,000, 140 per cent. A striking increase in number of bureaus has taken place in cities of 50,000 to 100,000 population. This is not unexpected because cities of this size established but few bureaus until recent years.

*Name of research bureaus.*—As pointed out in a previous section, a great variety of names are found for the bureaus represented. In 1930 Wright<sup>6</sup> reported that of 119 bureaus, the names of 90 carried a title containing the word "research" either alone or in combination with some other function. The names of the remaining 29 included terms like "guidance," "child study," "testing," "curriculum," and "statistics." These data led Miss Wright to conclude that the title "most generally used is naturally bureau of research or some variation of it."<sup>6</sup> Titles made up of words suggesting two or more distinct functions are reported frequently. Examples are found in such names as bureau of research and attendance; research and child accounting; research and publicity; research, attendance, and census; research and guidance; research and child welfare; research and testing; and research and statistics. The names of the bureaus suggest that they perform many duties and functions of a fact-finding nature rather than those of a strictly investigational or research nature. This expectation is borne out by the evidence on the functions of research bureaus reported in Chapter III.

*Date of establishment.*—The inquiry forms, as pointed out in Chapter I, requested information concerning the organization and functions of research bureaus. Of the directors replying, 68 supplied the date of the establishment. Table 2 reports these dates. Of the bureaus submitting data, approximately a fourth were organized prior to 1920; approximately a half since 1925; and about a fourth since 1928. It also appears that the bureaus in large systems have been operating over a longer period than have bureaus located in cities of less than 30,000 population. This is to be expected since the larger cities probably felt the necessity for bureaus

<sup>6</sup> Wright, Edith A., *op. cit.*, p. 2.

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before the smaller communities and more often had the resources needed to provide the service. The smaller places have begun only during the past few years to establish such bureaus.

TABLE 2.—*Number of bureaus of research in city systems organized each year, beginning with 1912*

Date of organization	Population group			Region				All combined
	I	II	III	East	Middle West	South	West	
1	2	3	4	5	6	7	8	9
1912.....	1			1				1
1913.....								
1914.....	2			1		1		2
1915.....								
1916.....		1			1			1
1917.....	3			1				3
1918.....	2					1	1	2
1919.....	1	5	1	2	3	1	1	7
1920.....								
1921.....	1		1		1		1	2
1922.....	4	2	1	2	3		1	7
1923.....		1	1			1	1	2
1924.....	3	2		2		1	2	5
1925.....	1	7		3	2	1	2	8
1926.....	2		1	1	1		1	3
1927.....	3	3			2	2	2	6
1928.....	5	1		4	1		1	6
1929.....	1	1	1	2			1	3
1930.....		2	6	4		1	3	8
1931.....		2		2				2
Total.....	29	27	12	25	14	10	19	68

*Authority under which bureaus are established.*—Chapman<sup>7</sup> has shown that bureaus of research in city-school systems derive their legal authority from formal action by the respective boards of education. In some cities such as New York and Minneapolis, the city charter specifically makes provision for the bureau of research. The board of education in the city of Portland, Oreg., acted upon the authority granted by the legislature to the boards of education in cities of more than 10,000 population to establish research bureaus. Chapman also shows that bureaus in State universities usually derive their authority from the action of their boards of trustees, but that in several instances State legislative action made legal provision for research bureaus in State institutions.

<sup>7</sup> Chapman, H. B., *op. cit.*, pp. 153-154.



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### 3. DIRECTORS OF RESEARCH BUREAUS

*The rank of directors of bureaus of research.*—The bureaus of educational research in city-school systems are usually under the direction of persons who devote full time to research functions. "The rank of the director," says Herbst,<sup>8</sup> "should be equal to that of an assistant superintendent of schools." The following statement by Theisen<sup>9</sup> goes further into detail as to why directors of research should have a rank equal to that of an assistant superintendent:

If a research department is to function properly, the responsibility for its direction should rest upon an individual whose rank is on a par with that of an assistant superintendent. Unless the person in charge is sufficiently high in rank, the position will lack the prestige necessary to create a proper respect for its authority. Without such status there will be persons in every system who will question the right of a research director to probe into their particular domains. The director must have sufficient rank to enable him to meet any other employees of the school system at least on an equal footing.

The reports of 68 directors of city-school research bureaus on the proportion of time which they devote to research activities indicate that 74 per cent of them devote full time to the work and that the remaining 26 per cent devote only part time to these duties. The data in Table 3 present the reports of 62 directors on the rank which they hold in the system if employed in bureaus for full time, while those in Table 4 indicate the positions to which directors devote the remainder of their time if they give only part time to the bureau of research. Half of the full-time directors reporting have ranks equivalent to that of an assistant superintendent, and slightly more than a fourth have the rank of a supervisor. Apparently the directors of research bureaus do not hold the rank of assistant superintendent nearly as frequently as the educational leaders quoted above recommend. In each of the population groups the director has the rank of assistant superintendent in exactly one-half of the systems. Relatively minor differences from this situation exist among the different regions.

<sup>8</sup> Herbst, Rene L., *op. cit.*, p. 189.

<sup>9</sup> Theisen, W. W. *The Function and Value of a Public-School Research Bureau.* Address before Department of Superintendence meeting on Feb. 23, 1920. Reported in the *American School Board Journal*, April, 1920, p. 48.

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TABLE 3.—Ranks of full-time directors of research in 48 city systems

Rank of directors	Population group			Region				All combined
	I	II	III	East	Middle West	South	West	
1	2	3	4	5	6	7	8	9
Assistant superintendent.....	12	8	3	13	4	2	4	23
Elementary-school principal.....			1				1	1
Supervisor.....	3	7	2	1	6	3	2	12
Other ranks.....	9	1		3	3	1	3	10
Total.....	24	16	6	17	13	6	10	46

Part-time directors of research bureaus devote the remainder of their time to a variety of positions. Some of these part-time directors are classroom teachers, principals, supervisors, but nearly half are assistant superintendents who devote a portion of their time to directing the research bureau.

TABLE 4.—Positions to which part-time directors devote the remainder of their time

Position	Population group			Region				All combined
	I	II	III	East	Middle West	South	West	
1	2	3	4	5	6	7	8	9
A classroom teaching position.....		1		1				1
A principalship.....		1	1	1			1	2
A superintendency.....			1	1				1
An assistant superintendency.....	1	3	1	1		2	2	5
Some other position.....	1	4	2	2	1	1	3	7
Total.....	2	9	5	6	1	3	6	16

*Board or officer to whom responsible.*—Chapman <sup>10</sup> presents data showing that the directors are immediately responsible to the superintendent in 89 per cent of the city school systems, but that in several cases the director is responsible to boards of superintendents, or to boards of deputy superintendents, or to an assistant superintendent. He states further—

The right of the superintendent to control the bureau of educational research is now generally granted. This control is exercised either

<sup>10</sup> Chapman, H. B., op. cit., p. 155.

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directly or through a subordinate immediately responsible to him who is in accord with the educational policies of the superintendent. A research bureau should be in the line of authority. The canons of good administration are violated when the bureau is outside of the superintendent's control.<sup>11</sup>

If the directors of the bureaus are responsible to superintendents and in the line of authority, it implies the right of these directors to investigate school problems in any field of school work whether it be administrative, supervisory, or instructional. It also implies the right to investigate the problems at any school level. For this reason the city bureaus of research were included in this investigation of

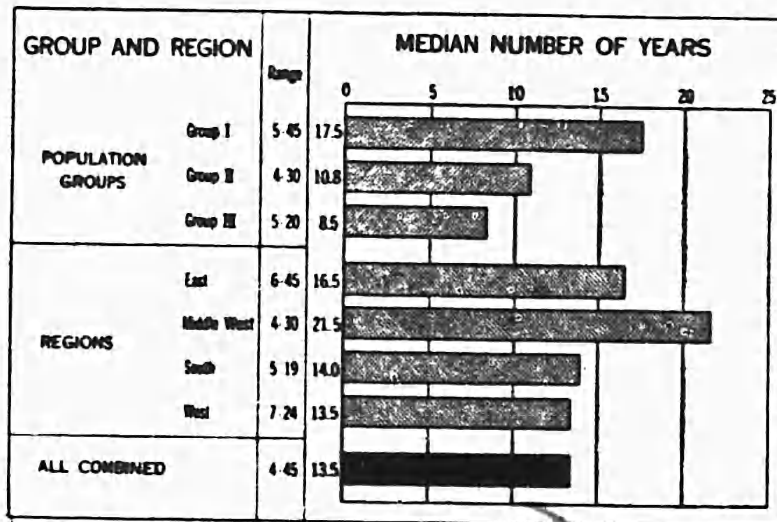


FIGURE 1.—Median number of years of educational experience of 68 directors of research in city systems

research in secondary schools. Courtesy and tact, however, usually make it desirable for directors to confer with secondary-school principals before attempting to work directly with teachers.

*Experience of directors of research.*—Have directors of research bureaus had large amounts of educational experience or has their educational service extended over relatively few years as compared with other administrative officers of the system? Figure 1 shows the median number of years of educational experience of the full-time directors of 45 bureaus of research in city-school systems. Full-time directors

<sup>11</sup> Chapman, H. B., *op. cit.*, p. 166.

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of bureaus in cities of more than 100,000 population and in the Middle West have considerably more experience than have directors in cities of less than 100,000 population and in the other geographical regions.

The report on administration and supervision (Monograph 11 of this Survey) shows that the median length of experience for superintendents and principals is considerably greater than that for directors of research. These data are shown in Figure 2 for comparison with the median in Figure 1 for all directors of research combined. In comparison with staff members, other than superintendents and principals, direc-

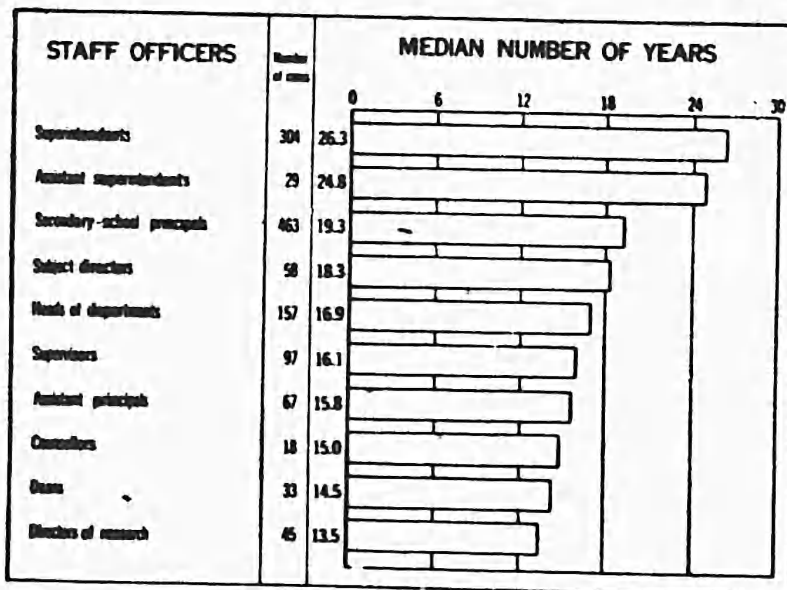


FIGURE 2.—Median number of years of educational experience of staff members and of full-time directors of research

tors of bureaus of research have had about the same amount of educational experience.

*Educational experience in other positions.*—The median numbers of years' experience of full-time directors of research in different types of positions are shown in Figure 3. The median director reporting had about 1.4 years of experience in teaching at the secondary-school level and less than a year at any other level; he had about 1.6 years of experience as principal of either an elementary or secondary school; and he had only slightly more than a half year of experience as superintendent of schools. Data not presented in the

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figure show that 71 per cent of the directors never had teaching experience in city elementary schools, that 44 per cent had no teaching experience in secondary schools, that 60 per cent have not been principals of secondary schools, that 60 per cent have not been principals of elementary schools, and that 78 per cent have never been superintendents of schools. Of the persons who have had experience in the types of positions listed, the median length of service ranges from 2.5 years for rural-school teaching to 4 years for the principalship of secondary schools.

Other things being equal, it would seem that the best directors of educational research would be those with an

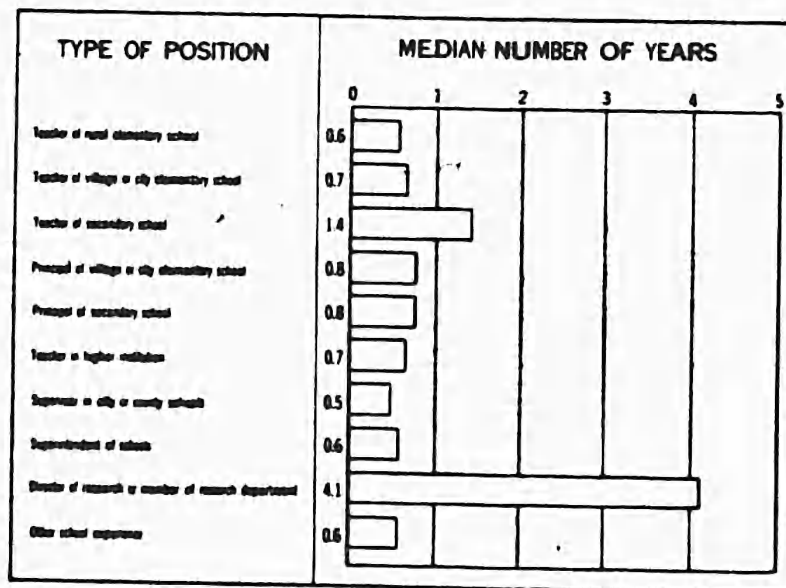


FIGURE 3.—Median number years of experience of both part-time and full-time directors of research according to types of positions held

experience in elementary and secondary education which would enable them to have an intimate knowledge of the nature of the problems to be investigated.

*Tenure in present position.*—In most cases directors of research are holding their first positions in this work. Thus tenure in their present positions is generally identical with their total experience as directors of research. This may no doubt be partially explained because many bureaus of research have not been established for a long time. It may be due also to the fact that the recency of the testing and

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research movement makes it necessary for school systems to choose as research directors persons who have been recently trained.

*Training of directors of research.*—The academic degrees held by directors of these bureaus may be taken as one measure of the extent of training of these persons. The percentages of directors holding different degrees are shown in Figure 4. Considerable proportions of the directors hold doctors' degrees and large percentages hold masters' degrees. The project on the administrative and supervisory staff (Monograph 11) shows that less than 3 per cent of any

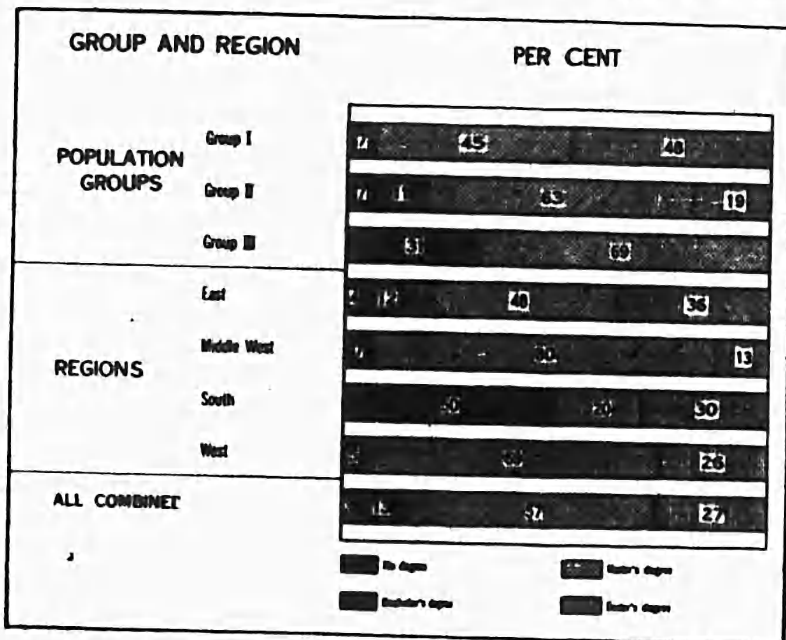


FIGURE 4.—Percentages of directors of research in 60 systems holding different academic degrees as highest degrees

type of officer reported the doctor's degree as the highest degree; from 42 to 46 per cent of the superintendents, assistant superintendents, principals, and assistant principals reported masters' degrees; from 33 to 50 per cent of these officials reported bachelors' degrees; and from 5 to 13 per cent reported no earned academic degree at all. In contrast, a much larger proportion of directors of research hold advanced degrees.

*Number of years since directors received their highest degrees.*—The number of years since directors of research

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received their highest degrees also gives an indication of the recency of their training. The reports of the directors show that the median number of years since they received their highest academic degrees was 7.2 years. The length of time since receiving the highest degree increases with the size of city, but practically no difference exists among the different regions. It was shown in the preceding section that directors in the larger cities also had more educational experience. Length of experience and number of years since receiving the highest degree have a special significance for the large numbers of directors holding either masters' or doctors' degrees. However, it may be noted from Figures

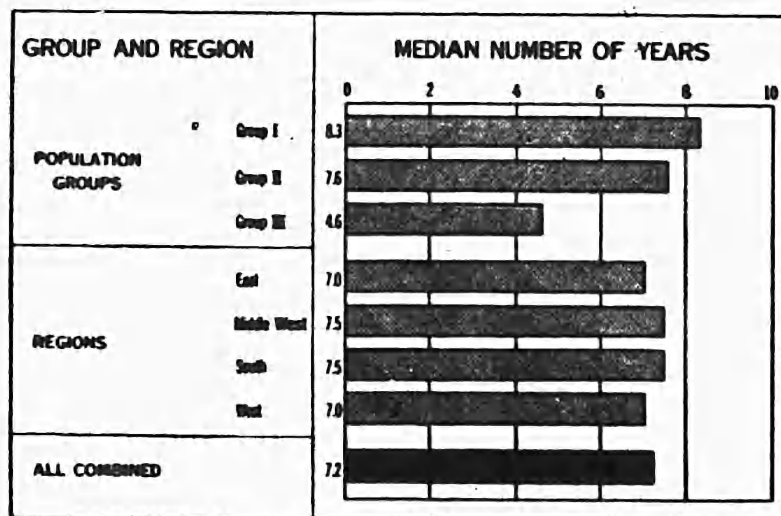


FIGURE 5.—Median number of years since directors of research received their highest academic degrees

1 and 5 that the length of time since directors received their highest degrees is less than the total number of years of educational experience by about six years. In part this may be attributed to the relatively small number (68) of directors reporting data, but not entirely. It clearly points to the fact that many of the directors had educational experience before receiving their highest degrees. Data not shown in tabular or graphical form indicate that 32 per cent of the directors of bureaus have taken work beyond the highest degree which they have received. Only 6 per cent of those with doctors' degrees have taken additional work, 40 per cent of those with masters' degrees have taken additional

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work, and 57 per cent of those reporting only bachelors' degrees have taken work beyond the highest degree held.

*Major and minor fields of study.*—Another significant element in the training of research directors is the type of work for which they made preparation. Table 5 presents data showing the major and first minor study for those directors who reported data. Education (or one of its branches)

TABLE 5.—Major and minor fields of study of directors of research in city systems

Fields of study	Bachelors' degrees		Masters' degrees		Doctors' degrees	
	Major	First minor	Major	First minor	Major	First minor
	2	3	4	5	6	7
Education.....	12	11	27	4	7	1
Administration and supervision.....	2		9	1	7	
Secondary education.....			2			1
Curriculum.....		1		2		1
Tests and measurements.....			1	1		
Statistics.....						1
Research.....			2		1	
English.....	9	6	1	5		
History.....	4	6	3	2		
Foreign languages.....		2		1		
Classical languages.....	5					
Latin.....						
French.....						
Mathematics.....	6	6	1	2		
Philosophy.....		1				
Psychology.....	3	7	6	13	4	4
Science.....	4	5	1	2		
Biology.....	1	2	1	2		
Chemistry.....	3					
Physics.....		2	1			
Social studies.....	1	1				
Economics.....	4	2		1		
Political science.....		1		1		
Sociology.....	2	1		3		2
Other subjects reported once only.....	5	1	1			
Total number reporting.....	61	55	56	40	19	10

appears to have been the major subject for bachelors' degrees in only about 23 per cent of the cases, whereas English, history, foreign languages, mathematics, science, and the social studies account for 62 per cent of the cases. For the master's degree and particularly for the doctor's degree education (or one of its branches) is reported much more frequently as the major field of study. Approximately 71 per cent of the directors with masters' degrees reported education (or one of its branches) as the major subject. Of the



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19 directors with doctors' degrees who reported data, 79 per cent gave education (or some branch of education) as the major subject. The remaining 21 per cent earned their doctors' degrees in psychology.

Education (or one of its branches) is reported as a minor field of study in only 21 per cent of the cases for the bachelor's degree, in 20 per cent for the master's degree, and in 40 per cent for the doctor's degree. Academic subjects, such as English, history, mathematics, science, and the social studies, are reported more frequently as minor fields of study than as major fields of study. It appears from the data presented that directors of research have in a large proportion of the cases been trained specifically for work in the field of education. Many had, in addition, considerable training in psychology.

*Salaries of directors.*—It was shown in a previous section that directors of research rank as assistant superintendents in only one-half of the systems for which reports are at hand. Another important criterion of the standing of the director, and consequently of the bureau itself, is the salary paid to the director. Space permits only the presentation of data concerning the ranges and averages of salaries paid to full-time and part-time directors of educational research. These data are reported in Table 6. As would be expected, the salaries paid to directors differ according to size of city and geographical region. However, the range of salaries paid within groups and regions is large, extending from \$2,500 to \$7,050 in Group I for full-time directors. The average salary paid full-time directors is about \$600 more than the average salary paid to directors who devote only a part of their time to research. Although the number of cases is not large enough to permit detailed comparisons between the groups and regions, the number of full-time directors is sufficiently large to give a fair index of the salary received by directors of research. Chapman reported a median salary of \$4,139 paid to the directors of 47 bureaus of research.<sup>12</sup> The present study includes 40 bureaus of research not represented in the Chapman study. Consequently, the agreement between the studies is significant since it indicates somewhat the same conditions in two largely distinct groups of research bureaus.

<sup>12</sup> Chapman, H. B., op. cit., p. 148.

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TABLE 6.—Salaries paid to full-time and part-time directors of research in 67 city systems

Population group and region	Full-time			Part-time		
	Number of reports	Range	Average	Number of reports	Range	Average
1	2	3	4	5	6	7
Population group:						
I.....	25	\$2,500-\$7,050	\$4,681	4	\$3,950-\$6,800	\$5,138
II.....	16	2,100- 4,800	3,487	10	1,500- 4,500	3,255
III.....	6	1,450- 3,200	2,410	6	1,800- 3,900	2,563
Region:						
East.....	18	2,500- 7,050	4,513	6	2,500- 6,000	3,633
Middle West.....	13	2,100- 6,000	3,685	2	2,100- 6,800	4,450
South.....	6	1,450- 4,400	2,953	4	3,000- 3,950	3,075
West.....	10	2,400- 6,000	4,141	8	1,500- 5,000	3,160
All combined.....	47	2,100- 7,050	4,006	20	1,500- 6,800	3,424

4. STAFFS OF RESEARCH BUREAUS

*Number of assistants in research bureaus.*—The directors of research were requested to report both the number of full- and part-time professional assistants and the number of clerical assistants who devote time to the work of the bureau. From the data supplied it was possible to compute the amount of time given in terms of numbers of full-time workers. These data are presented in Table 7. It is to be expected that the number of staff members of research bureaus in the larger cities would be greater than in the smaller cities, but, in view of the fact that median size of eastern cities for which reports were available is somewhat larger than for cities of the other regions, it is hardly expected that the median size of staff in the South and West would exceed the median size of staff in the East. The number of clerical assistants, on full-time basis, is in all groups and regions almost the same as the median number of professional assistants except in the West. In general, it may be said that the typical research bureau in cities of more than 100,000 population consists of a director, three professional assistants, and clerical assistance equal to that given by about two and one-half full-time workers. In the smaller cities directors of research have only about one professional assistant and one clerk.

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TABLE 7.—Median amount of time devoted to the research bureaus in the equivalent of full-time workers

Group or region	Median number of professional assistants	Median number of clerical assistants	Median number on staff, not counting director <sup>1</sup>
1	2	3	4
Population group:			
I.....	2.8	2.4	5.4
II.....	1.2	1.2	2.1
III.....	1.2	1.0	1.5
Region:			
East.....	1.3	1.4	3.3
Middle West.....	1.3	1.4	2.2
South.....	1.9	2.1	2.7
West.....	2.8	1.5	4.0
All combined.....	1.5	1.4	2.5

<sup>1</sup> The median shown here is not a total of columns 2 and 3.

The data reported by Chapman<sup>13</sup> show the average size of the staff to be 4.6 members for all cities combined. However, because of the fact that the number of research workers in a few of the larger cities influences the average more than the median, the two studies may be assumed to agree rather closely as to the size of the research staff.

*Remaining activities of part-time research workers.*—The directors of research reported a total of 128 part-time professional assistants and 27 part-time clerical assistants who devoted their time to activities listed in Table 8. More than half of the professional assistants who devote part time to the research bureau spend the remainder in elementary-school teaching; about a tenth devote the rest of their time to high-school teaching, and about a fifth devote the remainder of their time to the principalship of a school. The data indicate that elementary-school teachers are used more frequently in the cities having less than 10,000 population and in the West more frequently than elsewhere. Principals are used more often in the cities of from 10,000 to 30,000 population and in the East.

<sup>13</sup> Chapman, H. B., *op. cit.*, p. 142.

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TABLE 8.—*Activities to which part-time professional and clerical assistants devote the remainder of their time*

Part-time positions and activities	Population group			Region				All combined
	I	II	III	East	Middle West	South	West	
1	2	3	4	5	6	7	8	9
<b>Professional assistants:</b>								
Elementary-school teaching.....		3	69		1		71	72
High-school teaching.....		6	6	6	1		5	12
Superintendency.....			2	1			1	2
Assistant superintendency.....		1	1				2	2
Principalship.....		18	7	20			5	25
Other activities.....		14	1	11	3		1	15
<b>Total.....</b>		<b>42</b>	<b>86</b>	<b>38</b>	<b>5</b>		<b>85</b>	<b>128</b>
<b>Clerical assistants:</b>								
Elementary-school teaching.....	1			1				1
High-school teaching.....			2				2	2
High-school attendance (pupil).....	6		5	6			5	11
Other activities.....		9	4	7	3		3	13
<b>Total.....</b>	<b>7</b>	<b>9</b>	<b>11</b>	<b>14</b>	<b>3</b>		<b>10</b>	<b>27</b>

Part-time clerical assistants are high-school pupils in 41 per cent of the cases; elementary-school or high-school teachers in 11 per cent; and other persons, usually office clerks, in the remaining 48 per cent of the cases. Consequently, many persons working in the research bureaus in city systems devote only part of their time to this work. This is not a matter of so great consequence with respect to clerical assistance, because there is less need for constructive thought and undivided attention. However, it is an obstacle to research activity to have professional members of the bureaus divide their interests. Some of these contribute as little as a fourth to a fifth of their time to the work of the bureau. Under such conditions it may be difficult to obtain professional help of the highest order.

### I. BUDGET OF THE BUREAU

*Salary budget.*—Aside from factors, such as the experience and training of the director and the amount of professional and clerical assistance furnished, the effectiveness of bureaus of research, is dependent on available resources. Certainly

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the amount to be spent is important. The salary and operating budgets of bureaus of research in city systems are shown in Table 9. One of the most striking features of the data is the wide range found in both the expenditure for salaries and for operating budget. One bureau in a city of more than 100,000 population has a salary budget as small as \$4,500, whereas another has a salary budget of nearly \$119,000. The median and average were found to differ considerably and for that reason both have been computed and introduced in the table. The difference between the two measures is owing to the large salary budgets for the research bureaus in a few of the cities. For this reason the median probably better depicts the amount available for salaries in the typical bureau for which data are available.

TABLE 9.—Median and average salary and operating budget of city bureaus of research

Group or region	Salary budget				Operating budget			
	Number of cases	Range	Average	Median	Number of cases	Range	Average	Median
1	2	3	4	5	6	7	8	9
<b>Population group:</b>								
I.....	23	\$4,500-\$118,924	\$19,791	\$9,800	19	\$500-\$12,241	\$5,542	\$3,000
II.....	20	1,700- 18,000	7,128	5,800	20	450- 10,620	2,539	1,600
III.....	7	1,050- 6,000	3,553	3,000	9	200- 7,800	2,042	600
<b>Region:</b>								
East.....	13	2,800- 37,500	14,983	8,920	12	500- 12,000	5,253	3,650
Middle West.....	14	1,050- 28,570	8,041	6,150	13	300- 10,000	2,343	1,398
South.....	7	2,600- 9,800	6,850	7,200	6	300- 3,650	1,826	1,950
West.....	16	1,108- 118,924	16,708	6,000	17	200- 12,241	4,609	2,500
All combined.....	50	1,050- 118,924	12,453	6,740	48	200- 12,241	3,645	2,000

*Operating budget.*—The range of operating budgets is from about \$200 to more than \$12,200, a range which shows the wide differences in types of activities which may be carried on by the bureaus of the different cities. Manifestly, a bureau with only \$200 or \$300 to spend for operating expenses could not attempt to carry out a research program comparable with that attempted by a bureau spending from \$10,000 to \$12,000. The median bureau of the 48 reporting spends \$2,000 each year for operating expenses.

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### 6. RESEARCH BUREAUS IN SECONDARY SCHOOLS

*Number of bureaus reported.*—Investigations made of research bureaus in the past have in most cases not reported any bureaus of research within secondary schools. Even the Educational Directory of the Office of Education for 1932 lists only two such bureaus. Reports made to the National Survey of Secondary Education have indicated the names of four more. However, it appears that few bureaus of research have been organized in secondary schools. All but two of those reported are found in the township high schools of Illinois and the union high schools of California, which would not otherwise have access to the services of such an organization. We may conclude that it is decidedly unusual for individual secondary schools in city systems to have bureaus of educational research. We must, therefore, look to the bureau of research in city systems for carrying on organized research within secondary schools.

*Nature of research bureaus in secondary schools.*—Because of the small number of cases, no attempt is made to analyze the work of research bureaus in secondary schools. However, the reports made on the inquiry forms indicate that practically no differences exist between bureaus in secondary schools and those in city schools, either in the organization of the bureaus or in the fields in which studies are conducted. The most important difference lies in the fact that studies made by the bureaus in secondary schools pertain chiefly to problems of secondary education. In the cases of secondary schools having bureaus of their own practically no research work was reported by members of the staffs not connected with the bureaus.

### 7. SUMMARY

*The establishment of bureaus.*—The bureaus of educational research in city systems as defined in this study include all definitely created subdivisions, of whatever title, which either conduct certain investigational or reference activities or direct such activities when carried on by others. The development of bureaus of research has been particularly rapid during the past 10 years, until at the present time the approximate number of research bureaus in city systems is about 150. In addition there are probably about 28 bureaus or

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departments in State departments of education, about 35 connected with State universities and colleges, and about 20 in teachers colleges and normal schools.

*The city director of research.*—Full-time directors of research in city systems rank as assistant superintendents in only about half of the systems. When only part-time workers, directors devote the remainder of their school time to any one of several different positions. The directors of research are usually directly responsible to the superintendent of schools for the performance of their duties. The median director has had about 13.5 years of educational experience and has been in his present position for slightly more than four years. Approximately 57 per cent of the directors hold masters' degrees and in addition about 27.5 per cent hold doctors' degrees. The masters' degrees have been taken in the field of education in 71 per cent of the cases and the doctors' degrees in 79 per cent.

*Staff of the bureau.*—The number of professional and clerical assistants varies with the size of city in which the bureau is located. The directors have a median of 1.5 professional assistants usually recruited from elementary-school teachers or from principals. The median amount of clerical assistance allowed is equal to that given by about 1.4 full-time clerks. The range in the number of assistants and the budget for salaries and operating expenses are such as to necessitate wide variations in types of research programs conducted by the different research bureaus. The nature of these programs will be treated in a later chapter.

*Research bureaus in secondary schools.*—The data shown in this report indicate that research bureaus established in city school systems are responsible for research at both elementary and secondary levels. Practically no bureaus of research have been established within individual secondary schools of city systems. However, a few bureaus have been organized in independent secondary schools in Illinois and California which are supported by school districts maintaining work at the secondary level only.

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## CHAPTER III : FUNCTIONS OF BUREAUS OF RESEARCH

### I. THE PROBLEM

*What is research?*—It is the belief of many that the work of research bureaus, as these are defined in Chapter II, frequently deals with functions and activities which can hardly be classified as genuine research. This leads to the important question of what educational research is. It is even more difficult to define satisfactorily this term than to define "research bureau." Much has been written concerning the need for educational research, how to do research work, the values of educational research, the contributions of educational research, yet with respect to the definition of research the present situation is much the same as it was in 1928 when Monroe<sup>1</sup> stated that "although the term 'educational research' is widely used, an authoritative definition is wanting. Our educational literature contains a number of descriptive statements, but for the most part they can not be used as criteria for identifying educational research." It is not the purpose of this report to analyze the diverse opinions which have been set forth concerning the nature of research. Monroe<sup>2</sup> has presented a complete account of these opinions, and for this reason little attention will be given to the matter here other than to point out that the concensus of opinion among educational leaders is that much of the material presented as educational research may be closely related to it, but still is not research.<sup>3</sup>

<sup>1</sup> Monroe, W. S. *and others*. Ten Years of Educational Research. Bureau of Educational Research, College of Education, University of Illinois, Bulletin II, 42, Urbana, Ill., 1928, p. 15.

<sup>2</sup> Monroe, W. S. *and others*. Op. cit., pp. 15-20.

<sup>3</sup> For more detailed considerations of this topic see—

1. Newlon, J. H. What Research Can Do For the Superintendent. *Journal of Educational Research*, 8:106-112, September, 1923.
2. Judd, C. H. Needed Research in Elementary Education. *Fifteenth Yearbook of the National Society of College Teachers of Education*. Chicago, University of Chicago Press, 1926, pp. 56-65.
3. Rugg, H. O. Statistical Methods Applied to Educational Testing. *Twenty-first Yearbook of the National Society for the study of education*. Bloomington, Ill. Public School Publishing Co., 1923, pp. 45-91.
4. What is Research? *School Review*, 34:483, September, 1926.



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In view of the lack of authoritative definition of the term "research" it is not at all surprising that research bureaus are "called upon to exercise many functions which are often properly not research."<sup>4</sup> Any definition to serve the purpose of this report should distinguish between true research and the mere descriptive account of educational programs or the mere compilation of facts and statistics. One such definition follows:

The most conspicuous phase of educational research is the collection and statistical treatment of objective data when they are needed as a basis for answering a question. However, it is important to note that collecting facts does not constitute all of educational research. It is only one phase of the procedure. There must be a clear definition of the problem in which there is a precise statement of all the questions to be answered. As noted above the data must be examined critically. This objective quality does not insure either accuracy or validity. Finally the research worker must maintain a critical attitude throughout the interpretation of his data and in the verification of hypothesis.<sup>5</sup>

*Purpose of the chapter.*—It is the purpose of this chapter to report the activities and functions of the city bureaus of educational research which responded to the inquiry of the National Survey of Secondary Education. More specifically, the chapter will show (1) the administrative and supervisory activities performed by bureaus of research, (2) the types of investigations which bureaus are authorized to make should occasion arise, (3) the number of studies actually made in the different fields of education, particularly at the level of secondary education, (4) the extent to which research studies are made available through the duplication of reports, and (5) the coordination of research work being conducted by staff members of the system. Further evidence concerning the nature of the research done in the bureaus, as disclosed by an analysis of the reports issued, is presented in Chapter V.

### 1. ADMINISTRATIVE AND SUPERVISORY FUNCTIONS PERFORMED BY BUREAUS OF RESEARCH

*Source of data.*—The inquiry forms mailed to the directors of research in city systems contained a list of 24 activities and functions largely of an administrative or supervisory

<sup>4</sup> Chapman, H. B. Bureaus of Educational Research in the United States. Educational Research Bulletin, 6:7-9, Jan. 5, 1927.

<sup>5</sup> Monroe, W. E. Service of Educational Research to School Administrators. American School Board Journal, 70:37, April, 1925.

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nature. It is true that many of the activities listed are closely related to educational research or are dependent on research procedures, but in general they are administrative rather than investigative. This list of activities and the percentages of bureaus reported by directors to be engaged in them are shown in Table 10.

TABLE 10.—Percentages of directors of 70 city research bureaus reporting the performance of certain administrative and supervisory functions

Function performed	Population group			Region				All combined (70)
	I (29)	II (28)	III (13)	East (25)	Middle West (15)	South (10)	West (20)	
1	2	3	4	5	6	7	8	9
Administer achievement and mental tests.....	86.2	92.9	100.0	88.0	93.3	90.0	96.0	91.4
Classify pupils.....	68.6	82.1	92.3	68.0	69.7	80.0	85.0	74.3
Train teachers for special testing.....	58.6	57.1	46.2	48.0	40.0	70.0	70.0	65.7
Give educational guidance.....	44.8	57.1	92.3	48.0	53.3	60.0	72.0	58.6
Give vocational guidance.....	27.6	21.4	61.6	36.0	13.3	20.0	45.0	31.4
Place students in industry.....	13.8	10.7	23.1	20.0	-----	10.0	20.0	14.3
Prepare and publish reports.....	93.1	85.7	69.2	88.0	86.7	70.0	90.0	85.7
Disseminate educational information.....	65.6	57.1	70.9	64.0	40.0	80.0	75.0	64.3
Provide lecture service.....	27.6	17.9	15.4	28.0	6.7	20.0	25.0	21.4
Conduct publicity campaigns.....	27.6	21.4	23.1	28.0	13.3	30.0	25.0	24.3
Administer school census.....	27.6	17.9	23.1	20.0	6.7	20.0	40.0	22.9
Check building plans.....	27.6	10.7	-----	24.0	6.7	30.0	5.0	15.7
Compile budget.....	10.3	14.2	15.4	24.0	13.3	-----	5.0	12.9
Conduct psychological clinic.....	41.3	46.4	30.8	32.0	53.3	40.0	45.0	41.4
Organize and supervise special classes.....	31.0	60.7	46.2	28.0	53.3	70.0	50.0	43.7
Supervise teaching.....	6.9	35.7	38.5	28.0	20.0	40.0	15.0	24.3
Supervise instruction for handicapped students.....	13.8	46.4	23.1	12.0	40.0	40.0	35.0	28.6
Guide and supervise research studies carried on by teachers.....	75.9	75.0	61.6	76.0	73.3	50.0	80.0	72.9
Provide a business and accounting service for school system.....	6.9	7.1	23.1	12.0	13.3	20.0	-----	10.0
Answer questionnaires for the school system.....	89.7	89.3	76.9	96.0	86.7	80.0	80.0	87.1
Conduct professional library.....	27.6	28.6	30.8	40.0	13.3	40.0	20.0	28.6
Conduct Americanization service.....	-----	-----	7.7	-----	-----	10.0	-----	1.4
Provide adult education.....	6.9	-----	7.7	8.0	-----	-----	5.0	4.3
Select and assign teachers.....	6.9	10.7	23.1	20.0	6.7	-----	10.0	11.4
Other administrative or supervisory functions.....	6.9	10.7	7.7	4.0	13.3	-----	15.0	8.6

NOTE.—The numbers in parentheses indicate the number of bureaus represented.

*Types of activities performed.*—Large percentages of directors reported that their bureaus of research performed the activities of administering achievement and mental tests, of answering questionnaires for the school system, of preparing and publishing reports, of classifying school children, and of

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guiding and supervising research studies carried on by individual teachers. It should be made clear at the outset that no attempt is being made to show that these activities and functions are not important. On the contrary, they may be exceedingly vital to the proper administration of any school system. However, the mere fact that a function is important by no means argues that it is a research activity or that logically it should be delegated to the research bureau, unless the particular bureau is a composite one exercising more than one function. Such a practice might be condoned for bureaus in smaller systems more often than in larger ones. It is true that such activities and functions may utilize research procedures, but this does not imply that these functions should be delegated to the research bureau. In view of the use of these procedures, it is easy to explain the assignment of these administrative responsibilities to bureaus of research especially during the present period when many administrative officers are unacquainted with the procedures. The functions of research bureaus touching these activities may well be to investigate the problems, to interpret the data, and even perhaps to support tentative plans and courses of action. However, adopting these plans and putting them into operation are administrative matters. If research bureaus are delegated many diverse administrative and supervisory functions, it is difficult to see how they will have the time or resources to do much in the way of research in the stricter sense. This is especially true with limited budgets like those reported in Chapter II. An editorial in one of our educational periodicals states well this viewpoint by calling attention to the fact that often research bureaus are subordinated in their activity, because they get too little money to be of great service and they get too little time to work on research activities. Since other activities are delegated to the bureau for immediate attention, research activities are of necessity pushed aside.<sup>6</sup>

Of the 24 specific activities listed in Table 10, ten are performed by at least 40 per cent of the 70 bureaus and seven only are performed by less than 20 per cent of the bureaus. One might hazard a guess from the practices shown, that if

<sup>6</sup> Research v. Service, *Elementary School Journal*, 28 : 242-249, December, 1927.

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some of these activities, such as adult education and Americanization service, were provided in a greater number of systems, bureaus of research would bear the responsibility in even larger proportions of the cases. If bureaus of research are to provide more real research service for the public schools, it seems clear that they must be relieved of a great many administrative and supervisory duties and functions.

*Differences between groups and regions.*—Data not presented in this report enable one to total the number of administrative and supervisory activities conducted by bureaus of research and to obtain an average through dividing by the number of systems reporting. For example, in Group I (Table 10) the 24 different administrative activities were reported 254 different times by 29 bureaus. The average number of times the activities were reported was 8.8. The average for Group II was 9.5, and for Group III, 10.1. No notable difference exists between the different regions. This indicates that size of city and geographical location play little part in determining whether many or few administrative activities are delegated to bureaus of research.

However, it should not be implied that small differences exist among the groups and regions on all specific activities. Such is not the case, for the bureaus are delegated responsibility for many activities much more frequently in the smaller cities. Particularly is this true with respect to classifying pupils, giving educational guidance, supervising teaching, providing a business and accounting service, and selecting new teachers. On the other hand, bureaus in large cities more often publish reports, take the school census, and check building plans. Large differences also exist among the geographical regions on specific activities, but space does not permit a detailed discussion of the activities most frequently delegated to the bureaus in the different regions.

*Comparisons with other studies.*—In a list of functions performed by 48 bureaus of research Herbst<sup>7</sup> showed that the administration of achievement tests ranked first in frequency of mention, administration of mental tests ranked second, and classification of pupils, third. The list of activities reported did not include the activities of answering question-

<sup>7</sup> Herbst, B. L. *op. cit.*, p. 34.

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naires or preparing and publishing reports. If these activities were omitted from the present study the ranks of the first few items would be the same. Wright<sup>8</sup> also gives the functions of research bureaus, but lists only eight general categories. These are too general in nature to be highly valuable in determining the different activities actually performed by research bureaus. However, testing ranks first. Chapman<sup>9</sup> also reports the functions performed by bureaus of research and presents data similar to those reported in Table 10. He calls attention to the fact that for the most part the activities reported by more than half the bureaus relate to measurement and its application to school problems.

*Functions which directors think bureaus should perform.*—Herbst<sup>10</sup> also presents the functions which 43 directors of research believe to be the "proper functions of bureaus of research." All directors considered the administration of mental and achievement tests and the classification of pupils to be proper functions of the bureau. Ninety-three per cent reported the experimental study of curriculum and instructional problems and educational surveys to be activities which properly should be delegated to the research bureau. Even educational and vocational guidance, devising record and report forms, and publicity service were reported by from 72 to 86 per cent of the directors. Again it should be pointed out that the performance of such functions may be a valuable service to the school system, but that the performance of the different administrative activities should not be confused with nor designated as research work, nor should it be permitted to usurp the opportunities for fundamental research. While the making of studies basic to guidance and the preparation of records and forms may properly be considered research functions, the giving of guidance itself is not a research activity in the strict sense.

### 3. INVESTIGATIONS BUREAUS ARE AUTHORIZED TO CONDUCT

*Possible scope of activities of bureaus.*—In addition to performing a number of activities more or less administrative in character, bureaus of research conduct investigations in

<sup>8</sup> Wright, Edith A. *op. cit.*, p. 4.

<sup>9</sup> Chapman, H. B. *Organized Research in Education*, Ohio State University, Bureau of Educational Research Monographs, No. 7, 1927, pp. 172-175.

<sup>10</sup> Herbst, R. L. *op. cit.*, p. 40.

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many different fields. The directors of 60 bureaus of research responded to the request made by this survey to check once those fields of investigation in which the bureau, in their judgment, could properly conduct investigations should the occasion arise, and to check twice those fields in which the bureau had actually made investigations. An attempt was made in this manner to secure a general picture of the possible scope of the research activities of the bureaus. The replies of the 60 directors concerning the fields of investigation in which the bureaus are authorized to conduct investigations are summarized in Table 11. Because of the small differences existing between the groups and regions, classification on these bases has been omitted from the table. For none of the 39 activities listed do all the directors of the 60 bureaus report that the bureau is authorized to conduct investigations. Fifty-two, or 88 per cent, of the directors reported that the bureaus could make investigations concerning pupil failures, while on the other hand as few as 24 per cent reported that the bureau is authorized to make investigations of employment service or of the clerical staff. Twenty-three of the 39 fields listed were fields in which at least half of the bureaus were authorized to conduct research studies and 16 were considered fields in which less than half of the bureaus were authorized to make investigations.

*Investigations most frequently and least frequently authorized.*—The judgments of directors indicate that bureaus are most frequently authorized to conduct investigations relating to standardized examinations and achievement tests and to the promotion, failure, classification, retardation, and elimination of pupils. Their judgments also indicate that bureaus are authorized least frequently to conduct studies concerning employment service, the clerical staff, libraries, supervision of instruction, student personnel, and vocational guidance.

*Differences between groups and regions.*—Although the data shown in Table 11 do not enable one to make comparisons showing differences or similarities in functions among bureaus in cities of different size and in different regions of the country, it is obvious that in the smaller cities less need exists for some of the types of service found in the larger

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cities. For this reason it is not surprising that bureaus of research in smaller cities should be authorized less frequently to conduct studies relating to the clerical staff, problems of educational finance, employment service, and the organization of the school system. Differences between the geographical regions are less striking.

TABLE 11.—Fields in which 80 city bureaus of educational research are authorized to conduct and have conducted investigations

Fields of research	Number of bureaus	
	Authorized to conduct	Having conducted
1	2	3
<b>Administration:</b>		
Buildings, equipment, and supplies.....	24	16
Clerical staff.....	15	6
Educational finance problems.....	23	17
Marks and marking systems.....	40	19
Organization of school system.....	25	9
Promotions.....	52	32
Records and report forms.....	43	20
School building program.....	22	15
<b>Teachers and instruction:</b>		
Class size.....	45	27
Curriculum studies.....	35	21
Educational guidance.....	30	18
Extra curriculum.....	25	8
Professional status of teachers.....	53	18
Supervision of instruction.....	20	4
Teaching methods.....	21	4
Teaching load.....	40	22
Vocational guidance and placement service.....	24	9
<b>Pupils:</b>		
Attendance of pupils.....	33	16
Classification of pupils.....	56	36
Employment service.....	16	5
Follow-up studies.....	28	12
Individual differences.....	37	13
Pupil failures.....	53	32
Retardation and elimination.....	49	26
Student personnel problems.....	24	8
Studies of handicapped children.....	36	16
<b>Surveys and tests:</b>		
Achievement tests.....	52	45
Mental tests.....	49	40
Objective classroom examinations.....	29	26
Surveys of school systems.....	22	11
Survey tests and standardized examinations.....	50	45
Test construction.....	42	28
<b>Others:</b>		
Kindergarten and primary education.....	35	15
Elementary education.....	37	18
Secondary education.....	37	15
Libraries and library service.....	18	4
Preparation of bibliographies.....	27	8
Studies of research functions.....	20	7
Textbook analysis.....	24	14
Other types of studies.....	17	17

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### 1. INVESTIGATIONS CONDUCTED BY RESEARCH BUREAUS

*Types of studies most frequently made.*—In addition to reporting the fields in which bureaus were authorized to make investigations, the directors also reported the fields in which the bureaus had actually made investigations. These data also are presented in Table 11. The frequency with which bureaus are authorized to conduct investigations in certain fields is not an index of the actual types of investigations made. The greatest proportions of bureaus are authorized to conduct investigations concerning pupil failures and promotions, but the greatest proportions of bureaus reported the completion of studies involving standardized examinations and achievement tests. However, it should be stated that some relationship exists between the proportions of systems authorized to make investigations and the proportions of those actually making studies in these fields. The seven fields in which the larger proportions of bureaus are authorized to make investigations are also reported to be the fields in which the larger proportions of bureaus have made investigations. The ranks of the specific field, however, differ considerably.

*Fields in which few bureaus have made studies.*—Of the 60 directors of research who reported the fields in which the bureaus of research have made investigations, only 4 reported studies relating to library service, the supervision of instruction, or teaching methods. Only 5 have made studies of employment service, and only 6 have made studies relating to the clerical staff. From the data at hand it is not possible to determine why research bureaus have made so few studies in these and other fields which might be mentioned. Of course, as seen in Table 11, these fields are not frequently considered to be within the scope of the activities of research bureaus; but, even so, bureaus make fewer studies in these fields in proportion to the number of bureaus which are authorized to make such studies than is the case in the fields relating to pupil failures, promotions, and testing. For example, 52 bureaus reported achievement testing to be within the scope of their investigational activities and 45 bureaus have made one or more studies in this field. On the other hand, 21 directors reported that their bureaus are authorized to investigate problems concerning teaching



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methods, but only 4 have made investigations in this field. The same may be said of a number of other fields. The reasons for the differences in types of studies made may be numerous. Doubtless a greater need exists for investigations in some fields than in others, or it may be that some problems are of such a nature that the typical research bureau in city systems is unable to cope adequately with them. In any event the evidence indicates that bureaus administer tests and examinations, classify pupils, study pupil failures and promotions, but attempt little research concerning supervision of instruction, teaching methods, library service, or employment service. In further explanation, it may be said that many of the bureaus had their origin in the development of the testing movement. Research bureaus were early delegated the responsibility for administering mental and achievement tests.

### 5. STUDIES IN PROGRESS DURING 1929-30

*Total number of studies in progress.*—Another indication of the type of research work conducted by bureaus of research may be seen in the numbers of studies in progress in the different fields of investigation during the year 1929-30. These data are shown in Table 12 for 39 different fields of investigation. During the year 1929-30, 1,100 studies were reported to be in progress in the 53 bureaus replying on this item. Assuming that the reports have been correctly made, the average number is 21.1. The application or development of survey tests and standardized examination, achievement tests, and curriculum studies together constitute nearly a third of the total number of studies in progress during the year, almost as large a proportion in cities of more than 100,000 population, about two-fifths in cities from 30,000 to 100,000, and almost half in cities having less than 30,000 population. Studies in these same three fields constitute more than a fourth of the total number in progress in the East and West and about half the total in the Middle West.

It has been shown in Chapter II that the typical bureau has a director who has three assistants about evenly divided between professional and clerical service; the median operating budget is about \$2,000. The large number of investi-

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TABLE 12.—Total number of research studies in progress in 1929-30 in 53 city research bureaus

Field of research	Population group			Region				All combined (53)
	I (22)	II (19)	III (12)	East (18)	Middle West (8)	South (7)	West (17)	
1	2	3	4	5	6	7	8	9
<b>Administration:</b>								
Buildings, equipment, and supplies.....	17	2	4	7		3	13	23
Clerical staff.....	4						4	4
Educational finance problems.....	7	4		2	5		4	11
Marks and marking systems.....	9	9	3	5	5	1	10	21
Organization of school system.....	6	1	1	2			6	8
Promotions.....	31	13	5	21	4	12	12	49
Records and report forms.....	13	10	6	11	2	2	14	29
School building program.....	17	2		7	2	3	7	19
<b>Teachers and instruction:</b>								
Class size.....	14	7	4	8	1	5	11	25
Curriculum studies.....	64	21	13	33	21	2	42	96
Educational guidance.....	12	4	24	9	1		30	40
Extracurriculum.....	3		4	2			5	7
Professional status of teachers.....	9	4	3	5	3	3	5	16
Supervision of instruction.....	2	2		1		1		2
Teaching methods.....		1	2		1		2	3
Teaching load.....	10	5	4	9	2	1	7	19
Vocational guidance and placement service.....	5	2	1	2	1	1	4	8
<b>Pupils:</b>								
Attendance of pupils.....	25	2	2		2	1	26	29
Classification of pupils.....	28	11	11	12		7	31	50
Employment service.....	3	1		2			2	4
Follow-up studies.....	9		1	5		1	4	10
Individual differences.....	2	2	1	2	2		1	5
Pupil failures.....	10	9	6	7	3	4	11	25
Retardation and elimination.....	12	8	7	5	5	4	13	27
Student personnel problems.....	5		1	1			5	6
Studies of handicapped children.....	6	3	1	1	1	3	5	10
<b>Surveys and tests:</b>								
Achievement tests.....	47	64	27	49	46	6	46	138
Mental tests.....	41	15	13	18	7	21	23	69
Objective classroom examinations.....	10	5	7	9	3	3	7	22
Surveys of school systems.....	6	2		6		1	1	8
Survey tests and standardized examinations.....	82	24	17	44	10	33	36	123
Test construction.....	28	11	3	29	9	2	12	52
<b>Others:</b>								
Kindergarten and primary education.....	4	3	4	2	2		7	11
Elementary education.....	23	9	7	23	6	1	9	39
Secondary education.....	28	2	10	33	2		5	40
Libraries and library service.....	1		2				3	3
Preparation of bibliographies.....	1	1	2	1			3	4
Studies of research functions.....	1	3	1	1	2	1	1	5
Textbook analysis.....	18	3		3	2		16	21
Other types of studies.....	22	3	3	9	2	5	17	33
<b>Total.....</b>	<b>643</b>	<b>268</b>	<b>206</b>	<b>377</b>	<b>152</b>	<b>127</b>	<b>460</b>	<b>1,116</b>
<b>Average.....</b>	<b>29.2</b>	<b>14.1</b>	<b>17.1</b>	<b>20.9</b>	<b>19.0</b>	<b>18.1</b>	<b>27.1</b>	<b>21.1</b>

NOTE.—The numbers in parentheses indicate the number of bureaus represented

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gations performed by individual bureaus, as indicated by the range from none to 124, with an average of 21.2, leads one to wonder about the nature of research done by these bureaus. Can research bureaus which are equipped, manned, and supported in the manner shown carry on 21 substantial researches during the course of a single school year? Some answer to this question will be attempted in Chapter V.

Differences among the groups and regions are striking for some of the fields of investigation. Many of the bureaus in small cities have reported few or no studies in progress in several of the fields of investigation such as the clerical staff, employment service, follow-up studies of pupils, pupil personnel problems, and school organization. Investigations in these fields are made chiefly in the larger cities.

*Number of studies in progress relating primarily to secondary education.*—In the preceding section it was pointed out that 1,116 studies were reported in progress in 53 bureaus of research in 1929-30. Table 13 presents data showing that 563, or 50.4 per cent, of the total number of studies relate primarily to the field of secondary education. Only slight variations from this proportion were found for the different population groups and regions. In the field of secondary education curriculum studies, standardized examinations, and achievement tests constitute almost 31 per cent of the total number of studies reported to be in progress. Almost 40 per cent of the total number of studies in progress relating primarily to secondary education deal with some form of test administration or test construction. In general, small differences exist between the fields in which studies are made by bureaus relating to secondary education and the fields in which studies are made for all levels.

*Number of studies mimeographed.*—The extent of the practice of mimeographing the reports of studies is shown in Table 14. Slightly more than 50 per cent of the total number of reports from the studies in progress during 1929-30 were mimeographed. From 84 to 96 per cent of the reports of studies concerning class size, promotions, pupil failures, and retardation and elimination were mimeographed. On the other hand studies concerning test construction and records and report forms are mimeographed in only 17 to 24 per cent of the cases, respectively.

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TABLE 13.—Number of studies in progress which relate primarily to secondary education

Field of research	Population group			Region				All combined (53)
	I (22)	II (19)	III (12)	East (18)	Middle West (8)	South (7)	West (17)	
1	2	3	4	5	6	7	8	9
<b>Administration:</b>								
Buildings, equipment, and supplies.....	8		2	2			8	10
Clerical staff.....								
Educational finance problems.....	5			1	1		3	5
Marks and marking systems.....	6	4	2	3	3		6	12
Organization of school system.....	3		1				4	4
Promotions.....	18	4	2	13		7	4	24
Records and report forms.....	7	5	2	5		1	8	14
School building program.....	7			3		1	3	7
<b>Teachers and instruction:</b>								
Class size.....	12	2	2	6	1	2	7	16
Curriculum studies.....	22	16	9	10	12		25	47
Educational guidance.....	9	2	5	6			10	16
Extracurriculum.....	2		3	2			3	5
Professional status of teachers.....	1	1	1	1	1		1	3
Supervision of instruction.....								
Teaching methods.....			1				1	1
Teaching load.....	9	2	3	6		1	7	14
Vocational guidance and placement service.....	5		1	1		1	4	6
<b>Pupils:</b>								
Attendance of pupils.....	23	1	2		1		25	26
Classification of pupils.....	13	5	7	6		1	18	25
Employment service.....	2	1		2			1	3
Follow-up studies.....	8		1	5			4	9
Individual differences.....	1	1	1	1	1		1	3
Pupil failures.....	4	3	3	3	1	1	5	10
Retardation and elimination.....	5	2	4	3	1		7	11
Student personnel problems.....	2		4	1			5	6
Studies of handicapped children.....	1						1	1
<b>Surveys and tests:</b>								
Achievement tests.....	18	17	23	22	12	1	23	58
Mental tests.....	28	5	5	10	2	17	9	38
Objective classroom examinations.....	8	3	6	7	3		7	17
Surveys of school systems.....	1	2		2		1		3
Survey tests and standardized examinations.....	42	18	8	20	9	22	17	68
Test construction.....	24	7	2	20	5		8	33
<b>Others:</b>								
Secondary education.....	28	2	10	33	2		5	40
Libraries and library service.....			1				1	1
Preparation of bibliographies.....			1				1	1
Studies of research functions.....		1		1				1
Textbook analysis.....	13			1			12	13
Other kinds of studies.....	7	1	4	5		2	5	12
<b>Total.....</b>	<b>342</b>	<b>105</b>	<b>116</b>	<b>201</b>	<b>55</b>	<b>58</b>	<b>240</b>	<b>563</b>
<b>Average.....</b>	<b>15.5</b>	<b>5.5</b>	<b>9.7</b>	<b>11.2</b>	<b>6.9</b>	<b>8.2</b>	<b>14.7</b>	<b>10.6</b>

NOTE.—The numbers in parentheses indicate the number of bureaus represented.

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TABLE 14.—Number of studies made available for general use through the reproduction of copies

Field of research	Number of studies in progress 1929-30	Number of reports		
		Mimeographed	Printed	Published in periodicals
1	2	3	4	5
<b>Administration:</b>				
Buildings, equipment, and supplies.....	23	12	1	1
Clerical staff.....	4	4		
Educational finance problems.....	11	5		1
Marks and marking systems.....	21	14	2	
Organization of school system.....	8			
Promotions.....	49	44	3	
Records and report forms.....	29	7	1	
School building program.....	19	7		1
<b>Teachers and instruction:</b>				
Class size.....	25	21	1	2
Curriculum studies.....	98	44	18	3
Educational guidance.....	40	13	6	
Extracurriculum.....	7	2	1	
Professional status of teachers.....	16	14	1	
Supervision of instruction.....	2	1		
Teaching methods.....	3			
Teaching load.....	19	18	2	1
Vocational guidance and placement service.....	8	6	1	
<b>Pupils:</b>				
Attendance of pupils.....	29	22		
Classification of pupils.....	50	24	1	5
Employment service.....	4	3	1	
Follow-up service.....	10	7	1	1
Individual differences.....	5	5		
Pupil failures.....	25	24	1	1
Retardation and elimination.....	27	26	4	
Student personnel problems.....	6	4	2	
Studies of handicapped children.....	10	4	1	
<b>Surveys and tests:</b>				
Achievement tests.....	138	89	3	1
Mental tests.....	69	23	1	
Objective classroom examinations.....	22	11		
Surveys of school systems.....	8	4	1	
Survey tests and standardized examinations.....	123	64	1	1
Test construction.....	52	8	8	
<b>Others:</b>				
Kindergarten and primary education.....	11	6		
Elementary education.....	39	10	1	1
Secondary education.....	40	10	3	
Libraries and library service.....	3	1	2	
Preparation of bibliographies.....	4	2	1	
Studies of research functions.....	5	4		
Textbook analysis.....	21	8	7	1
Other types of studies.....	33	12	4	1
<b>Total</b> .....	<b>1,116</b>	<b>586</b>	<b>81</b>	<b>11</b>

Number of studies printed or published in magazines.—The same table shows also the number of studies in progress in 1929-30 which were printed and were published in educational periodicals. These are more exacting tests of the basic merit and general usefulness of the projects than is reproduction by mimeographing. As expected, the number of studies made available in this manner is much smaller than through the

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method of mimeographing. In a few cases, no doubt, studies have been mimeographed and printed, or mimeographed and published in magazines, or printed both as bulletins and as articles in educational periodicals. The data do not show the number of studies which have been reproduced by two or more methods. They do show, however, that about 7.2 per cent have been printed and that 2 per cent have been published in magazines. Even if the data presented in Table 14 do not include reports of studies duplicated by two or more methods, the number of reports not mimeographed, printed, or published must total about two-fifths of the total number of studies made. The findings of these studies can not be made available except in a limited way through the use of typewritten copies. This latter procedure may sometimes be appropriate, especially if a study is made only for the guidance of administrative officers. In interpreting the small total proportion duplicated, it is well to recall that the studies referred to were reported to be "in progress," and were not reported as completed.

TABLE 15.—Number of studies made by research bureaus submitted to universities as masters' or doctors' theses

Population group and region	Total number of studies in progress 1929-30	Number submitted as thesis toward the—		
		Master's degree	Doctor's degree	Total
1	2	3	4	5
Population group:				
I.....	643	2	1	3
II.....	268	2	1	3
III.....	205	5		5
Region:				
East.....	377	3	1	4
Middle West.....	152			
South.....	127			
West.....	460	6	1	7
All combined.....	1,116	9	2	11

*Number of studies used as theses.*—Of the total number of studies in progress during the year 1929-30 nine only were submitted to colleges and universities as masters' theses and two only as doctors' dissertations. (See Table 15.) This is a very small proportion of studies eventuating in theses submitted for degrees and indicates that the research programs

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of these bureaus are almost completely independent of plans of bureau staffs to use the reports of investigations in meeting the requirements for advanced degrees. Certainly the bureaus are not chargeable with being exploited by degree-seeking persons.

*Number of studies affecting school organization, administration, and practice.*—Educational research is frequently criticized because it is of little significance to school systems. The directors of research were requested to name the studies listed under the categories shown in Table 16 which they believed had markedly affected school organization, administration, and practice. About 17 per cent of the total number were considered to be important from the standpoint of affecting school practices. Although the differences are not large, there appears to be a slight tendency for directors of research in cities of 30,000 to 100,000 and in the East to consider the research conducted in their bureaus as affecting school practices more markedly than in other groups and regions. But the small proportion affecting practice is significant and may explain the small budgets and the absorption of the bureaus in administration rather than in research proper. However, the criterion of affecting school organization, administration, and practice is too restricted to be entirely adequate to appraise all lines of research reported by the directors.

TABLE 16.—Number and per cent of studies in progress in 1929-30 which markedly affected school organization, administration, and practice

Population group and region	Total number of studies in progress	Affecting school organization, administration, and practice	
		Number	Per cent
1	2	3	4
Population group:			
I.....	643	56	8.7
II.....	298	40	14.9
III.....	206	19	9.2
Region:			
East.....	377	55	13.5
Middle West.....	152	9	5.9
South.....	137	8	5.3
West.....	460	43	9.2
All combined.....	1, 116	115	10.3

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### 6. COORDINATION OF RESEARCH ACTIVITIES

*Types of coordination needed.*—During the past 15 years the amount of literature published under the title of educational research has accumulated rapidly. At present there is a distinct need for the coordination of research activities (1) to prevent useless duplication of studies which have dealt adequately with certain problems, (2) to fit the completed or contemplated researches into some kind of systematic whole, as contrasted with the more or less desultory manner in which research bureaus and students of education have attacked problems in the past, and (3) to furnish other bureaus or persons interested in research with adequate and accurate data concerning certain problems.

TABLE 17.—*Frequency with which the bureaus of 42 systems coordinate their research activities with those of other research agencies*

Agencies with which research work is coordinated	Frequency
1. Teachers within the same school system.....	35
2. Teachers in other school systems.....	11
3. Research departments in State universities and colleges.....	16
4. Research departments in State departments of education.....	14
5. Research departments in State teachers' associations.....	13
6. Private universities or colleges.....	2
7. National Education Association.....	3
8. Other research departments.....	7
9. Principals' associations.....	1
10. Other plans.....	4

As many as 42 of the 69 directors reporting—not far from two-thirds—indicated that there was in operation a plan designed to coordinate research work done by the bureau with that conducted by other agencies. The different agencies with which the research work is coordinated are shown in Table 17. More than four-fifths reported that research work done by the bureaus was coordinated with that done by teachers within the system; but only a fourth to less than two-fifths reported that it is in any way coordinated with research conducted by teachers in other systems, research departments in State teachers' associations, State departments of education, or State universities and colleges. Research is seldom coordinated with that conducted by agencies other than those just mentioned. The reports also indicate (although the facts are not presented in Table 17) that research work is coordinated with that done by teachers in the



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same system, by teachers in other systems, and by State universities more frequently in the smaller cities than in the larger cities. Even though the small number of cases make generalizations unreliable, the data point toward the fact that research work is frequently done by research bureaus or by individual secondary-school teachers within the system with little or no attempt to coordinate this work with that done by other agencies of research.

*Agencies which coordinate research work.*—The inquiry form sent to directors of research also requested data concerning the different agencies active in coordinating research work. These data are set forth in Table 18. Whenever research work is coordinated with that conducted by other agencies, the bureau of research is the coordinating agency in a great majority of the cases. Particularly is this true with respect to the coordination of research work among teachers within the system. In Table 17 it was shown that 35 directors report coordination of work among teachers within the system. In Table 18 it is shown that of the 34 reporting, 28 indicate that research bureaus effect this coordination. State departments of education and State education associations are reported as coordinating agencies much less often than the research bureaus themselves.

TABLE 18.—Persons or agencies reported by 42 directors of bureaus of educational research as coordinating research work of school systems

Agencies coordinating research work	1	2	3	4	5	6	7	8	9	10	Total
1	2	3	4	5	6	7	8	9	10	11	12
1. Department of research in system.....	28	4	6	4	2	1	.....	4	.....	3	52
2. State department of education.....	.....	.....	1	6	.....	.....	.....	.....	.....	.....	7
3. Teachers' associations.....	.....	.....	.....	.....	6	.....	.....	.....	.....	.....	6
4. High-school principals.....	2	.....	.....	.....	.....	.....	1	1	.....	.....	4
5. Superintendents.....	1	.....	1	.....	1	.....	.....	.....	.....	.....	3
6. University or college authorities.....	1	1	1	.....	.....	.....	.....	.....	.....	.....	3
7. Principals' associations.....	.....	.....	.....	.....	.....	.....	.....	2	1	.....	3
8. Phi Delta Kappa fraternity.....	.....	.....	1	1	1	.....	.....	.....	.....	.....	3
9. Graduate students.....	1	.....	1	.....	.....	.....	.....	.....	.....	1	3
10. National Education Association.....	.....	1	.....	.....	1	.....	.....	.....	.....	.....	2
11. Other.....	1	.....	.....	.....	1	.....	.....	.....	.....	.....	2

<sup>1</sup> The key to these numbers is as follows:

1. Teachers within the same school system.
2. Teachers in other school systems.
3. Research departments in State universities and colleges.
4. Research departments in State departments of education.
5. Research departments in State teachers' associations.
6. Private universities or colleges.
7. National Education Association.
8. Other research departments.
9. Principals' associations.
10. Other plans.

<sup>2</sup> This number exceeds the number of directors because one director may coordinate the research work of more than one other research agency.

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Little or no distinction is made between the coordination of research on the elementary or secondary school levels by any of the agencies listed in Table 18 except where research is coordinated by secondary principals' associations. These associations, of course, deal exclusively with research work at the secondary-school level.

TABLE 19.—*Methods used by the different agencies for coordinating research work*

Agencies with which research work is coordinated	Methods of coordinating research work						Total
	1	2	3	4	5	6	
	2	3	4	5	6	7	8
1. Teachers within the same school system.....	18	6	14	17	7	4	66
2. Teachers in other school systems.....	2	5	2	1	1		11
3. Research departments in State universities and colleges.....	3	3	1	3	7		17
4. Research departments in State departments of education.....	5	5	1	2	1		14
5. Research departments in State teachers' associations.....	1	4		1		2	8
6. Private universities or colleges.....	2	2		1	2		7
7. National Education Association.....		1					1
8. Other research departments.....	4	5	2				11
9. Other plans.....		2					2
<b>Total.....</b>	<b>35</b>	<b>33</b>	<b>20</b>	<b>25</b>	<b>18</b>	<b>6</b>	<b>137</b>

The key to these numbers is as follows:

1. Outlining projects in order to obtain similar attack on same problems.
2. Exchanging results of research work.
3. Developing a program of research activities.
4. Directing and guiding research work.
5. Providing school as laboratory for research work.
6. Other methods.

*Methods by which research work is coordinated.*—It has been suggested in the preceding section that a variety of methods are employed by the different agencies in coordinating research activities. The methods employed by the different coordinating agencies, as reported by the directors of 39 city school research bureaus, are presented in Table 19. Outlining research projects and exchanging results of research work are the most frequently mentioned methods of coordination. The former is a definite step toward the development of a research program, the latter toward making research studies available to interested workers and toward getting the results of research into practice. Closely akin to exchanging results of research is the publication of bibliographies of research studies

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either in progress or completed. Much valuable work has been done in this field by the United States Office of Education, the National Education Association, the Department of Secondary School Principals, and certain State and private universities.

### 7. SUMMARY

Bureaus of research in city systems perform many different types of administrative duties and functions, but particularly they perform those which relate to administering achievement and mental tests, answering questionnaires, publishing reports, and classifying school children. While many of the activities and functions listed as administrative and supervisory may in some ways relate to research, the performance of most of these activities is not research in the stricter sense. Nearly a third of the investigations conducted by research bureaus deal with achievement or mental testing and few studies are being made concerning teaching methods, supervision, or library service. Half the total number of studies in progress during the year 1929-30 dealt primarily with secondary education.

Studies are made available for general use in less than 60 per cent of the cases. This is done chiefly through the distribution of mimeographed reports. Only about 7 per cent of the studies have been printed and only about 2 per cent of them have been published in educational periodicals. Relatively few of these studies have been used as masters' or doctors' theses, and only about 10 per cent were reported by directors of research as markedly affecting school organization or administration. This signifies that the investigations conducted by city bureaus of research do not have wide circulation and that many of them are not duplicated at all. Data presented in Chapter V supply evidence concerning the reasons why it is not desirable for many of the reports to be published and why so few of them markedly affect school practices.

In a majority of cases research activities of the bureau are coordinated with those of other agencies. Research bureaus most frequently coordinate the work either by outlining the projects in order to obtain a similar attack on the problems or by exchanging the results of research work. How-

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ever, State departments of education and State teachers' associations are mentioned as research coordinating agencies.

The portrait of research activities engaged in by the bureaus as disclosed by the evidence of the chapter is far from flattering. It will be well to remember that the picture is a composite in which a number of bureaus are represented. Such a composite is hardly fair to a small number of individual bureaus engaged in broad and significant programs of research. It is certain that inspiration would be gained from a description of a few such programs, if time and space had permitted their exposition here.

Further evidence concerning the nature of the reports emanating from bureaus of research is presented in Chapter V.

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## CHAPTER IV : RESEARCH OUTSIDE THE BUREAUS

### 1. THE CONCERN AND SOURCES OF THE CHAPTER

*Value of research by teachers and principals.*—Educational literature during the past few years has frequently urged that research is a function of principals and teachers as well as of research departments or bureaus. Articles such as "The Public-School Teacher as a Research Worker,"<sup>1</sup> "The Participation of the Classroom Teacher in Educational Research,"<sup>2</sup> "The Principal as a Research Worker,"<sup>3</sup> and "Opportunities for the Classroom Teacher as a Research Worker,"<sup>4</sup> imply that, if educational research is truly a function of teachers, some time should be given for the performance of this function and some recognition should be made of teachers' efforts along these lines.

*Purpose of the chapter.*—It is the purpose of this chapter to present data concerning the general nature and scope of the research being done by secondary-school staff members in (1) city systems with research bureaus, (2) secondary schools reported to the National Survey as being those in which significant research is carried on, and (3) secondary schools chosen at random. This evidence, joined with that concerning research in secondary education being done by bureaus of research, supplied in other chapters of this report, should give a fairly complete picture of research activities pertaining to secondary education as they are carried on within schools and school systems.

*Source of data.*—The inquiry forms sent to directors of research bureaus requested information concerning research investigations made by persons in the secondary schools who have no official connection with the research bureau. These reports furnish the data for the next section of the

<sup>1</sup> Buckingham, B. R. The Public-School Teacher as a Research Worker, *Journal of Educational Research*, 11 : 235-243, April, 1925.

<sup>2</sup> Sangren, Paul V. The Participation of the Classroom Teacher in Educational Research. *Educational Administration and Supervision*, 15 : 599-601, November, 1929.

<sup>3</sup> Farnsworth, B. K. The Principal as a Research Worker. *Utah Educational Review*, 12 : 14-15, 52-54, September, 1928.

<sup>4</sup> Goodykoontz, Bess. Opportunities for the Classroom Teacher as a Research Worker. *School Life*, 15 : 161-163, May, 1930.

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current chapter. As was indicated in Chapter I, inquiry forms were mailed to 197 principals of secondary schools which were reported to the Survey as exhibiting noteworthy developments in research within schools. The returns of 66 principals from schools reported as outstanding constitute the chief source of data for section 3, and the reports of 102 principals of schools chosen at random are summarized briefly in section 4.

### 1. RESEARCH BY STAFF MEMBERS IN CITY SYSTEMS

*Staff members devoting time to research.*—If the research activities on the part of secondary-school staff members are

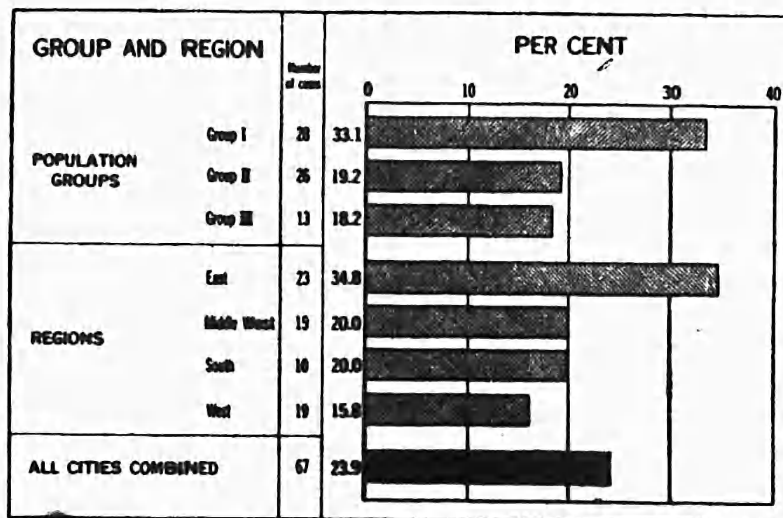


FIGURE 6.—Percentages of systems in which staff members not officially connected with research bureaus are permitted to devote part time to research

encouraged by superintendents and boards of education, this encouragement should find expression in enabling such persons to devote at least a portion of their time to research. The reports of 67 directors of research presented in Figure 6 indicate that in almost a fourth of the systems school boards make such provision for members of the school staff not officially connected with the bureau of research. The provision, however, does not apply to many members of the staff, for in the systems in which the provisions are made, the number of staff members allowed time for research is usually restricted to one person. The largest number reported by any of the 67 directors of research was nine.

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In cities of more than 100,000 population allowance of time for staff members to conduct research is made more often than in smaller cities. Also, systems in the East appear to follow this practice more often than in the other regions.

Although we may deplore the fact that practice lags so far behind theory in this respect, it is gratifying to find even a minority of systems encouraging research in this way.

*School levels to which studies relate.*—The directors of research submitted data showing the general nature of the research studies made by secondary-school staff members not officially connected with research bureaus. Sixty-nine directors reported on whether they knew of research studies completed during the school year 1929-30, independently of research departments, by teachers or administrative officers. Of this number 42, or 61 per cent, knew of no such studies. The reports of the 18 directors of research who knew of such studies are presented in Table 20. As might be expected from the nature of the inquiry, relatively few of the investigations related to the elementary-school level only or were general with respect to level. About four-fifths of the 118 investigations reported as being made in 1929-30 by secondary-school staff members not connected with research bureaus relate to the secondary-school level only.

It may also be noted that 101 of the 118 investigations reported were being made by staff members in cities of more than 100,000 population and that 76 of them were being made in the East. However, the numbers of cases by population group and region are too small to justify assured conclusions. The average number of studies made by persons not connected with research bureaus is seen to vary considerably, perhaps largely because of the limited number of systems represented in the response.

As a whole, the inquiry discloses a relatively small extent of research being carried on in this way, at least in so far as the knowledge of directors of research may be accepted as a criterion.

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TABLE 20.—Number of studies made during 1929-30 by persons not officially connected with research bureaus in 18 systems in which directors of bureaus knew of such studies

Population group and region	Number of directors reporting	Number of studies			Total	Average number of studies per system
		Relating to elementary-school level only	Relating to secondary-school level only	General with respect to level		
1	2	3	4	5	6	7
Population group:						
I.....	9	3	86	12	101	11.2
II.....	7	3	7	1	11	1.8
III.....	2	6			6	3.0
Region:						
East.....	3	4	67	5	76	25.3
Middle West.....	5	2	6		10	2.0
South.....	4	4	4	2	10	2.5
West.....	6	2	16	4	22	3.7
All combined.....	18	12	93	13	118	6.5

Number of studies mimeographed or printed.—Of the 118 studies known to have been conducted in 1929-30 by persons not connected with research bureaus, only 34, or 29 per cent, are shown by Table 21 to have been either mimeographed or printed. A fact not reported in the table is that the number printed is almost negligible. The proportion is even smaller than for projects carried on by bureaus of research as shown in Chapter III.

TABLE 21.—Information concerning studies made in 1929-30 by persons not officially connected with research bureaus (as reported by directors of 18 bureaus)

Population group and region	Total number of studies	Number printed or mimeographed	Number used as theses		Number advised by bureau	Number given clerical help	Number affecting organization and school practice
			Masters'	Doctors'			
1	2	3	4	5	6	7	8
Population group:							
I.....	101	28	36	2	27	6	12
II.....	11	5	4	1	10	1	2
III.....	6	1					1
Region:							
East.....	76	18	27	2	19		7
Middle West.....	10	6	2	1	9	4	3
South.....	10	4	2		2	1	4
West.....	22	6	9		7	2	1
All combined.....	118	34	40	3	37	7	16



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*Number of studies used as theses.*—In Chapter III it was also pointed out that 11 only of the 1,121 studies in progress during the year 1929–30 were being used as either masters' or doctors' theses. The data concerning the number made by individual staff members (see Table 21) indicate that a much larger proportion—more than a third—were submitted to institutions of higher education as theses. Thus, the motive of securing advanced degrees is rather frequently at work in stimulating research among nonbureau members of secondary-school staffs.

In the cities of fewer than 30,000 none of the six studies reported was used as a thesis, whereas almost half of those made in cities of from 30,000 to 100,000 were so submitted.

*Number of studies advised by bureau.*—One of the methods by which bureaus of research frequently coordinate educational research, as was pointed out in Chapter III, is the direction and guidance of research investigations performed by staff members of the systems who are not on the staffs of the bureaus. It may be seen in Table 21 that, for all groups and regions combined, about a third of the studies made by staff members were advised by the bureau. Because the data were summarized from the reports of directors of research, this figure is probably based on a liberal estimate of the advisory connection of the bureaus. Data are not at hand to show the extent or the type of advice given by the research bureaus.

*Number of studies given aid by bureau.*—In only 6 of the 118 studies conducted by persons not connected with research bureaus were the investigations given clerical assistance or other aid by the bureau. In these few cases some clerical service was given in three cases, paper was supplied in two, and tests were supplied in the other.

*Number markedly affecting school practice.*—Evidence reported in Table 21 when compared with that presented in Table 16 shows the directors of research reporting studies made by individual staff members markedly affecting school practice and organization just as frequently as, if not more often than, studies made by the bureau of research.

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### 3. RESEARCH IN SECONDARY SCHOOLS REPORTED AS EXHIBITING OUTSTANDING DEVELOPMENTS IN RESEARCH

*Number of schools reporting.*—It was stated in Chapter I that 197 secondary schools had been reported by State superintendents, city superintendents, and secondary-school principals as being outstanding with respect to the prosecution of significant research. Principals of these schools were approached by inquiry form to ascertain the nature and scope of the programs. Sixty-six made usable returns. Thirty-two, or almost half of the 66, reported that little or no research work was carried on in their schools during the year for which the report was requested. Undoubtedly many principals did not return the forms because they felt that the research being carried on was not significant enough to report. Two only of these secondary schools were reported as having research bureaus.

Inasmuch as the number of cases is small, no attempt will be made to present any detailed account of the nature of the research conducted in these schools.

*Research work done by staff members.*—In 10 only of the 23 schools where research work was reported does the board make allowances of time to staff members for research activities. In none of the schools is more than one person made an allowance of time for research and the proportion of time given in these few instances ranged from 5 to 25 per cent. The principals reported that 110 investigations were completed by staff members during the year 1929-30. Almost one-half of these were reported from schools in Baltimore and Detroit where teachers are encouraged and guided in carrying on research.

The data were not sufficiently complete on 64 of the 110 to permit distinguishing the school levels to which they pertained. One-half of the remaining 46 dealt solely with secondary education, 11 solely with elementary education, and the remaining 12 were general with respect to level. Only 19 of the 110 have been printed or mimeographed; only 9 were advised by the bureau, and only 6 received clerical aid from the bureau. Ten, or 19 per cent, of the studies reported to be made outside of Baltimore and Detroit were used as masters' or doctors' theses.

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### 4. RESEARCH IN SECONDARY SCHOOLS CHOSEN AT RANDOM

*Number of schools reporting.*—The principals of 406 secondary schools chosen at random were requested to cooperate by filling in an inquiry form pertaining to research activities within the schools. Of this number only 128 signified their willingness to cooperate and forms were sent to this number. One hundred and two usable forms were returned. Of this number, the replies of 72, or 70 per cent, admitted that no research work of any significance was being carried on in the schools represented. Even though relatively little research was reported above as being conducted in the schools reported as outstanding, it appears on the basis of the available data that research is reported in a greater proportion of them than in schools selected at random. No bureaus of research were reported in the randomly selected schools and only five schools reported that allowances of time were made for carrying on research activities.

*Research work done by staff members.*—The 30 principals indicating that some research was being done in their schools reported a total of 46 studies being made during the year 1929-30. Of those, only 2 were aided by clerical assistance from the school, 8 were advised by the bureau of research, and 10 had been mimeographed. Thirteen, or about 30 per cent, were used as masters' theses. The only conclusion to be drawn from these few data is the significant lack of research by staff members of secondary schools selected at random. In a few cities definite attempts are made to stimulate teachers to carry on research and in a substantial number of places research work is done by persons seeking advanced degrees. Beyond this, little research is done in the run of secondary schools.

### 5. SUMMARY AND SIGNIFICANCE

The reports of directors of research bureaus in city systems indicate that school boards in only about a fourth of the systems make allowances of time to permit teachers or other staff members to carry on research activities. These directors reported a total of 118 investigations conducted by staff members not connected with research bureaus. A small proportion of the studies have been reproduced for

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distribution, more than a third were used as masters' or doctors' theses, almost a third were advised by bureaus, few studies received aid from city research bureaus, and only about an eighth are reported to have markedly affected school organization and practice.

The most significant feature with respect to the attempt to obtain information concerning the nature of research work conducted by staff members in secondary schools, some of which were reported as being outstanding and some of which were selected at random, is the extremely small proportion of schools in which any research work is carried on. Without doubt the situation in systems and schools generally is no better than that reported by the directors of research and secondary-school principals.

Although the findings of this chapter are rather discouraging from the standpoint of the amount of research being done within systems and schools, the fact should not be overlooked that beginnings have been made. The whole movement for educational research is new and it is probably too much to expect that a great deal should have been accomplished in the brief period during which scientific investigation in education has been considered feasible. However, many school systems and a few individual secondary schools have bureaus of research that should be commended for the service which they render toward the advancement of education locally and generally.

It would have been profitable, had time permitted, to have studied intensively the activities in a few secondary schools in which vigorous programs of research are carried on. Such a study would have revealed not only what is done in some schools but also what can be done in many schools if only adequate provision is made for the work and it is otherwise encouraged.

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## CHAPTER V : CLASSIFICATION AND ANALYSIS OF RESEARCHES MADE

### 1. A COMPARISON OF RESEARCHES BY DIFFERENT AGENCIES

From time to time throughout this report mention has been made of the nature and quality of research work conducted by different research agencies. It is the purpose of this chapter to classify a number of investigations made by different agencies and to analyze a limited number made by city bureaus of research and by graduate students of education.

The inquiries sent to the directors of research in city systems requested copies of reports of research studies recently completed by the bureau. A considerable number was received. However, for the purpose of making this analysis, only the 111 studies thus submitted which related primarily to secondary education were utilized. Thirteen masters' theses relating to problems of secondary education from seven different higher institutions of learning and 17 doctors' theses from seven other different institutions were also analyzed in order to make possible comparisons of researches conducted by city bureaus and the research work carried on by graduate students under the direction of faculties in departments of education in the institutions of learning throughout the country. The theses were selected from those relating to secondary education available for loan from the United States Office of Education. The Office of Education has for some time sought such theses, in order to have them available to interested persons. The selection for the present comparison aimed to have the theses as representative as possible of the product of departments of education in universities. Not more than three or four studies were analyzed from any single institution and most institutions were represented by one thesis only.

### 2. CLASSIFICATION OF RESEARCHES

*Studies reported to the Office of Education.*—The United States Office of Education has published several bulletins listing the researches in education made by different agencies.

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Tables 22 and 23 indicate the classification of research studies reported. In making any interpretation of these data it must be kept in mind that it was difficult for the Office of Education to make any classification according to fields of investigation because in most cases only titles of the studies were reported. However, the data presented should be of value in indicating the relative emphasis placed upon different fields by the different agencies.

TABLE 22.—Percentages of research studies conducted in 1929-30 in different fields by certain agencies<sup>1</sup>

Field of investigation	Graduate students		City schools (425)	State departments (177)	State education associations (15)	Persons connected with universities (456)	U. S. Office of Education (67)	Others (949)	Total (4,651)
	Doctors' theses (323)	Masters' theses (2269)							
1	2	3	4	5	6	7	8	9	10
Educational history and biography.....	1.6	2.3	.....	0.6	.....	2.5	.....	0.3	1.5
Current educational conditions—United States.....	.6	1.2	1.4	6.7	6.7	2.1	11.9	.4	1.5
Current educational conditions—foreign countries, international aspects.....	3.7	1.5	.2	.....	.....	.....	3.0	1.0	1.2
Educational theory and practice, special methods, individual differences.....	3.7	3.1	2.4	2.9	.....	4.4	1.5	4.2	3.5
Educational psychology, child study, etc.....	5.9	2.2	.7	.6	.....	3.4	.....	7.6	3.5
Testing and research.....	3.1	1.7	11.1	4.0	.....	5.1	1.5	9.3	4.5
Special subjects of curriculum.....	18.1	26.8	25.2	16.3	13.2	22.0	.....	17.8	23.0
Elementary education, including pre-school, kindergarten, and primary.....	1.3	1.0	2.1	3.4	6.7	.5	4.5	1.3	1.2
Secondary education.....	3.7	4.1	3.3	5.7	6.7	4.6	7.4	3.3	4.0
Teacher training and status.....	11.4	6.5	7.1	12.3	13.2	3.6	7.4	12.0	8.5
Higher education.....	5.9	1.6	.4	.6	.....	8.4	3.0	2.7	2.7
School administration.....	9.2	5.8	4.0	9.5	26.7	3.9	10.5	7.3	6.3
School management.....	3.7	7.3	20.0	7.8	.....	8.5	1.5	7.3	8.2
School buildings.....	1.3	1.3	1.9	4.5	.....	1.4	6.0	2.3	1.8
School health and physical education.....	2.5	4.5	4.5	2.9	.....	6.7	3.0	5.1	4.2
Play, social aspects, and child welfare.....	2.5	2.4	.9	.6	6.7	.9	6.0	1.9	2.0
Rural education.....	.6	2.7	.....	1.7	.....	1.6	11.9	.7	1.8
Moral and religious education.....	4.7	4.9	.4	.....	.....	2.8	1.5	2.9	3.8
Guidance.....	1.0	2.1	2.4	2.9	.....	1.6	1.5	2.7	2.0
Vocational training, including agricultural education, home economics, commercial education, and professional education.....	5.8	9.2	4.7	8.8	6.7	6.7	14.9	2.0	7.0
Civic and military education.....	.....	.6	.7	.6	.....	.2	.....	.2	.5
Education of women.....	1.3	1.0	.....	.....	6.7	.9	.....	.7	.8
Education of racial groups.....	3.1	1.4	.9	2.9	.....	1.4	.....	.7	1.5
Exceptional children.....	3.1	2.1	3.1	.6	6.7	1.8	1.5	3.0	2.5
Education extension and libraries.....	2.3	2.7	2.6	5.1	.....	3.0	1.5	2.3	2.8

<sup>1</sup> Data computed from table shown on p. xi of Bibliography of Research Studies in Education. United States Office of Education Bulletin, 1931, No. 13.

Note.—The numbers in parentheses indicate the numbers of researches reported and used as bases in the computation of percentages.

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TABLE 23.—Percentages of research studies in different fields conducted in 1930-31 by State departments of education, State education associations, and city school systems <sup>1</sup>

Field of investigation	State departments (583)	State education associations (104)	City systems (1,144)
1	2	3	4
Current educational conditions.....	1.2	4.8	1.3
Educational theory and practice, special methods, individual differences.....			2.8
Testing and research.....	5.8		10.1
Special subjects of curriculum.....	26.6	6.7	33.0
Elementary education, including preschool, kindergarten, and primary.....	2.2		1.8
Secondary education.....	6.5	3.8	4.7
Teacher training and status.....	12.5	38.4	4.5
Higher education.....	1.5	1.9	
School administration.....	18.3	37.5	10.1
School management.....			11.1
School buildings.....	6.3	3.9	2.0
School health and physical education.....			2.9
Play, social aspects, and child welfare.....			.6
Guidance.....	2.1	1.0	3.8
Vocational training, including agricultural education, home economics, commercial education, and professional education.....			4.7
Civic and military education.....			1.0
Education of racial groups.....			.6
Exceptional children.....	5.2		3.2
Education extension and libraries.....	1.0	1.0	1.8
Reports.....	10.8	1.0	

<sup>1</sup> Data were compiled and computed from lists of research studies in State departments of education, State education associations, and city school systems as found in Office of Education Circulars No. 18, August, 1930; No. 31, January, 1931; No. 42, October, 1931; and No. 44, January, 1932.

NOTE.—The numbers in parentheses indicate the numbers of researches reported and used as bases in the computation of percentages.

The data reported for 1929-30 (see Table 22) indicate that special subjects of the curriculum received greater emphasis than any other single field from each of the agencies listed except the State education associations which place as great emphasis on teacher training and status and more emphasis on school administration than on special subjects of the curriculum. A greater percentage of the studies made by bureaus of research in city systems relate to school management than do researches conducted by the other agencies. Differences are also to be noted in the fields of testing and research and school management.

The difference in emphasis is made more apparent by a study of the data shown for State departments of education, State education associations, and city school systems in 1930-31 as shown in Table 23. During that year when the

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effects of the current economic recession began to be felt more acutely, city systems and State departments continued to place the greatest emphasis on special subjects of the curriculum, but about three-fourths of the studies made by State education associations related to teacher training and status and to problems of school administration.

*Studies examined for this project.*—As has been stated, the reports of studies analyzed for this investigation are concerned with problems relating primarily to secondary education. Of the 111 studies from city systems examined, a full half deal with the construction of tests, the administration of achievement or mental tests, or the survey of subject fields through the use of standardized tests or classroom examinations. (See Table 24.) It was found that 6 studies were concerned with the classification or grouping of pupils; 8 with acceleration, retardation or pupil failures; 12 with marks and marking or progress reports of pupils; and 4 with follow-up studies of high-school pupils.

TABLE 24.—*Classification according to fields of the researches analyzed for this project*

Fields of Investigation	City bureaus of research	Theses in graduate schools
Administration or construction of tests.....	56	4
Marks and marking.....	12	4
Acceleration and retardation or pupil failure.....	8	1
Training or salary status of teachers.....	7	4
Classification of pupils.....	6	1
Follow-up studies.....	4	1
Subjects of curriculum.....	3	8
Teaching devices.....	3	2
Other fields.....	15	10
Total.....	111	30

More than a fourth of the 30 masters' and doctors' theses examined relate to subjects of the curriculum, 4 relate to the relationship of intelligence to school success, 4 are concerned with teacher training or salary status, 2 with teaching devices, and the remaining 12 cases are concerned with other fields of investigation. With the general situation in mind some comparisons will be made of the nature of research done by bureaus of research in city systems and by graduate students of education as theses.



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### 3. ANALYSIS OF RESEARCH STUDIES

*Scope of the analysis.*—This report does not presume to present a complete analysis of the quality and value of researches made by different agencies. Numerous published accounts have set up guiding principles on how to conduct and judge research work. However, many of the items within such lists depend largely upon the subjective judgments of the person or persons analyzing the reports. Because time and space for this report did not permit securing a group of judges to analyze the studies, and because the author did not desire to pass judgment on the quality of research work on subjective bases, the examination of the research studies has been made in relation to certain questions that may be answered on comparatively objective bases, even though these bases do not represent anything like a complete category of criteria. The bases are implied in the following questions:

- (1) What methods have been used for duplicating the report?
- (2) How many pages are there in the report?
- (3) Is the report divided into chapters, parts, or subdivisions?
- (4) What methods have been used for binding the report?
- (5) Does the author call attention to related studies or does the report have a bibliography?
- (6) How many tables and figures are there in the study?
- (7) How much space is devoted to tabular and graphical material?
- (8) Are data interpreted?
- (9) Is the problem defined?
- (10) Is the method or methods of investigation stated?
- (11) What methods are used in obtaining the data?
- (12) Is the source of data made clear?
- (13) Is the study dominantly based on opinion or fact?
- (14) Are findings applied to concrete problems?
- (15) Are further studies suggested?
- (16) What statistical methods are utilized in presenting the data?
- (17) Does the study have a summary or conclusion?
- (18) What do the conclusions show?

*Limitations of the analysis.*—It is admitted that an analysis of research studies made upon the bases implied in the questions in the preceding section does not necessarily reveal the value of research work, certainly not on each basis individually. Studies may rank well on nearly all the bases and still lack the logical development, interpretation, and applicability of data that make the research a valuable piece of

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work. The mechanics of the report may be very good, yet the interpretation may be faulty or the ideas ineffectively expressed. Some of the bases, such as manner of reproduction, method of binding, number of pages, or the division of the report into chapters or other subdivisions, are of even less value than the remaining bases. However, even these may be to some extent a test of value in research, at least when taken into account with the more significant objective bases of comparison used. The composite of comparisons should be helpful in appraising the research programs of the bureaus.

*Bases for classifying reports.*—(1) *Methods of duplicating studies.*—The 111 reports from city bureaus have been mimeographed except 2 which were typewritten. No printed report of the findings of any of the 111 studies was discovered. Ten of the masters' theses were typewritten, 1 mimeographed, and 2 printed as bulletins of State universities. Abstracts of 2 of the masters' theses examined were printed and in addition phases of 3 studies have been published in educational periodicals. Fourteen of the doctors' theses were printed in monograph form, 1 as a university bulletin, 1 by a State society for the study of education, and 1 by the Federal Board for Vocational Education.

(2) *Number of pages.*—The number of pages in the reports from city bureaus ranges from 1 to 34 with a median of 8.3 pages of mimeographed material on letter-size paper (8 by 10½ inches). Masters' theses, however, range from 40 to 250 pages of typewritten material. The median length among the 13 theses examined is 99 double-spaced typewritten pages. Doctors' theses are all printed and range in length from 48 to 251 pages. The median was found to be 96 pages of printed material.

(3) *Division of report into chapters, subdivisions, and parts.*—It is obvious from the preceding section that reports which average no more than 8 pages in length could hardly be organized according to chapters or in many instances even by parts or minor subdivisions. None of the reports from city bureaus was divided into chapters, 14 were divided into parts, and 20 were divided into minor subdivisions. The remaining 77 had no major or minor subdivisions.

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Ten of the masters' theses were divided into chapters, 2 into parts, and 1 into minor divisions. All the doctors' theses were organized into chapters and, in addition, every doctor's thesis and nearly every master's thesis was further divided into minor divisions in order to present the data more effectively.

(4) *Binding.*—The number of pages is also a determining factor in the binding of these research studies. Naturally one would not expect to find bound the brief reports of 8 to 10 pages. Only 7 of the studies from city bureaus were bound in any manner except by a mimeographed title page stapled to the body of the report. Eleven of the masters' theses and all the doctor's theses were bound.<sup>1</sup>

(5) *Citation to related studies and bibliography.*—Two only of the 111 reports of studies from city research bureaus examined made any mention of studies related to the report. Only 1 contained bibliographical references. Of the masters' theses, 9 make citations to related studies and 10 have formal bibliographies. All the doctors' theses have bibliographies and 14 in addition refer to related studies during the treatment of the problem. Bibliographies are not presented in the reports of research bureaus probably because they are not needed in presenting factual material from a local school system. Almost no effort is made in the reports from city bureaus to relate the results of research in the system with research conducted in other systems or by other agencies.

(6) *Amount of space devoted to tabular and graphical material.*—Estimable research may be presented without the use of tables or figures, but the amount of space devoted to the presentation of tabular data has a bearing on the amount of space available for interpretation. Although such a pro-

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<sup>1</sup> It is not contended that methods of duplicating studies, the number of pages, the division of the reports into chapters, or the methods of binding are true criteria of the value of educational research. However, the study of these data can but leave the impression that research reports from city bureaus are less formidable documents than are either masters' or doctors' theses. Since the length of a report is no adequate index of the value of the study, the conclusion to be drawn from these data is that the projects reported on by city research bureaus appear to be more limited in extent or scope or treatment than are researches made in partial fulfillment of the requirements for advanced degrees. Apparently city bureaus tend to make reports on specific problems and frequently make no attempt to discuss related problems which may or may not have important bearings on the problem being treated.

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cedure does not enable one to judge the effectiveness of the interpretation, it is evident that interpretation can not satisfactorily be made unless adequate space is allotted for it. For this reason the numbers of tables and charts have been counted. The range in number of tables is from 0 to 29 and the median number is 6.2. Only 24 have any charts or figures and only 7 have more than 2. All masters' and doctors' theses examined have tables. The range in number of tables is from 2 to 99 in masters' theses and from 8 to 105 in doctors' theses. The medians are 14 and 27, respectively, for the masters' and doctor's studies analyzed. Tables, charts, and figures occupy almost 70 per cent of the total amount of space in the 111 reports examined from city bureaus of research. In contrast with this, tabular and graphical presentations occupy 33 per cent of the space in masters' theses and about 31 per cent in doctors' theses. The extremely large proportion of space devoted to tabular and graphical presentations greatly limits the opportunities for adequate interpretation of the data. These facts also lend support to the contention that many of the studies made by city bureaus of research are concerned chiefly with the compilation and presentation of factual material rather than its interpretation and application to school practices.

(7) *Interpretation of data.*—Whether the reports and studies make any attempt to interpret data at all is objective, but judgment of the effectiveness of the interpretation attempted must be largely subjective. For the purpose of this comparison, interpretation was taken to mean a discursive treatment of the data which aims to bring out the meaning of the facts presented. In the judgment of the author less than a third of the studies examined from city bureaus made any appreciable attempt to interpret the facts. Judged by these reports, city bureaus are frequently only fact-finding agencies.

(8) *Definition of the problem.*—Only 36 per cent of the studies made by city bureaus have any statements relative to the purpose and nature of the problem, but all masters' and doctors' theses examined contain reasonably effective statements of the problems under consideration.

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(9) *Statement of method of investigation.*—Approximately three-fourths of the reports of studies from city bureaus of research examined have no statements concerning the method or methods employed in making the study. In contrast with this, all but two of the masters' and doctors' theses have more or less explicit statements concerning the methods used. Failure to state clearly the problem under consideration or to explain the methods used in the study hinder the reader from being completely oriented in the problem.

(10) *Methods used in securing data.*—Data for about three-fourths of the reports of studies from city bureaus of research examined were based on the transcription of data from the available school records or of test scores obtained through the administration of tests or examinations. Three only might be termed experimental, two utilized the questionnaire technique, and two utilized the documentary or bibliographical technique. Four studies were nothing more than essays or written descriptions of procedures followed in some phase of the school work. The fact that practically all data were obtained from local records indicates that the studies are concerned largely with educational conditions in one city only. Emphasis of the local situation is to be expected, but it seems unfortunate to exclude almost entirely related conditions elsewhere. This assumption is supported by even a cursory examination of the research conducted in city bureaus of research. Furthermore, fact-finding and fact-presentation are stressed by city bureaus rather than experimental inquiry of methods or procedures. Research conducted by advanced students in departments of education utilize the method of transcribing data in about 60 per cent of the cases, the questionnaire in 45 per cent of the cases, and the experimental technique in about a sixth of the cases. Other methods, such as the historical method, the case study, the interview, and the documentary technique are also utilized in some researches. A number of studies utilized more than one method of investigation, but no attempt has been made to determine which method is employed predominantly. The analysis tends to reveal that bureaus of research in city systems make studies or reports largely of local interest, using data from available records or tests, but that graduate

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students of education make studies of wider interest and use the questionnaire and experimental technique more frequently than do the bureaus of research in city systems.

(11) *Sources of data.*—About 30 per cent of the studies from city systems fail to make clear to the reader the sources of the data upon which the report is based. This was found to be true for less than 7 per cent of the masters' and doctors' theses examined. The situation indicates that the reports of graduate students are superior to those of city bureaus in this respect. In some instances the omission would be justified on the ground that workers in the system concerned would be aware of the source without exposition.

(12) *Basis in opinion or fact.*—The types of studies made by city bureaus, utilizing primarily data obtained from school records, are, in consequence, dominantly based on fact rather than opinion. Also because little or no interpretation is attempted, the judgments of authors play but small parts in the studies. On the other hand, researches made by graduate students are to a somewhat larger extent based on judgments of persons, on ratings on scales involving somewhat subjective judgments, or opinions of recognized authorities concerning educational problems. These, too, however, are dominantly based on fact.

(13) *Application to concrete problems.*—Only five of the reports of studies from city bureaus of research examined make any application of the findings to concrete problems. Almost a fourth of the masters' theses and about three-fifths of the doctors' theses apply the findings to the solution of educational problems.

(14) *Further studies suggested.*—Further studies of phases of the problem are suggested in only two of the researches from city schools in about 30 per cent of the masters' theses and in 12 per cent of the doctors' theses. The suggestion of further studies points out the limitations of the report and indicates methods through which the study may be extended and related to researches contemplated.

(15) *Statistical measures employed.*—It is clearly recognized that the number of different types of statistical measures employed for the particular measures used are not inevitably an indication of good research. A given research is not

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always improved by utilizing additional statistical measures while making it. However, something concerning the nature of the data and their manipulation may be noted in the extent and nature of the statistical computations involved.

The data presented in Table 25 indicate the types of measures employed and the percentages of studies making use of each measure. An outstanding difference is found in the fact that masters' and doctors' theses not only make use of more different measures but also make use of the more technical and less frequently used measures. In the light of the foregoing sections, this tends to imply that the researches made by city bureaus are of a relatively simple fact-finding nature; they are studies which require but few technical methods or statistical procedures in order to interpret and present the data. Undoubtedly some studies conducted by certain research bureaus in city systems—studies not submitted for this analysis—employ the more technical of the measures listed in the table.

(16) *The presence of summary and conclusion.*—Almost 60 per cent of the studies and reports from city bureaus examined have no summary of data nor any conclusion regarding the findings, their application to school procedures, or of their significance. On the other hand, all but one of the masters' and doctors' theses include a summary or conclusion, usually in a separate chapter. No attempt has been made to analyze the adequacy of the summary nor to determine whether the conclusions set forth are justified by the evidence presented. Even admitting that many of the conclusions are merely repetitions of factual evidence presented in the bodies of the reports, such summaries or conclusions tend to make the meaning available at one point.

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TABLE 25.—Frequency with which certain statistical measures were employed in the studies made by bureaus of research and in theses by graduate students of education

Statistical measures used	City research bureaus		Masters' theses		Doctors' theses	
	Number (111)	Per cent	Number (13)	Per cent	Number (17)	Per cent
1	2	3	4	5	6	7
Percentage.....	57	51.3	9	69.2	14	83.3
Median.....	50	45.0	5	38.5	7	41.2
Test scores.....	40	36.0	2	15.4	5	29.4
Range.....	22	19.8	4	30.8	7	41.2
Average (mean).....	20	18.0	23	23.1	11	64.4
Ranking.....	16	14.4			1	5.9
Quartile and quartile deviation.....	15	13.5	2	15.4	3	17.6
Measures of variability and dispersion.....	6	5.4	2	15.4	4	23.5
Correlation.....	5	4.5	3	23.1	8	47.0
Probable error.....	4	3.6	1	7.7	5	29.4
Techniques of prediction.....	3	2.7			1	5.9
Rating.....	1	.9			1	5.9
Coefficient of variation.....			1	7.7	1	5.9
Standard deviation of differences.....			1	7.7		
Standard error of average.....			1	7.7		
Experimental coefficient.....			1	7.7		
Regression.....			1	7.7		
Attenuation.....					1	5.9
Ratio.....					1	5.9
Reliability.....					3	17.6
Partial or multiple correlation.....					3	17.6
Differences.....					2	11.8
Probable error of differences.....					2	11.8
Critical ratio.....					1	5.9
Skewness.....					1	5.9
Per cent of variance.....					1	5.9

NOTE.—The numbers in parentheses indicate the number of studies of each type examined.

(17) *The nature of the summary and conclusion.*—About a third of the studies examined from city bureaus of research have summaries or conclusions setting forth the data relating to norms or standards of practice in the local school system. Only about a sixth offer any suggestions or recommendations for improvement. In contrast about half of the masters' theses and about two-thirds of the doctors' theses examined offered suggestions or recommendations for improvement of practices or procedures.

4. SUMMARY AND SIGNIFICANCE

The classification and analysis of research studies and reports submitted by city bureaus of research indicate that these studies are largely of a fact-finding nature. It is admitted that the bases used for classifying the research



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studies are not adequate criteria for judging the value of educational research. They are only some of the more objective bases by means of which comparisons may be made with research conducted by students of higher institutions. Nor does the Survey aim to defend the quality and value of the research presented in all masters' or doctors' theses. Although the comparisons and analyses made aim only to point out the differences between the two types of research work, it seems safe to conclude from the wide variety of evidence presented that the research reported in masters' and particularly in doctors' theses is greatly superior to the research work submitted by city bureaus of research to the National Survey of Secondary Education. The same conclusion has been reported by Douglass who made an analysis of 74 curriculum investigations carried on during 1929. He states that there is much superiority of the 48 theses over the other researches examined.<sup>2</sup>

The data presented in this chapter indicate, no matter which of the bases is used, that the studies submitted to the Survey by the bureaus of research in city systems are concerned primarily with the mere compilation of facts and statistics and consequently do not meet the prerequisite qualities of educational research promulgated by leaders in education as described in Chapter III. Although many of the studies reported are unquestionably valuable to the local school systems, it is easy to see that the specific projects engaged in could be larger and more significant and the programs of the bureaus in consequence be expanded and strengthened.

<sup>2</sup> Douglass, H. R. *Types and Fields of Curriculum Research in Secondary Education During 1929*. *School Review*, 38: 656, November, 1930.

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## CHAPTER VI: SUMMARY AND CONCLUSION

### 1. DEVELOPMENT AND ORGANIZATION OF RESEARCH BUREAUS

*The problem.*—It has been the purpose of this report on research in secondary education to study (1) the personnel of educational research bureaus; (2) the undertakings of research departments in city school systems and in individual secondary schools; (3) the research undertakings carried on by individual secondary-school staff members not officially connected with research bureaus or departments; and (4) the nature of the research conducted in secondary education within schools and school systems. Inquiry revealed that few bureaus of research have been organized in secondary schools and that nearly all research in secondary education carried on in school systems is conducted by the bureaus of research of city school systems. This necessitated the study of these bureaus, especially with respect to their activities at the secondary-school level.

*Growth in number of bureaus.*—It has been shown that the movement for organized research in education is comparatively recent, for it was not until the survey and testing movement was under way that city school systems and State universities began the organization of bureaus of research. From the establishment of the first bureaus about 1912 the number has grown rapidly until there are at present about 150 bureaus in city school systems and about 95 others divided among State departments of education, State educational associations, State universities and colleges, teachers colleges, and secondary schools. About half of the bureaus have been established since 1925 and about a fourth since 1928.

*The director of research.*—Exactly half of the full-time directors of research have ranks equivalent to that of assistant superintendents of schools. Part-time directors devote the remainder of their time to a diversity of other duties. The directors are usually responsible to the superintendent of schools and since many of them are in the line of authority they are given the right both by authorization and implication to investigate problems in any field of education. The direc-

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tors have had on the average less educational experience than superintendents or principals, but about the same as other administrative staff members. However, some directors of research have not worked in types of school positions that would give them a basis of practical school experience. Almost three-fourths have never taught in city elementary schools, about three-fifths have not been principals of elementary schools, and the same proportion have not been principals of secondary schools. On the other hand, directors of research, in terms of academic degrees held, are considerably better trained than other school officers. More than half of them hold masters' degrees and more than a fourth hold doctors' degrees. In addition, most of them have earned their advanced degrees in the field of education. At the time of inquiry the median salary paid full-time directors was about \$4,000.

*The staff of research bureaus.*—The staff of the median research bureau consists of the director and three assistants; the helpers are about equally divided between professional and clerical grade. About half of those professional assistants in the bureaus, who devote only part time to research, are elementary-school teachers. Part-time clerical assistants are frequently high-school pupils.

*The budget of research bureaus.*—The median salary and operating budgets of research bureaus were about \$9,700 and \$2,000, respectively. In view of the fact that the median bureau conducts 21 studies a year, it is difficult to see how comprehensive investigations can be made with the personnel and the resources available for research work. The financial resources must explain in part the limited types of researches reported. Classification and analysis of researches reveals that many of the studies involve merely the compilation and presentation of facts, and that the staffs of many bureaus are absorbed in duties and functions which are more of an administrative and supervisory type than of a truly research character.

*Research bureaus in secondary education.*—Only a few bureaus of research have been organized within individual secondary schools. The organization of these few differs but little from that of city-school bureaus, except that their activities pertain to the secondary-school level only.

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### 1. FUNCTIONS OF RESEARCH BUREAUS

*Administrative and supervisory functions performed.*—As already indicated, large proportions of the directors of research perform duties and functions which are not of a research nature. No attempt is made in this report to show that these administrative functions are not important. However, analysis supports the belief that these functions are not always in the nature of true research nor inevitably functions which should be delegated to research bureaus. The compilation of data, the administration of achievement and intelligence tests, and the classification of school children are important functions, but the administration of these activities is not research in the strict sense. At least school authorities should not confuse these activities with research and assume that, having provided bureaus so engaged, substantial research contributions are being made.

*Studies which bureaus may make.*—Bureaus of research are authorized to make studies of pupil failures, promotions, and testing more frequently than of certain other problems such as employment service, clerical service, teaching methods, and supervision. The data did not permit an analysis of the reasons why some types of studies are authorized more frequently than are others, but size of the system seems to influence the scope of activities.

In general, bureaus of research have actually made studies most frequently in the fields in which the greatest proportions of systems have been authorized to conduct investigations. Large numbers of studies have been made in the fields of testing, promotion, retardation, and elimination, and relatively few studies have been made in such fields as teaching methods, supervision, and library service.

*Studies made during 1929-30.*—Directors of research of 53 city bureaus reported a total of 1,116 studies in progress during the year 1929-30. The median bureau had in progress about 21 researches. As previously pointed out, the type of assistance furnished the director and the amounts which may be spent for the operating expenses of the bureau raise a presumption of doubt concerning the quality of many of these researches. Half of the studies in progress during the year were reported as relating primarily to the field of second-

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ary education. Slightly more than half of the studies in progress during 1929-30 were later mimeographed but relatively few have been either printed or published in educational periodicals. Only a few of the studies conducted in city bureaus have been submitted as theses for advanced degrees and about 10 per cent were reported by the directors of research as affecting, in any marked way, school organization and practice. The data do not permit an analysis of the extent and manner in which these studies have actually affected educational practices. This problem should be a fruitful field for further investigation.

*Coordination of research activities.*—Research activities of city bureaus are coordinated with those of other agencies inside or outside the system in only three-fifths of the cases. The research bureau provides such coordination as is attempted within city school systems by outlining the projects, by advising the staff members, and by exchanging the results of investigations with other bureaus or research agencies. A number of directors indicate that the bureaus attempt to develop a program of research activities and to guide and direct research work of teachers within the system.

State departments of education and State education associations have an opportunity of developing state-wide programs of educational research. Only a few States have attempted much along these lines.

### 3. RESEARCH BY PERSONS NOT CONNECTED WITH RESEARCH BUREAUS

Research has come to be considered by educational leaders as a function of teachers and principals, but to date few boards of education have made provisions enabling teachers to carry on research activities on school time. The number of researches carried on by staff members not connected with research bureaus is small and relatively few are ultimately mimeographed or printed. The real incentive for more than a third of the studies made by individuals unconnected with bureaus is the earning of advanced degrees. Research within individual secondary schools is even more limited in extent. Large proportions of the high-school principals, both of the schools reported as outstanding in research and of those selected at random, stated that no research was being conducted in the schools. As a result, if

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the contention is that teachers and principals should carry on research, practice lags far behind theory. At present little research is being carried on in secondary schools except by city bureaus of research, and in general even the investigations of these bureaus do not interpret the data and recommend improvements in school practice.

### 4. CLASSIFICATION AND ANALYSIS OF RESEARCHES MADE

In general, the reports of investigations submitted to the Survey indicate that bureaus of research in city-school systems devote the major portion of their time and energies to the compilation of facts and statistics. However, this conclusion is not unexpected in view of the many administrative and supervisory functions delegated to these bureaus. They do not have the time nor the resources to permit many investigations of a true research nature. It is admitted that facts and statistics concerning the school systems should be available to the superintendent and board at all times, but it is highly unfortunate that more bureaus do not conduct investigations of educational problems holding more promise of modifying and improving school administration, classroom techniques, teaching methods, and other educational practices. If bureaus of research in city systems are to lead the way to a sounder educational program, they will find it necessary to place emphasis on fundamental problems of educational practice rather than on the mere compilation and publication of facts and statistics.

### 5. CONCLUSION

The first impression from the evidence of this report is one of discouragement. The upshot of the facts presented is that the total extent and the quality of the research carried on within schools and systems is not highly commendable. The second thought on the situation disclosed is, however, more encouraging. The research movement in education, after all, is relatively new and each bureau and each school have had to work out their own problems and doubtless must at first justify their existence by rendering obvious services to administration. Performance of these functions which frequently resort to the procedures of research should gradually lead to committal to substantial programs of research in

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these bureaus, and these, in turn, should stimulate larger proportions of individual members of school staffs not officially connected with the bureaus to carry on significant studies. Much assurance may be taken from the fact that at least a small number of bureaus in city systems of the country are prosecuting estimable investigative programs. The existence of a large number of bureaus of research which have made beginnings and of at least a small number of bureaus with strong investigative programs are a prophecy of generous spread of research activity outside higher institutions that will help to elevate education to unquestioned professional status.

